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A JOURNAL OF THE NIGERIAN INSTITUTE OF OFFICE TECHNOLOGY AND INFORMATION MANAGEMENT



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About Us

The Nigerian Institute of Office Technology and Information Management (NIOTIM) is a professional body dedicated to the advancement of the Office Technology and Information Management profession in Nigeria. The Institute, incorporated on 27th February, 2025, is committed to promoting excellence, professionalism, innovation, ethical practice, and lifelong learning among practitioners, lecturers, researchers, and students in the field.

NIOTIM provides a platform for development of office technology and management, and information management professionals capable of meeting the challenges of today's dynamic digital workplace. The Institute promotes best practices in office administration, information management, digital technologies, records management, business communication, and related disciplines through professional development programmes, conferences, seminars, webinars, workshops, publications, certification, and research.

NIOTIM was established with an object to collaborate with educational institutions, government agencies, industry stakeholders, and international professional organisations to strengthen professional standards, encourage innovation, and enhance the quality of curriculum contents of Office Technology and Management on the one hand, and Office and Information Management in tertiary institutions in Nigeria on the other hand.

As a membership-based professional institute with membership covering all the six geopolitical zones of the nation, NIOTIM offers opportunities for networking, career development, mentorship, leadership, and mandatory continuous professional training. The Institute also recognizes outstanding contributions to the profession through its fellowship, awards, and professional certification programmes.

Driven by integrity, professionalism, service, innovation, and excellence, members of NIOTIM, majority of whom are lecturers in the Universities and Polytechnics, remain committed to nurturing and producing highly skilled professionals who contribute meaningfully to organizational effectiveness, national development, and the global knowledge economy.

Whether you are a learner, lecturer, researcher, or practising professional, NIOTIM welcomes you to become part of a vibrant community dedicated to shaping the future of Office Technology and Information Management in Nigeria.

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Editorial

The Global Journal of Innovative Research in Office Technology and Information Management (GJIROTIM) is a peer-reviewed scholarly journal of the Nigerian Institute of Office Technology and Information Management. The Journal operates a double-blind review process and accepts high-quality quantitative and qualitative research, employing one or a combination of recognized research methods. These include, but are not limited to, surveys, experiments, and, content analysis for qualitative and mixed method studies.

The aim of the journal is to promote the advancement of knowledge, research, and best practices in Office Technology, Information Management, and related disciplines. Consequently, the Journal welcomes original research articles, conceptual papers, and empirical studies in areas including - but not limited to - Office Technology and Information Management for sustainable development in the digital economy.

I am glad to let you know that this maiden edition of the Journal presents current research and practical perspectives on the evolving state of Office Technology and Information Management, featuring key developments such as the integration of artificial intelligence (AI) into administrative workflows, advancements in digital document managements, strategies for enhancing data security in organizational settings, which are evidence-based insights that can inform both academic inquiry and professional practice. Several studies examine the impact of emerging technologies on operational efficiency, while others explore competencies required for effective information management in increasingly digital work environments.

WELCOME to this Maiden Edition!

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From the National President

It is with great professional pride and scholarly delight that I, on behalf of the National Executive Council, the Board of Trustees, and members of the Nigerian Institute of Office Technology and Information Management, present the maiden edition of the Global Journal of Innovative Research in Office Technology and Information Management (GJIROTIM). This publication marks a significant epoch in the aspiration of the founding fathers of the Institute and affirms our collective passion for the advancement of research, theory, and praxis embedded in the discipline of Office Technology and Information Management.

The intentional establishment of this Journal is predicated on the recognition that the domains of Office Technology and Information Management are rapidly undergoing profound transformation. Globalization, digitalization and the increasing reliance on data-driven decision making have redefined the competencies required of office professionals and the pedagogies employed or deployed in their training. Our collective responsibility extends beyond instruction to the systematic generation and dissemination of knowledge that is both theoretically sound and contextually relevant.

This inaugural volume brings together empirical and conceptual contributions from erudite scholars drawn from the Polytechnics, Universities, and other related institutions. The articles herein provide critical interrogations of contemporary issues spanning every aspect of office professionals in organizations. Office Technology and Information Management - including, but not limited to, automation, digital tools, workplace innovation, organizational behaviour, administrative processes, records management, leadership, data governance, information systems, knowledge management, and information ethics.

The rigorous peer-review process painstakingly undertaken by our Editorial Board ensures that the scholarship presented meets global acceptable standards of academic integrity, methodological rigour, and professional relevance. It is our expectation that the discourse initiated in this journal will stimulate further research, enhance curriculum development, and influence policy formulation and hopefully, implementation within the public and private sectors.

I extend my profound gratitude to the authors for their intellectual contributions, to the reviewers for their diligence, and, to the members of the Editorial Board, under the dynamic leadership of our Editor-in-Chief, for their dedication to scholarly excellence. To the readers, I enjoin you to engage critically with the ideas presented, as we collectively strive to position Office Technology and Information Management as a discipline of strategic importance to national development.

May this maiden edition serve as the foundation for a sustained tradition of academic publishing that will enhance the visibility of Nigerian Institute of Office Technology and Information Management and contribute meaningfully to the body of knowledge in our field.

Akewusola Lanre, Ph.D.,
National President,
Nigerian Institute of Office Technology and Information Management.

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EDITORIAL POLICY

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MANUSCRIPT PREPARATION TEMPLATE FOR PUBLICATION

Authors are requested to copy and paste the corrected and approved version of their manuscript into this template before final re-submission for publication. Manuscripts should already reflect all reviewers' and editors' corrections prior to submission of the final camera-ready copy.

Papers may be empirical, conceptual, theoretical, review-based, or opinion-based. Manuscripts must be written in English and should not exceed 15 pages, including references, tables, and appendices.

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Abstract

[Heading: Times New Roman, 12-point, Bold, Centred]
The abstract should not exceed 200 words and should briefly state the purpose of the paper, methodology/approach where applicable, key findings or arguments, and conclusion/implications.
Keywords: Provide 3–5 keywords immediately after the abstract. - *[10-point font size]*

1.0 Introduction

Provide background information, context of the study/discussion, objectives, significance, and relevant issues relating to the topic. The subheadings may include: problem statement, objectives of the study and research questions.

2.0 Literature Review

This section should contain relevant concepts, theories, empirical studies, scholarly arguments, or policy discussions related to the topic.

- Empirical papers should include conceptual, theoretical, and empirical review where applicable.
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3.0 Methodology: For Empirical Studies, this should include the research design, population/sample, instrument(s) for data collection, validity and reliability, and method of data analysis.

For conceptual, review, or opinion-based papers, explain the approach adopted, such as: documentary analysis, literature review, comparative analysis, policy analysis, and critical/theoretical discussion.

4.0 Results

For Empirical Studies, present findings using appropriate tables, figures, or charts where necessary.

For conceptual or opinion papers present thematic discussions, arguments, critical analyses, policy implications, or scholarly interpretations relevant to the topic.

Discussion

Discuss the significance, implications, and contribution of the findings or arguments presented in the paper. Relate discussions to existing literature, theory, policy, or practice.

5.0 Conclusion

Summarise the major findings, arguments, or implications of the paper. State the contribution of the work to knowledge, practice, or policy, and suggest areas for further studies where necessary.

Recommendations *(where applicable)*

Provide relevant recommendations arising from the findings or discussions.

References

All references must conform strictly to APA Style (latest edition). Authors should ensure that all in-text citations appear in the reference list and vice versa.

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Important Notice to Authors

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- Ensure grammatical accuracy and proper formatting before final submission.
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WORKPLACE DIGITALIZATION AND ELECTRONIC RECORDS KEEPING SKILLS REQUIRED OF OFFICE TECHNOLOGY AND MANAGEMENT GRADUATES IN ABIA STATE

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Abstract

This study investigated workplace digitalization and electronic records keeping skills required of Office Technology and Management (OTM) graduates in Abia State. A descriptive survey research design, the population of the study comprised 1,200 OT50M graduates from Polytechnics in Abia State. A sample size of 300 respondents was selected using stratified random sampling technique from graduates in public and private organizations. Data were collected using a self-structured questionnaire. The reliability of the instrument was determined using the Cronbach's alpha method, with a reliability coefficient of 0.87, indicating a high level of internal consistency. Data collected were analyzed using mean, standard deviation, and independent samples t-test at a 0.05 level of significance. Findings revealed a high extent of workplace digitalization in organizations in Abia State; organizations significantly require electronic record keeping skills such as proficiency in Microsoft Office applications, electronic filing systems, cloud storage technologies, database management, and data security competencies; and, OTM graduates possess a significant level of electronic records keeping skills, although deficiencies still exist in advanced digital competencies. The study concluded that there is a need to strengthen the OTM curriculum through increased practical exposure to modern office technologies and digital records management systems. The study recommended that tertiary institutions, policymakers, and employers should collaborate in providing continuous digital skills training to enhance graduates' preparedness for contemporary digital workplaces.

Keywords: Workplace digitalization, electronic record keeping, Office Technology and Management, job performance, Abia State.

1.00 Introduction

Workplace digitalization has become a defining feature of modern organizations as a result of rapid advancements in Information and Communication Technologies (ICT). Digitalization refers to the adoption of digital tools and technologies in organizational processes, including the use of computers, software applications, internet-based platforms, and electronic systems to perform office functions that were previously handled manually. This transformation has significantly improved efficiency, accuracy, accessibility of information, remote collaboration, and real-time data sharing within organizations (Adebayo & Ahmed, 2020; Kumar & Singh, 2021). As workplaces continue to embrace digital technologies, employers increasingly expect office personnel to possess strong digital competencies that enable them to function effectively in contemporary work environments.

A major component of workplace digitalization is electronic records keeping, which involves the systematic creation, storage, organization, retrieval, and protection of records in digital formats. Electronic records keeping encompasses the use of digital tools such as word processors, spreadsheets, database management systems, electronic filing systems, and cloud-based storage platforms for managing organizational information (Ojo & Nwachukwu, 2022). Effective electronic records management enhances accuracy, accessibility, security, confidentiality, and timeliness of information, thereby supporting efficient decision-making and overall organizational productivity (International Records Management Trust [IRMT], 2019). Consequently, organizations increasingly require employees who can competently manage electronic records and information resources.

In Nigeria, the adoption of digital technologies across public and private organizations has continued to expand. Government ministries, educational institutions, financial organizations, and business enterprises now rely heavily on electronic systems for records management, communication, and administrative operations. This transition has heightened the demand for graduates equipped with relevant digital and electronic records keeping skills necessary for effective workplace performance (Okeke & Eze, 2021). In Abia State, many organizations are gradually migrating from traditional

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paper-based record systems to digital platforms, thereby redefining the competencies required of office personnel.

Office Technology and Management (OTM) programmes are designed to prepare students for careers in office administration and information management. Traditionally, emphasis was placed on competencies such as typewriting, shorthand, manual filing, and general office procedures. However, the digital transformation of workplaces now requires OTM graduates to possess competencies in electronic document management, database administration, cloud storage technologies, data security, and modern office software applications (Uzoagulu & Nwankwo, 2022). Specifically, proficiency in Microsoft Office applications such as Word, Excel, and PowerPoint, knowledge of electronic filing systems and databases, competence in cloud-based collaboration platforms such as Google Drive and OneDrive, and the ability to ensure data security and confidentiality have become essential requirements in modern workplaces.

Effective job performance in digitalized workplaces depends largely on employees' ability to organize, store, retrieve, protect, and disseminate electronic records efficiently. Research has demonstrated that employees who possess strong ICT and electronic records management competencies tend to exhibit higher levels of productivity, reduced errors, improved communication, and better decision-making capabilities (Adeyemi & Okeke, 2021; Onyema et al., 2022; Chukwu & Eze, 2023). Furthermore, studies have shown that workplace digitalization contributes significantly to organizational performance when employees possess the necessary digital skills to utilize available technologies effectively (Kumar & Singh, 2021; Chukwu & Eze, 2023).

Despite the growing importance of electronic records keeping skills in contemporary workplaces, evidence suggests that many OTM graduates lack adequate proficiency in critical digital competencies, resulting in a mismatch between workplace expectations and graduates' capabilities (Onyemachi & Udoh, 2020). Employers frequently report challenges associated with graduates' inability to organize electronic files effectively, retrieve digital records promptly, utilize cloud-based technologies efficiently, and maintain information security and confidentiality. Although several studies have examined ICT competencies and workplace performance (Nwankwo, 2020; Kumar & Singh, 2021), there remains limited empirical evidence on the specific electronic records keeping skills required of Office Technology and Management graduates in Nigeria, particularly in Abia State. This gap in knowledge necessitates further investigation. Therefore, this study seeks to examine workplace digitalization and the electronic records keeping skills required of Office Technology and Management graduates in Abia State with a view to identifying the competencies demanded by employers and providing information that can enhance curriculum development and graduate employability in the digital workplace.

Statement of the Problem

The rapid digitalization of workplaces has significantly transformed office operations, particularly in the area of records keeping. Organizations now rely heavily on electronic systems for creating, storing, retrieving, and managing records to enhance efficiency, accuracy, and security. As a result, employers increasingly demand graduates who possess adequate electronic records keeping skills to function effectively in modern office environments. Despite this growing demand, there are concerns that many Office Technology and Management (OTM) graduates in Nigeria, including those in Abia State, lack the required competencies in electronic records keeping. Reports from employers suggest that some graduates experience difficulties in managing electronic files, operating digital records management systems, ensuring data security, and adapting to technologically advanced office environments. This inadequacy often leads to reduced productivity and limits graduates' employability.

Furthermore, OTM programmes in some tertiary institutions may not have fully aligned their curricula with the realities of workplace digitalization. This mismatch between training and workplace expectations creates a skills gap that undermines the effectiveness of OTM graduates. Consequently, there is a need to investigate the extent of workplace digitalization in Abia State and identify the specific electronic records keeping skills required of OTM graduates to meet contemporary workplace demands. Addressing this problem will provide valuable insights for curriculum improvement and graduates' skill development.

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Specific Objectives

1. To determine the extent of workplace digitalization in organizations in Abia State.
2. To identify the electronic records keeping skills required of OTM graduates in Abia State.
3. To assess the level of electronic records keeping skills possessed by OTM graduates in Abia State.

Research Questions

1. What is the extent of workplace digitalization in organizations in Abia State?
2. What electronic records keeping skills are required of Office Technology and Management graduates in Abia State?
3. What is the level of electronic records keeping skills possessed by OTM graduates in Abia State?

2.00 Methodology

This study adopted descriptive survey research design, which was considered appropriate for examining workplace digitalization and the electronic records keeping skills required of Office Technology and Management (OTM) graduates in Abia State. The design enabled the researcher obtain relevant information from respondents and describe existing conditions as they relate to electronic records keeping skills in the workplace.

The population of the study comprised all graduates of Office Technology and Management (OTM) programmes from accredited Polytechnics in Abia State, namely Abia State Polytechnic, Temple Gate Polytechnic, and Akanu Ibiam Federal Polytechnic who are indigenes or residents of Abia State. Records obtained from the alumni offices, departmental graduation lists, and students' affairs units of the institutions showed an estimated total population of 1,200 OTM graduates between 2018 and 2024.

From the population, a sample size of 100 was randomly selected from each strata, making a total of 300 graduates selected using the stratified random sampling technique to ensure adequate representation from each Polytechnic. The stratification was based on the institutions attended by the graduates. Since the graduates were no longer on campus and are geographically dispersed across different states and countries, the researcher reached them through alumni associations, departmental WhatsApp groups, Telegram platforms, LinkedIn, Facebook groups, and email contacts obtained from the departments and class representatives. In addition, online questionnaires created through Google Forms were distributed electronically to facilitate easy access and participation irrespective of location. This approach enabled the researcher to gather data effectively from respondents scattered across different parts of the world. This ensured adequate representation of graduates from the various polytechnics in the state, while random selection within each stratum minimized sampling bias and enhanced the generalizability of the findings.

Data were collected using a self-structured questionnaire, structured on a five-point Likert scale, ranging from Strongly Disagree (1) to Strongly Agree (5). The validity of the instrument was ensured through expert review by specialists in Office Technology and Management and Educational Management. The reliability of the instrument was determined using the Cronbach's alpha method, which yielded a reliability coefficient of 0.87, indicating a high level of internal consistency. Data collected from the respondents were analyzed using both descriptive and inferential statistics. Descriptive statistics, including mean and standard deviation, were used to analyze the level of electronic records keeping skills among Office Technology and Management graduates. To test the hypothesis formulated, the independent samples t-test was employed at a 0.05 level of significance. The results of the data analysis were presented in tables to enhance clarity and facilitate easy interpretation.

3.00 Results

Research Question 1: What is the extent of workplace digitalization in organizations in Abia State?
Descriptive statistics (mean and standard deviation) were used to determine the extent of workplace digitalization.

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Table 4.1: Extent of Workplace Digitalization

Item	N	Mean	Std. Deviation	Interpretation
Availability of computers in the workplace	300	4.20	0.62	High
Use of electronic filing systems	300	4.10	0.58	High
Use of internet-based communication platforms	300	4.15	0.60	High
Adoption of digital record management systems	300	4.05	0.63	High
Use of cloud storage for office documents	300	4.00	0.65	High
Grand Mean = 4.10, Interpretation: High				

The results indicate that organizations in Abia State have largely embraced digital technologies in their operations. This aligns with global trends in workplace digitalization, highlighting the importance of equipping graduates with relevant digital skills.

Research Question 2: What electronic records keeping skills are required of OTM graduates in Abia State?

Table 4.2: Required Electronic Record Keeping Skills

Skill	N	Mean	Std. Deviation	Interpretation
Document scanning and storage	300	4.25	0.55	High
Electronic filing and retrieval	300	4.30	0.52	High
Database management	300	4.15	0.60	High
Use of cloud storage platforms	300	4.20	0.57	High
Ensuring data security/confidentiality	300	4.28	0.54	High
Grand Mean = 4.24, Interpretation: High				

The findings indicate that employers in Abia State highly value electronic records keeping skills among OTM graduates. Skills such as electronic filing, database management, and data security were considered most important, confirming the need for curriculum and training programs to address these areas.

Research Question 3: What is the level of electronic records keeping skills possessed by OTM graduates in Abia State?

Table 4.3: Level of Electronic Record Keeping Skills Possessed by Graduates

Skill	N	Mean	Std. Deviation	Interpretation
Document scanning and storage	300	3.80	0.70	Moderate
Electronic filing and retrieval	300	3.75	0.68	Moderate
Database management	300	3.55	0.72	Moderate
Use of cloud storage platforms	300	3.60	0.69	Moderate
Ensuring data security/confidentiality	300	3.50	0.71	Moderate
Grand Mean = 3.64, Interpretation: Moderate				

Discussion

The results indicate that OTM graduates possess moderate electronic records keeping skills. While graduates demonstrate competence in basic tasks like scanning and filing, their proficiency in database management and data security is less developed. This suggests a need for enhanced training and practical exposure in these areas.

The study revealed that workplace digitalization in organizations in Abia State is high. Most organizations have adopted digital tools such as computers, electronic filing systems, cloud storage, and internet-based communication platforms. This finding is consistent with the assertion of Uzoka and Okoli (2024), who noted that digital transformation in Nigerian workplaces is rapidly increasing, with a

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shift from manual to electronic processes for efficiency and record accuracy. Similarly, Uzoamaka and Okpuzor (2025) reported that digital tools are now essential in office management, particularly for tasks related to communication, document handling, and operational coordination.

The high level of workplace digitalization underscores the necessity for graduates to be proficient in digital skills. As organizations increasingly rely on technology for efficiency and competitiveness, the demand for digitally competent employees has become critical. This finding aligns with global trends emphasizing that digital literacy is no longer optional but a fundamental requirement for effective organizational functioning (John & Patience, 2023).

Furthermore, the study found that electronic records keeping skills are highly required of Office Technology and Management graduates by employers in Abia State. Skills such as electronic filing, documents scanning, database management, cloud storage usage, and data security were all rated as important. This finding agrees with John and Patience (2023), who observed that modern offices increasingly require employees to manage electronic records efficiently to ensure accuracy, accessibility, and confidentiality. Also, Business Educators Perception Study (2023) highlighted that graduates must possess competencies in backup procedures, proper classification of records, and secure storage to meet workplace demands. The alignment between these skills and workplace expectations confirms that digital records management is now a core employability requirement. The findings also echo Akudolu and Onyeneke (2024), who emphasized that electronic record keeping is central to organizational performance and decision-making in contemporary offices.

The study showed that OTM graduates possess a significant level of electronic records keeping skills, although some advanced competencies remain underdeveloped. Graduates performed well in basic tasks such as scanning and filing but demonstrated moderate proficiency in database management and data security. This outcome is consistent with Uzoka and Okoli (2024), who reported that Nigerian graduates often have foundational digital skills but lack advanced technical skills required in modern workplaces.

Overall, the discussion indicates a strong relationship between workplace digitalization and the need for electronic record keeping skills. As organizations adopt more digital systems, OTM graduates are increasingly expected to demonstrate proficiency in managing electronic records, highlighting the importance of aligning educational programs with workplace demands (Uzoka & Okoli, 2024; John & Patience, 2023).

4.00 Conclusion

This study investigated workplace digitalization and electronic records keeping skills required of Office Technology and Management (OTM) graduates in Abia State. The extent of workplace digitalization in organizations, electronic records keeping skills required of OTM graduates and level of electronic records keeping skills possessed by OTM graduates in Abia State were investigated. The study revealed that graduates possess a statistically significant level of electronic records keeping skills, although gaps remain in advanced digital competencies. The study concluded that workplace digitalization in organizations in Abia State is significantly advanced, creating a high demand for electronic records keeping skills among employees. Office Technology and Management graduates are expected to possess competencies in electronic filing, database management, cloud storage, and data security to meet these organizational needs.
Therefore, continuous curriculum enhancement and practical training are necessary to fully equip graduates for the demands of modern, digitalized workplaces.

Recommendations

1. Polytechnics in Abia State should review and update the Office Technology and Management curriculum to include more advanced electronic records keeping skills, such as database management, data security, and cloud computing, to ensure graduates meet the evolving demands of digitalized workplaces.

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2. Institutions should organize regular hands-on training, workshops, and internships that expose students to real-world digital office environments, enabling them to apply theoretical knowledge in practical settings and bridge skill gaps.
3. Graduates and employees should be encouraged to engage in continuous professional development programs, including certification courses in digital record management and information technology, to maintain and enhance their electronic record keeping competencies throughout their careers.

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IMPACT OF DIGITAL SKILLS ON ENTREPRENEURIAL INTENTION AMONG NIGERIAN YOUTHS IN KWARA STATE, NIGERIA

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Abstract

This study examined the impact of digital skills on entrepreneurial intention among youths in Offa, Kwara State, Nigeria. A descriptive survey design was deployed with a target population and census sample size of 220 respondents, comprising of 30 staff from the Entrepreneurship Development Centre, Federal Polytechnic, Offa and 190 Offa Business Owners. Data was collected using 30-item structured questionnaire, validated by Office Technology and Management experts. The reliability of the instrument was ensured using Cronbach's alpha, with a reliability coefficient of 0.89. Descriptive statistics (mean and standard deviation) were used to answer the research questions, while independent t-test at a 0.05 level of significance was utilized to test the hypotheses. Findings revealed that a strong relationship exists between digital skills and entrepreneurial intention (Grand Mean = 3.45, SD = 0.82), with social media proficiency and online store setup serving as prominent indicators. Digital competencies reliably predict intentions (Grand Mean = 3.39, SD = 0.76), and leveraging these skills drives economic diversifications (Grand Mean = 3.50, SD = 0.44). Inferential tests rejected all null hypotheses ($p<0.05$), providing significant variations in perception based on gender and institutional affiliation. The study concludes that specialized digital efficacy can accelerates venture creation mindsets and the study recommend among othes that youths should proactively leverage open-source certifications to upgrade their digital literacy beyond basic social media browsing.

Keywords: *Digital Skills, Entrepreneurial Intention, Digital entrepreneurship,* Youth entrepreneurship, Economic Development

1.0 Introduction

Before the advent of digital technology, business operations in Nigeria relied entirely on physical ledgers, manual record-keeping, cash-based transactions, and brick-and-mortar storefronts, but as modern technological advancement rapidly changes the workplace, it has become necessary to establish clear guidelines on digital tools so employees can carry out their functions effectively. Today the advent and adoption of digital technologies for business operations have presented young Nigerian entrepreneurs with new markets, customers, and resources to realize the impact of technology-led economic growth (Oyeyemi, et al., 2024). Eze et al., (2024) argue that in Nigeria, the youth population is growing rapidly, and entrepreneurship has been identified as a key driver of economic growth and job creation. Zaleha et al. (2025) assert that digital skills have become an essential component of entrepreneurship, and entrepreneurs with digital skills are more likely to succeed in today's digital economy. Digital skills encompass a range of abilities, including proficiency in digital tools, platforms, and technologies. These skills are expected to enable entrepreneurs to develop self-efficacy that drives innovative products and services. However, despite the growing importance of digital skills in entrepreneurship it has been observed that there may be limited impact of digital skills on entrepreneurial intention among Nigerian youths due to various factors such as, individual characteristics, environmental factors, and institutional factors.

Cristina (2025) defined digital skills as the abilities and knowledge required to effectively use digital technologies, tools, and platforms to achieve personal, academic, or professional goals. In today's digital age, having digital skills is essential for individuals to fully participate in the economy, society, and online communities. It allows individuals to access new opportunities, stay competitive in the job market, and adapt to the ever-evolving digital landscape. Sarwo (2022) asserted that digital skills also

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facilitate entrepreneurship, innovation, and creativity, enabling individuals to develop and market digital products and services, and reach new markets and customers. Digital skills relevant to entrepreneurship include proficiency in digital marketing, data analysis, and online platform management.

Some scholars argue that entrepreneurs might require skills in social media marketing, search engine optimization, and content creation to engage with their target audience. They may also need capabilities in e-commerce platform management, digital payment systems, and online security measures to facilitate transactions. Additionally, proficiency in digital tools for project management and collaboration is hypothesized to improve efficiency, though this remains an open question within localized markets (Sarah, 2025).

Entrepreneurial intention can be understood as a conscious mental roadmap where an individual actively commits to transitioning a business concept into a functioning reality. It acts as a cognitive bridge linking personal career desires to actual field execution. This conceptual perspective aligns with the academic baseline that frames entrepreneurial intention as a self-acknowledged belief by a person that they have the goal to create a new venture and plan to do so in the future through distinct goal and implementation frameworks (Thompson, 2009). It is a mindset or plan to start a new business or venture. It involves a conscious decision to pursue entrepreneurial activities, driven by factors such as innovation, risk-taking, and opportunity recognition. Entrepreneurial intention is a crucial precursor to entrepreneurial behavior, influencing an individual's actions and decisions to launch and grow a business. Models of entrepreneurial intention, such as the Theory of Planned Behavior (TPB), suggest that an individual's intention to start a business is influenced by their attitude towards entrepreneurship, subjective norms, and perceived behavioral control. Models of entrepreneurial intention, such as the Theory of Planned Behavior (TPB) originally proposed by Icek Ajzen (1991), suggest that an individual's intention to start a business is shaped by their personal attitude towards entrepreneurship, subjective norms, and perceived behavioral control.

Digital skills is expected to play a significant role in shaping these factors, particularly perceived behavioral control, by enhancing an individual's confidence and ability to navigate the digital landscape. By acquiring digital skills, such individuals can increase their entrepreneurial self-efficacy, which in turn can strengthen their intention to start a business. This highlights the importance of digital skills in fostering entrepreneurial intention and behavior. Digital entrepreneurship refers to the creation and management of digital businesses or ventures that leverage digital technologies, platforms, and tools to develop innovative products, services, or business models. It involves using digital channels to reach customers, deliver value, and generate revenue, often with scalability and global reach. However, challenges persist, such as limited infrastructure and connectivity, an unfavorable regulatory environment, limited access to financing and funding, and digital skills gap among the population.

Despite these challenges, digital entrepreneurship seems to have transformed the Nigerian business landscape, enabling small and medium-sized enterprises to thrive and innovate. It has also created new opportunities for entrepreneurs to develop innovative products and services. Youth entrepreneurship is crucial for Nigeria's economic development, driving
growth, innovation, and job creation. However, according to Georges and Jessica (2020) young entrepreneurs face challenges like limited access to funding, inadequate infrastructure, and lack of business skills. The Nigerian government has implemented initiatives to support youth entrepreneurship, including training, funding, and mentorship programs.

The foregoing initiative at equipping young entrepreneurs with the skills and knowledge needed to succeed in business. Promoting youth entrepreneurship, Nigeria can tap into the creativity, innovation, and energy of its young people, driving economic growth and development. With the right support and resources, youth entrepreneurship may unlock the potential of Nigeria's young population, contributing to the country's economic prosperity. As Nigeria navigates its economic challenges, youth entrepreneurship is expected to play a significant role in shaping its future. Fostering a supportive ecosystem, young entrepreneurs can thrive, creating jobs, stimulating innovation, and driving economic growth. This can help Nigeria unlock its full potential and achieve sustainable economic development.

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Empirically, Mensah et al (2024) in a study on digital skills and entrepreneurial intention demonstrated that digital skills positively impact entrepreneurial intention, self-efficacy, and behavior. Individuals with strong digital skills are more likely to develop entrepreneurial intentions, as they can leverage technology to identify opportunities, access new markets, and develop innovative products and services. Digital skills also enhance entrepreneurial self-efficacy, enabling individuals to confidently navigate the digital business landscape and overcome challenges

Digital skills can also influence subjective norms, where individuals with digital skills may perceive entrepreneurship as a normative behavior if their peers or mentors with similar skills are entrepreneurs. Furthermore, having digital skills may likely enhance an individual's perceived behavioral control, giving them confidence in their ability to navigate the digital business landscape and leverage technology to drive business growth. This confidence boost may in turn, increase their intention to pursue entrepreneurial ventures, ultimately shaping their entrepreneurial behavior. It is therefore expected that the knowledge of these dynamics may enable educators and policymakers to design targeted interventions that could foster technical sub-skills and promote entrepreneurship among Nigerian youths.

Statement of the Problem

Despite efforts to promote entrepreneurship, many young Nigerians face significant challenges in identifying entrepreneurial opportunities, starting and sustaining businesses operations due to observed limited possession of digital skills, which are essential for navigating today's digital economy. This deficiency also restricts their ability to compete effectively in the global marketplace, thereby limiting their potential for entrepreneurial success. Since Nigeria economy increasingly rely on digital technologies, the need for a digital literate workforce cannot be overemphasized. Without sufficient digital skills, young entrepreneurs may struggle to adapt to the evolving business landscape, further exacerbating unemployment and stifling economic growth. It is on this premises this study aims to examine the impact of digital skills on entrepreneurial intention among Nigerian youths

Purpose of the Study

The major purpose of this study is to examine the impact of digital skills on entrepreneurial intention among youths in Offa, Kwara State. Other specific purposes are to:

1. Examine the relationship between digital literacy skills and youth entrepreneurial intention.
2. Determine the extent to which digital platform and technical skills predict youth entrepreneurial intention.
3. Evaluate how diversified digital capabilities can be leveraged to enhance youth entrepreneurial intention and drive economic growth

Research Hypotheses

The following null hypotheses were formulated for the study.

1. There is no significant relationship between digital literacy skills and youth entrepreneurial intention among male and female youth.
2. There is no significant difference between male and female youth regarding the extent to which digital platform and technical skills predict their entrepreneurial intention.
3. There is no significant difference between the mean ratings of Entrepreneurship Development Centre (EDC) staff and Offa Business Owners (OBO) on how diversified digital capabilities can be leveraged to enhance youth entrepreneurial intention and drive economic growth.

2.0 Methodology

The study adopted descriptive survey design. The study was a survey of staff of Entrepreneurship Development Centre (EDC), Federal Polytechnic, Offa, and Offa Business Owners (OBO) in Offa, Kwara State, Nigeria. The population of the study comprises of 30 staff of the Entrepreneurship Development Centre, Federal Polytechnic, Offa and 190 Offa Business Owners. A total of 220 respondents were used for the study. The researchers believe that these respondents are in a better position to provide information on the impact of digital skills on entrepreneurial intention among Nigerian youths. A structured questionnaire tagged Impact of Digital Skills on Entrepreneurship Intension among Nigerian Youth (IDEIANY) was designed by the researchers, and this questionnaire were validated by three experts with a Cronbach Alpha reliability coefficient of 0.89 which was used to test the reliability of the instrument. The IDEIANY consists of 30 items raised after an extensive

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review of the literature. The items were structured on four point rating scale of Strongly Agreed (SA) = 4, Agreed (A) = 3, Disagree (D) = 2, and Strongly Disagree = 1. A total of 220 copies of the questionnaire were distributed by the researchers and with the help of four research assistants who were trained for the job. The data collected to were analyzed using mean and standard deviation. The hypotheses were tested using an independent t-test at a 0.05 level of significance. The hypothesis was not rejected when the observed p-value was equal to or greater than the fixed p-value of 0.05.

3.00 Results

Table 1: Relationship between digital literacy skills and youth entrepreneurial intention.

S/N	Items Statement	X	SD	Remark
1	Digital skills allow entrepreneurs to create and manage online stores, facilitating e-commerce and increasing sales opportunities	3.56	0.81	SA
2.	Digital skills allow entrepreneurs to conduct online research and analyze market trends, informing business decisions.	2.98	0.91	A
3	Entrepreneurs with digital skills can build and maintain professional online networks, facilitating collaboration and access to resources.	3.71	0.87	SA
4	Digital skills training and education can enhance entrepreneurial intention and confidence, empowering individuals to start and grow successful digital businesses.	3.62	0.85	SA
5	Digital skills enable entrepreneurs to manage financial transactions, track expenses, and make informed financial decisions.	3.75	0.82	SA
6	Entrepreneurs with digital skills can leverage digital marketing strategies to reach a wider customer base and increase their online presence.	3.02	0.86	A
7	Digital skills enable entrepreneurs to navigate digital challenges and adapt to changing market conditions.	3.34	0.62	SA
8	Entrepreneurs with digital skills can effectively communicate with customers and provide online support, enhancing customer satisfaction.	3.72	0.74	SA
9	Digital skills enable entrepreneurs to access and utilize online resources, tools, and platforms to generate innovative business ideas.	3.59	0.84	SA
10	Digital skills allow entrepreneurs to conduct online research and analyze market trends, informing business decisions.	3.16	0.83	A
Average Mean		3.45	0.82	SA

Source: Field survey, 2026

Data in table 1 shows that the various respondents strongly agreed with a mean of 3.45 and a standard deviation of 0.82 that there is relationship between digital skills and entrepreneurial intention.

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Table 2: Extent to which digital platform and technical skills predict youth entrepreneurial intention.

S/N	Item Statement	X	SD	Remark
1	Knowledge of online marketplaces, payment systems, and digital payment processing can predict entrepreneurial intention	3.56	0.81	SA
2	Proficiency in digital tools and platforms can increase entrepreneurial intention by enabling individuals to navigate the digital economy.	3.40	0.71	SA
3	Effective use of social media for business purposes can predict entrepreneurial intention.	3.71	0.87	SA
4	Skills in managing online businesses, such as e-commerce and digital marketing, can predict entrepreneurial intention.	3.34	0.62	SA
5	Ability to solve digital problems and adapt to new technologies can indicate entrepreneurial intention.	3.02	0.77	A
6	Skills in developing digital products, such as software and apps, can indicate entrepreneurial intention.	3.78	0.67	SA
7	Proficiency in digital communication tools, such as email and online collaboration platforms, can facilitate entrepreneurial endeavors.	3.50	0.83	SA
8	Ability to build and maintain professional online networks can predict entrepreneurial intention.	3.12	0.79	A
9	Ability to collect, analyze, and interpret digital data can inform business decisions and predict entrepreneurial intention.	3.33	0.76	SA
10	Skills in digital content creation, such as graphic design and video production, can foster entrepreneurial intention.	3.16	0.81	A
Average Mean		3.39	0.76	SA

Source: Field survey, 2026

Data in table 2 shows that the various respondents Strongly Agreed with a mean of 3.39 and a standard deviation of 0.76 that digital skills is capable of predicting entrepreneurial intention.

Table 3: How digital financial literacy can be leveraged to enhance entrepreneurial intention and drive economic growth

S/N	Item statement	X	SD	Remark
1	Creating and managing online stores to reach new customers.	3.53	0.81	SA
2	Designing, developing, and launching digital products and services.	3.34	0.62	SA
3	Using online payment systems to facilitate transactions.	3.70	0.87	SA
4	Building professional networks to access valuable connections and resources.	3.27	0.73	A
5	Accessing online courses and training to develop new skills.	3.41	0.63	SA
6	Conducting online research to identify new business opportunities and trends.	3.09	0.80	A
7	Using online platforms to promote products and services.	3.62	0.76	SA
8	Leveraging social media to engage with customers and promote products.	3.56	0.78	SA
9	Creating digital content, such as videos, blogs, and podcasts, to attract and engage audiences.	3.75	0.65	SA
10	Collecting, analyzing, and interpreting data to inform business decisions.	3.69	0.79	SA
Average Mean		**3.50**	**0.44**	**SA**

Source: Field survey, 2026

Data in table 3 shows that the various respondents Strongly Agreed with a mean of 3.50 and a standard deviation of 0.44 stated that digital skills should be leverage to enhance entrepreneurial intention and drive economic growth.

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Hypothesis 1: There is no significant relationship between digital literacy skills and youth entrepreneurial intention among male and female youth.

Table 4: T-test Analysis of significant difference in the mean ratings of Male and Females on the relationship between digital skills and entrepreneurial intention

Respondents	N	Mean	SD	DF	T.cal.	T.crit.	Decision
Male	153	1.52	0.44				
				218	2.674	2.387	Not Sig.
Female	67	1.98	0.57				

The data in table 4 reveals that the calculated t-value of (2.674) is greater than the critical t-value of 2.387 at 218 degree of freedom and 0.05 level of significance. It implies that we retain the null hypotheses which stated that there is no significant difference between the mean rating of male and female on the relationship between digital skills and entrepreneurial intention.

Hypothesis 2: There is no significant difference between male and female youth regarding the extent to which digital platform and technical skills predict their entrepreneurial intention.

Table 5: T-test Analysis of significant difference in the mean ratings of Male and Females on digital skills can prediction on entrepreneurial intention

Respondents	N	Mean	SD	DF	T.cal.	T.crit.	Decision
Male	153	1.22	0.80				
				218	2.30	1.190	Not Sig.
Female	67	2.17	0.78				

The data in table 5 reveals that the calculated t-value of (2.30) is greater than the critical t-value of 1.190 at 218 degree of freedom and 0.05 level of significance. It implies that we retain the null hypothesis which stated that there is no significant difference between the mean rating of male and female on digital skills can prediction on entrepreneurial intention.

Test of Hypotheses

Hypothesis 3: There is no significant difference between the mean ratings of Entrepreneurship Development Centre (EDC) staff and Offa Business Owners (OBO) on how diversified digital capabilities can be leveraged to enhance youth entrepreneurial intention and drive economic growth.

Table 6: T-test Analysis of significant difference in the mean ratings of Male and Females on extent of which digital skills can be leveraged to enhance Entrepreneurial intention and drive economic

Respondents	N	Mean	SD	DF	T.cal.	T.crit.	Decision
EDC Staff	30	1.31	0.80				
				218	2.63	0.85	Not Sig.
OBO	190	2.19	0.78				

The data in table 6 reveals that the calculated t-value of (2.63) is greater than the critical t-value of 0.85 at 218 degree of freedom and 0.05 level of significance. It implies that we retain the null hypothesis which stated that there is no significant difference between the mean rating of Entrepreneurship Development Centre (EDC) Staff and Offa Business Owners (OBO) on the extent of which digital skills can be leveraged to enhance entrepreneurial intention and drive economic.

Discussion of Findings

The results of this study clearly support the Theory of Planned Behavior, proving that having digital skills gives young people the confidence and mindset needed to start a business. Looking at Research Question One, there is a strong positive relationship between digital skills and entrepreneurial intention, with an average mean of 3.45. This is mostly driven by the ability to handle financial tracking (Mean = 3.75), which agrees with the findings of Sarwo et al. (2022). Statistically, because the calculated t-value is larger than the critical value (2.674 > 2.387), Null Hypothesis One is rejected. This logical

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rejection shows that male and female youths do not view these skills the same way, which supports the gender readiness gaps pointed out by Eze et al. (2024).

For Research Question Two, the data proves that digital proficiencies can reliably predict entrepreneurial intentions (Average Mean = 3.39), with digital product development (Mean = 3.78) being the strongest predictor. This matches what Oyeyemi et al. (2024) found about tech skills being vital for startup success. By rejecting Null Hypothesis Two (2.30 > 1.190), the study logically proves there is a significant gender difference in predictive readiness, which line up with the university student perspectives shared by Irene et al. (2024).

Lastly, Research Question Three shows that leveraging digital tools directly drives economic growth and diversification, scoring the highest average mean of 3.50. This is driven by digital content creation (Mean = 3.75), which verifies Salaudeen's (2025) view that e-commerce helps startups beat physical business barriers. Rejecting Null Hypothesis Three (2.63 > 0.85) makes complete sense because it shows that institutional EDC trainers and active field business operators see the practical use of these tools differently, just as Mensah et al. (2024) emphasized.

4.0 Conclusion

This study examined the impact of digital skills on entrepreneurial intention among youths in Offa, Kwara State, Nigeria. Findings revealed that a strong relationship exists between digital skills and entrepreneurial intention; with social media proficiency and online store setup serving as prominent indicators. Digital competencies reliably predict intentions and leveraging the skills drives economic diversifications. Based on the findings of this study, the crucial role of digital skills in promoting entrepreneurial intention among Nigerian youths has been empirically established. The study concludes that there is significant relationship between digital skills and entrepreneurial intention, with digital skills predicting entrepreneurial intention and driving economic growth. The study's implications are far-reaching, suggesting that policymakers, educators, and entrepreneurs should prioritize digital skills development in entrepreneurship education and training programs. By doing so, individuals can enhance their confidence and competence, identify business opportunities, and contribute to Nigeria's economic development. The importance of digital skills development cannot be overstated, and prioritizing it can have numerous benefits, including fostering a new generation of digitally savvy entrepreneurs and driving economic growth.

Recommendations

Based on research findings, the researchers recommend that:

1. Youth should proactively leverage open-source certifications to upgrade their digital literacy beyond basic social media browsing. They must master technical competencies including content creation, data analytics, and application development to directly enhance their capacity for successful entrepreneurial execution.
2. Educational institutions should incorporate entrepreneurship education that emphasizes digital skills development, providing students with practical knowledge and skills to start and manage online businesses.
3. Stakeholders should create supportive ecosystems that foster digital entrepreneurship, including online platforms, mentorship programs, and access to funding. This can help Nigerian youths leverage digital skills to drive innovation and economic growth.

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ETHICAL EMPLOYEE MONITORING IN DIGITAL WORKPLACES IN KWARA STATE, NIGERIA

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Abstract

This study examined ethical employee monitoring in digital workplaces in Kwara State, Nigeria. Two research questions and two purposes were used for the study. It's surveyed a target population and census sample size of 150 secretaries from Federal Polytechnic, Offa and Kwara State Polytechnic, Ilorin, using a descriptive survey design. Empirical findings of the study from table 1 revealed that transparent monitoring policies enhance trust and productivity to a High Extent (Grand Mean = 3.45), driven by clear tracking boundaries minimizing anxiety (Mean = 3.83), though staff consultation occurs only to a Low Extent (Mean=2.95). The overall perceived ethical risks of AI integration were rated to a High extent (Grand Mean = 2.98, SD=0, 72). Within these technological data, findings heighted a Very High Extent of concern over algorithmic hiring bias (Mean=3.75) and diluted managerial empathy (Mean=3.40). While automate job displacement remains a Low Extent worry (Mean=2.35). The study concludes that transparent monitoring builds workplace trust but unilateral implementation and unregulated automation compromise institutional trust matrices. The study recommend among others that Organizations must establish mandatory policy review committees at least 30% non-management staff to co-create, review and approve all employee monitoring policies before implementation. These committees should meet biannually to ensure policies remain transparent and participatory.

Keywords: Employees' Monitoring, Digital Workplace, Artificial Intelligence, Gig Economy, Ethical Guidelines

1.0 Introduction

As technology changes the workplace, it is necessary to have clear guidelines on what is considered appropriate behavior as well as providing the right and appropriate tools for employees in carrying out their functions. The speedy growth of ICT in Nigeria has helped the economy in many ways, but it has also introduced complex operational ethical difficulties (Katarzyna et al., 2023). As Nigeria continues to conduct business online, there is a need for monitoring guidelines that are easy to understand. These guidelines should contain rules about how to utilize and preserve digital tools. When these regulations are put into place, they will protect organizational resources and also determine the level of privacy employees should have. This will also influence trust and behavior that significantly impact the workplace (Felix et al., 2019). The escalating risk of unethical practices in modern Nigerian organizations underscores an urgent need for robust regulatory frameworks to support institutional growth.

It is important as a matter of urgency to find a balance between privacy and monitoring employees in digital workplaces. Management requires a baseline level of operational visibility to evaluate workforce efficiency during official hours. Employees are expected to assist in the design of strong cyberbullying policies that will make the workplaces less scary while encouraging cooperation and generating harmony (Felix et al., 2019). Businesses and the economy as a whole lose money and their reputations, suffer when more people act unethically. Workplace behavior is frequently influenced by individual values, the institutional ethical climate and the surrounding social environment. In situations like this, strong training programs are needed to improve moral behavior of employees. According to (Udaah et al., 2024; Iremeka, 2025), the growth of the gig economy in Nigeria has introduced sever concerns regarding informal arrangements and degraded labour standards within emerging urban digital centers.

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Businesses in Nigeria and around the world may face moral problems as a result of extensive usage of digital technologies like artificial intelligence. One of the advantages of using AI is that it can help individuals do their work better and come up with new ideas, but the disadvantage is that it can also make existing unfairness worse and take jobs away from some people whether now or in the future (Morris & Carter, 2020). Therefore, it is expected that Nigeria's ICT-driven economy will take precautions to ensure that technology is made and used in the ways that are positive for people and society (Abayome et al., 2024). To achieve this, Nigeria requires robust programs to teach people about ethics and how to utilize computers that are right for the country's economy and society in order to prepare its workers for these difficulties (Okafor, 2023). It should be noted that, as digital communication changes, so should the way people act at work. While critical Technology-driven ethical rules are insufficient on their own unless systematically linked to broader ideals such as equity, accountability and transparency. Researchers therefore advise that ethics must be linked to broader ideals such as equity, accountability and transparency (Smith et al., 2017)) today, digital tools give workers more power but they can also weaken traditional moral standards. This is why moral education and good work environments are so crucial (Williams, 2022).

Felix, Joy and Irene (2019) studied the monitoring of IT and internet usage of employees for sustainable economic development in Nigeria, looking at the legal and ethical issues. Organizational ethics and major ethical principles of respect for persons, beneficence, and justice representing the key ethical concerns for human subject protection in research were fully adopted as identified in The Belmont Report of 1979. exploring a narrative review, analysis, and synthesis of prior researches that focused on monitoring of employee IT and Internet usage. Peer-reviewed articles within the last five years from electronic databases, using some search keys such as "employee monitoring", "legal and ethical issues", "impact of employee monitoring on economic sustainability", etc. were extracted. The result of this study revealed that developing an acceptable monitoring policy will keep both employer and employee on the same page as to what is acceptable in the workplace along with what is not.

Statement of the Problem

The emerging digital growth of the Nigerian economy presents numerous benefits, despite the fact that it simultaneously engenders ethical dilemmas in contemporary workplaces. However the extensive utilization of Information and Communication Technology (ICT) over the years has blurred the distinction between personal and professional domains. This ambiguity fosters of unethical conduct within Nigerian firms has resulted in financial losses and reputational harm over time (Leonard, 2011).

Yagba & Ikoni, (2025) asserts that significant issue that requires consideration is the challenge of reconciling employee surveillance with privacy entitlements It is observed that numerous firms employ surveillance to safeguard their assets which is considered as very good. on the other hand, they frequently neglect to establish transparent and equitable regulations, resulting in distrust that undermines collaboration, productivity and the objectives that surveillance was intended to enhance (Felix et al., 2019). These issues have intensifies with the emergence of new trends. The expansion of the gig economy in major cities such as Lagos raises ethical concerns around equitable treatment of workers and appropriate employment classification (Udaah, et al., 2024). It should be noted that, employing Artificial Intelligence (AI) without meticulous ethical consideration may exacerbate the above-mentioned disparities.

The problems associated with this study is that there is lack of a robust and adaptable ethical framework for Nigeria's digital work environments. An inadequate framework that inadequately that is expected to reconcile surveillance with privacy has failed to safeguard gig workers resulting in the neglects to mitigate the risks associated with AI as well as undermine Nigeria's pursuit of steady growth in this new era of digital change.

Research Objectives

The major purpose of the study is to examine ethical employee monitoring in digital workplaces in Kwara state, Nigeria. Specific objectives are as follows:

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1. To examine the influence of transparent and collaboratively developed employee monitoring policies on perceived levels of trust and productivity among employees in Nigerian digital workplaces.
2. To examine the perceived ethical risks associated with the integration of Artificial Intelligence (AI) on equitable labour practices in Nigeria.

2.0 Methodology

This study employed a survey research design. The researchers believes that this approach is most suitable for the collection of data without any form of manipulation of variables. The study population comprised of 150 secretaries from Federal Polytechnic, Offa, and Kwara State Polytechnic, Ilorin. A census sampling method was adopted, as the entire population will be used for the study, given that it is manageable. Data collection was carried out using a structured questionnaire, which was distributed and retrieved within a one-week timeframe with the help of two research assistants. All the questionnaire that were distributed were returned. However, the instrument for the study was structured into two parts: Part A collected the bio-data of the respondents who were secretaries, at the same time, Part B contained two sections that address the various variables under investigation. A 4-point Likert rating scale was used for the study with the following values: Very High Extent (VHE) = 3.50-4.00, High Extent (HE) = 2.50-3.49, Low Extent (LE) = 1.50- 2.49.and Very Low Extent (VLE) = 1.00-1.49. For the purpose of interpretation, any mean score of 2.50 and above was regarded as High Extent, while any mean score of 2.49 and below was regarded as Low Extent. To ensure validity, the instrument was validated by three experts from Kwara State University and Federal Polytechnic, Offa. To ensure validity, the instrument was validated by three experts from Kwara State University, Malete. To establish the reliability of the instrument, a pilot study was conducted on 30 secretaries from a similar institution not included in the main study. The internal consistency was calculated using Cronbach alpha. Which yielded coefficients of 0.84 for the trust and productivity section and 0.79 for the AI ethical risks section, indicating acceptable reliability.

3.0 Results

Research Question 1: To what extent do transparent employee monitoring policies, developed collaboratively with staff, influence perceived levels of trust and productivity within Nigerian digital workplaces?

Table 1: Level of T transparent employee monitoring policies, developed collaboratively with staff within Nigerian digital workplaces

S/N	Item Statement	Mean	SD	Remark
1	I believe that my organization's employee monitoring policies are clearly communicated and transparent.	3.45	0.61	High Extent
2	The process of developing monitoring policies in my organization involves consultation and feedback from staff.	2.95	0.80	Low Extent
3	Knowing the specific data being collected about my work activities increases my trust in the employer.	3.20	0.73	High Extent
4	Transparent monitoring practices make me feel more respected and trusted as an employee.	3.60	0.55	Very High Extent
5	Clear monitoring guidelines help me to be more focused and productive in my role.	3.30	0.68	High Extent
6	I am less suspicious of management's motives when the reasons for monitoring are openly explained.	3.52	0.58	Very High Extent
7	Understanding the boundaries of acceptable digital device use at work reduces my anxiety.	3.82	0.42	Very High Extent
8	I believe that transparent monitoring fosters a more harmonious and trusting work environment	3.75	0.49	High Extent
Grand Total		3.45	2.28	High Extent

According to the analysis, Transparent Monitoring Policies help to a High Extent (Grand Mean: 3.45) in building trust and productivity at workplace. However, the main drivers are creating less anxiety with precise boundaries (3.82) and a more harmonious milieu (3.75). But the most notable weakness is the Low Extent (2.95) of staff consultation in policy development. With the standard deviation for

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these positive outcomes and the procedural gap being lower than 0.30, confirming that respondents were in strong agreement about them.

Research Question Two. 2. What are the perceived ethical risks associated with the integration of Artificial Intelligence (AI) on equitable labour practices in Nigeria?

Table 2: Perceived Ethical Risks Associated With The Integration Of Artificial Intelligence (Ai) On Equitable Labour Practices

S/N	Item Statement	Mean	SD	Remark
1	The use of AI in hiring increases the risk of algorithmic bias and discrimination.	3.75	0.48	Very High Extent
2	AI-driven automation creates a significant risk of job displacement.	2.35	0.85	Low Extent
3	AI performance monitoring invades employee privacy.	2.90	0.79	High Extent
4	AI risks widening the digital skills gap and increasing inequality.	2.65	0.79	High Extent
5	AI evaluation metrics lack cultural context for Nigerian digital workplaces.	3.20	0.70	High Extent
6	Automated performance tracking metrics generate undue workplace anxiety.	2.50	0.75	Low Extent
7	Over-reliance on AI decision-making dilutes human empathy in management.	3.40	0.68	Very High Extent
8	The lack of AI accountability frameworks creates institutional security gaps.	3.10	0.70	High Extent
Grand Total		2.98	0.72	High Extent

Table 2 yields a Grand Mean of 2.98 (SD = 0.72), demonstrating that perceived ethical risks from AI integration exist to a High Extent. Respondents expressed the greatest concern over algorithmic bias in hiring (X = 3.75) and diluted management empathy (X = 3.40), both registering a Very High Extent. Conversely, AI-driven job displacement was rated lowest (X = 2.35), Low Extent. The data indicates that while broad technological displacement is downplayed, targeted threats to fairness and privacy remain major worries.

Discussion of Findings

The empirical results from this study reveal that transparent and collaboratively developed monitoring policies positively influence employee trust and productivity to a High Extent, yielding a baseline Grand Mean of 3.45. This high rating is primarily driven by clear tracking boundaries that effectively minimize workplace anxiety (X = 3.75). These findings directly validate the findings of Felix et al., (2019), who found that proper regulatory structures determine employee privacy limits and nurture positive behavioral traits that significantly impact the workplace. However, a critical administrative flaw was identified: respondents noted a Low Extent of active staff consultation during policy formulation (X=2.95). This structural omission echoes the problematic realities highlighted by Felix et al., where organizations frequently deploy monitoring tools unilaterally to secure corporate assets while completely neglecting to involve employees in the design of policies aimed at making the workplace less scary.

AI integration risks exist to a High Extent (Grand Mean = 2.98, (SD = 0.72)). The primary threat is hiring bias and algorithmic discrimination (X=3.75), Very High Extent. This directly validates warnings in the problem statement that unguided AI adoption worsens workplace disparities.
Furthermore, anxieties over contextless evaluation metrics (X=3.20) and low accountability (X=3.10) match concerns by Abayomi et al., (2024). They prove Nigeria's digital space must link technology to broader ideals like equity, accountability, and transparency. Conversely, broad job displacement is a minor worry (X=2.35), Low Extent). This shows workers downplay absolute job loss as noted by Morris and Carter (2020), but demand immediate protection from biased, unfair algorithms.

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Conclusion

The study examined the influence of transparent and collaboratively developed employee monitoring policies on perceived levels of trust and productivity among employees in Nigerian digital workplaces. It also examined the perceived ethical risks associated with the integration of Artificial Intelligence (AI) on equitable labour practices in Nigeria. Findings revealed that transparent and collaboratively developed monitoring policies positively influence employee trust and productivity to a High Extent. This study concludes that transparent monitoring policies enhanced trust and productivity in Nigeria workplaces. Clear tracking boundaries reduce employee anxiety, while staff consultation during policy development remains critically low. Perceived ethical risks of AI integration exist to a High Extent, with algorithmic hiring bias and diluted managerial empathy as the greatest concerns. Job placement from AI remains a low extent worry. The study concludes that transparent monitoring builds workplace trust, but unilateral policy implementation and unregulated automation compromise institutional confidence. A significant governance gap exists in participatory policy development and AI accountability framework for Nigeria digital workplaces.

Recommendations

Based on the findings, the study recommends the following:

1. Organizations must establish mandatory policy review committees at least 30% non-management staff to co-create, review and approve all employee monitoring policies before implementation. These committees should meet biannually to ensure policies remain transparent and participatory.
2. For policymakers, the National Information Technology Development Agency (NITDA) should enact regulations requiring independent, annual algorithmic audits for all AI systems used in hiring, performance evaluation and promotion decision with penalties for non-compliance.

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INFLUENCE OF GREEN FINANCE PRACTICES FOR IMPROVING OFFICE TECHNOLOGY AND MANAGEMENT LECTURERS' JOB SATISFACTION IN TERTIARY INSTITUTIONS IN NORTH CENTRAL, NIGERIA

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Abstract

The study investigated the green finance practices for improving Office Technology and Management (OTM) lecturers' job satisfaction in tertiary institutions in North Central, Nigeria. The study adopted descriptive survey research design. The population for the study was 425 Business Educators. Due to the small size of the population, the entire population was studied; therefore, there was no sampling. The instrument for data collection was structured questionnaire. Cronbach Alpha reliability method was used and overall reliability coefficient of 0.97 was established. Data collected were analyzed using mean and standard deviation as well as t-test for the hypotheses. The study found that green car loan, fiscal fund (treasury fund), eco fund, carbon fund, natural disaster bond, green bond, green securitization, among others are the green finance practices for improving office technology and management lecturers' job satisfaction. It was recommended that OTM lecturers should imbibe the culture of learning new things and practice the green culture of recycling of waste and maintenance of infrastructures or facilities; all tertiary institutions should go green by having green buildings with modern facilities to sustain modern education; among others. The study concluded that OTM lecturers should use software to compute and preserve all students' results so that the results can be accessed by people outside the school.

Keywords: Green Finance, Office Technology and Management, Lecturers', Job Satisfaction

1.0 Introduction

Education is a key factor in economic development. It is universally recognized as an important investment in human capital. Education is also widely accepted as major instrument for promoting socio-economic development. Education contributes to socio-economic development by enhancing individuals with the means to improve their health, skills, knowledge and capability for productive work. Everyone knows that it's the human resources of a nation, not its capital nor its material resources that ultimately determine the character and face its economic and social development.

In the 21st century, financing tertiary education has become a critical factor in achieving sustainable development in Nigeria. From individual points of view, green finance initiative in education could be more profitable than other types of investment. Oduma&Adeyemi (2022) stated that green financing could help to improving sustainable education. They further noted that the implementation of green finance in tertiary institution could serves as a strategy for improve job satisfaction of office technology and management lecturers.

Green Finance refers to financial activities like investments, loans, insurance and policies that are designed to support environmentally sustainable projects and reduce environmental risks. It is about directing money toward things that help the planet while still generating financial returns. Green finance plays a crucial role in redirecting financial flows towards low-carbon and environmentally sustainable projects, which are essential for achieving global climate goals (Smith &Miller,2018). Green Finance involves some key ideas such as environmental focus which supports projects that reduces pollution, conserve resources, or combat climate change. It also involves development which balances economic growth with environmental protection and further more it involves risk management which accounts for environmental risks like climate change in financial decisions. Furthermore, researchers like (Brown, Buchholz, Feng, Hayes, James, Jansen, ... & Zhang, 2019) emphasize that green finance not only facilitates the transition to a low-carbon economy but also fosters innovation in clean technologies, thereby driving economic competitiveness and resilience.

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United Nations Economic and Social Commission for Asia and the Pacific (2022) define green finance as a loan or investment that promotes environmentally passive activity, such as the purchase of ecological-friendly goods and services or the construction of green infrastructure. Green finance is introduced to make this world a better place for corporate and individuals. A key part of this is to better manage environmental and social risks, take opportunities that bring both a decent rate of return and environmental benefit and deliver greater accountability. Currently, the most political leaders throughout the world are introducing and implementing green finance in some education sectors to create a sustainable and eco-friendly environment for teaching and learning. Oduma & Adeyemi (2022) opined that the common issues of concern in work places today in office technology and management teachers is job satisfaction. Taghizadeh Hesary, Zakari, Alvarado, and Tawiah (2022) who posited that green finance implementation in tertiary institutions are at the early stage in Africa. Shan, Hwang, and Zhu (2017) noted that implementation of green finance in infrastructure in tertiary institutions is below expectation.

This has posed a lot of thought and concern for employers and employees in various types of organization. In some organizations, industries or institutions, the issue has led to serious workforce migration, alienation as well as industrial disharmony or strike actions. Job satisfaction especially among office technology and management is an issue of common interest in all field of human endeavour. In the private and the public sectors, employers and employees are concerned with employee satisfaction in the work place. Job satisfaction is very vital in employee commitment to duties. It is again vital in employee motivation for improved performance. It is used to retain employee in their employments and in controlling workforce migration and change of employment. The job satisfaction of Office Technology and Management lecturers cannot be played down in the present dispensation for improved performance and students learning in office technology and management programme.

Statement of the Problem

Office technology and management lecturers in tertiary institutions in North Central Nigeria have contributed meaningfully in the country's higher education system especially in teaching, research, innovation, and human capital development. Office technology and management lecturers have potentials to educate, increase the awareness, knowledge, skills and values needed to create a sustainable green economy where natural resources are conserved for forthcoming generation. Nevertheless, the sustainability of these institutions, particularly in terms of green finance and environmental practices, require crucial attention. Misuse of resources and low availability of green finance constitute a fundamental challenge facing Office technology and management lecturers in tertiary institutions in North Central Nigeria. The work environment is surrounded with visible outdated electrical systems, scarcity of power supply during the work hours, shortage of brilliant staff, waste generation, environmental pollution, and inadequate infrastructures which affect learning and implementation of sustainable practices. Poor learning environment and insufficient funding have created more harm to students and staff in the tertiary institutions such that the students take lectures in discomfort environment with no fans, light, air-conditions, and few chairs. Lack of funds prevent the lecturers from attending international conferences abroad where they can acquire best practices knowledge to improve both their skills and students.

Furthermore, the absence of clear policies and guidelines concerning inclusive sustainability education programs encumbers the integration of green practices into the institutions culture. Additionally, bureaucratic processes and administrative barriers may also impede the implementation of sustainable projects and hinder the adoption of eco-friendly solutions that emanate from green change like increased funding and infrastructure upgrades. This ugly scenario has forced this group of intellectuals to continue to be working with dis-satisfaction in most of their areas of employment. Thus lack of job satisfaction among Office Technology and Management lecturers(Workforce) has led to most of them to continue to be jumping and navigating from one institution or organization to the another(Ben Abdallah.A.2026). Again, lack of job satisfaction has also forced some Office Technology and Management lecturers to remain unsettled with their employment. This unfortunate experience has further caused the disengagements of experienced Office Technology and Management lecturers in some tertiary institutions in the North Central, Nigeria. It has equally resulted to untimely decay of good Office Technology and Management programmes designed for implementation in some tertiary

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institutions. More so, because of dissatisfaction of Office Technology and Management lecturers, many experienced experts have decided to withdraw their service without notice to their employers, thus, frustrating the smooth operation of Office Technology and Management instruction and learning in many tertiary institutions in the North Central, Nigeria.

It is on the premise of all these shortcomings that this research seeks to ascertain the necessary green finance practices for improving Office Technology and Management lecturers' job satisfaction in tertiary institutions in North Central, Nigeria

Purpose of the Study

The main purpose of the study was to examine the Influence of green finance practices for improving Office Technology and Management lecturers' job satisfaction in tertiary institutions. Specifically, the study seeks to determine:

1. The influence of the necessary green financial practices for improving Office Technology and Management lecturer's job satisfaction in Tertiary Institutions in the North Central, Nigeria.
2. The extent of the level of implementation of green finance practices for improving office technology and management lecturers' job satisfaction in tertiary institutions
3. The impact of the implementation of green finance practices for improving Office Technology and Management lecturers' job satisfaction in tertiary institutions.

Research Questions

The following research questions guided the study:

1. What are the influences of the necessary green financial practices for improving Office Technology and Management lecturers' job satisfaction in tertiary institutions in the North Central, Nigeria?
2. What are the extent of the level of green finance practices for improving Office Practice and Management lecturers' job satisfaction in tertiary institutions in the North Central, Nigeria?
3. What are the impacts of the implementation of green financial practices in tertiary institutions in the North Central, Nigeria?

Hypotheses

The following null hypotheses were formulated and tested at 0.05 level of significance.

HO_1: There is no significance difference in the mean responses of male and female lecturers on the influence of necessary green financial practices for improving Office Technology and Management lecturers' job satisfaction in tertiary institutions in the North Central, Nigeria.

HO_2: There is no significant difference in the mean responses of lecturers in urban and rural on the level of implementation of green finance practices for improving Office Technology and Management lecturers' job satisfaction in the tertiary institutions in the North Central, Nigeria.

HO_3: There is no significant difference in the mean responses of lecturers in the Polytechnics, Colleges of Education and Universities on the factors influencing implementation of green financial practices in the tertiary institutions in the North Central, Nigeria.

2.0 Literature Review

Office Technology and Management programme (OTM) according to Olannye and Oduma (2024) is an academic programme designed to equip students with office skills needed for employment in various fields of endeavours. Specifically, the programme is expected to train students in special areas as well as general education such that they can fit appropriately into any computerized workplace and perform creditably (National Board for Technical Education, 2008). Office Technology Management (OTM) program in polytechnics comprises two years National Diploma (ND) of four semesters, one-year compulsory Industrial Attachment programme and a second phase of two years Higher National Diploma (HND) of four semesters. Successful students of OTM programme are awarded Higher National Diploma in Office Technology and Management (OTM) upon graduation (NBTE, 2008).

Job satisfaction by Oduma and Adeyemi (2021) is the collection of feelings and beliefs that employees have about current jobs. Job satisfaction, in the context of this work is defined as the extent to which the office technology and management staff is comfortable with his/her general working environment, remuneration as well as the associated freedom to always discharge her functions. Job satisfaction also

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refers to the degree of social and psychological quality of life that is associated with the job. Office technology and management lecturers who are high in job satisfaction generally like their jobs, feel that they are being fairly treated, and believe that their job have many desirable features or characteristics such as interesting work, good pay and job security, autonomy or good co-workers. In general, it is desirable for employees to be satisfied with their jobs, for at least two reasons: first satisfied employees may be more likely to go the extra hours even without extra remuneration. Above all satisfied employees may be less likely to quite their job or look for greener pasture.

Broussard and Witte (2015) outlined the global innovative of job satisfaction factors to include provision of green finance initiative such as green home equity loan, green commercial building loan , green car loan , fiscal fund (treasury fund), eco fund, carbon fund, natural disaster bond , green bond , green securitization, green venture capital and private equity, technology leasing, carbon finance , green fiscal funds, green investment funds, green credit cards, green auto insurance, carbon insurance, catastrophe insurance, green insurance constant. He stated that if the job satisfaction factors are present, office technology and management lecturers would be positive in their behaviour towards their jobs as well as towards students improved learning. Tanner and Tanner (2023) in their study noted that there is need for innovative financing models to address the evolving job satisfaction of lecturers in tertiary institution in Nigeria. Okebukola (2016) argue that green financing for education is insufficient to meet the growing demand of job satisfaction of lecturer in office technology and management.

In light of the above, Addison (2018) noted that work environment in tertiary institutions is an essential consideration in employee job satisfaction. It defines the level of employee comfort resulting from the general environment and circumstances prevailing in the discharge of the work. Work environment includes performance pre-conditions that are important and that can facilitate or frustrate employee performance output (Addison, 2018). Where work environment is poor, performance output of employee may be frustrated. On the other hand, where work environment in our tertiary institutions is good, employee performance output tend to improve. Work environment in tertiary institution is broad in content; it covers such essential components like, departmental leadership, general ergonomics, comfort of employee, ease of job performance and availability of office accommodation, library, laboratory, and school, amongst others. The quality and standard of academics in tertiary institutions is often determined, amongst other factors by job satisfaction of lecturers, because it is the job satisfaction that elicits the desired commitment, dedication and motivation to perform. Koeske, Kirk and Ruktis in Oduma and

Adeyemi (2021) noted that the essential responsibility of management in all organizations or even academic institutions is to ensure the comfort of employees in the work place. The management (employers of labour hold the key in ensuring adequate provision of the needed conducive work environment, employee relations as well as reward system that can sustain and retain the knowledge work force for optimum efficiency, (Okoye, 2016). It is good to share a theoretical knowledge of lecturers' experiences especially in North Central Nigeria in a study like this.

Yimer, Nega, and Ganfure, (2017) noted that bad work environment (lack of facilities like offices, chairs, internet and toilets) was responsible for academic staff dissatisfaction and their reason for leaving. Some other studies (Ramlall, 2019; Zeytinoglu & Denton, 2018) also considered green finance initiative as one of the most important factors in employee's job satisfaction and motivation. Similarly Gbenu, Kolawole, and Lawal, (2018) stated that many tertiary institutions in Nigeria (public and private) had green finance initiative as one of the major problems of academic staff's job dissatisfaction. When the basic facilities are lacking especially in terms of teaching materials, computers, internet and office space, it becomes very difficult for academic staff to be productive and to improve the performance of their students. Mustaffa, Ahmad, and Bahrudin (2021) opined that high risk and low return on investment is a critical factor inhibiting green infrastructural development in developed and developing countries.

Ametepey, Aigbavboa, and Ansah (2015) posited that fear of higher investment costs, and capital constraints are critical factors affecting green finance in infrastructural development. This ultimately will lead to academic staff's job dissatisfaction. According to Ramlall (2019), people are striving and longing to work and to stay in those organizations that provide good and positive work environments. Irshad and Afridi (2017) noted that provision of green finance initiative plays a pivotal role in

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employee's decision whether to leave their job or stay. The Tertiary Institutions in North Central Nigeria need to improve their green finance initiative if they are to sustain their qualified academic staff. Doherty's (2019) stated that a good work environment in the Tertiary Institutions not only retains academic staff but also enables them to achieve the objective of producing talented workforce. Unfortunately, the members of staff in all the Tertiary Institutions under study were equally dissatisfied with the time that those in management positions took to respond to the needs of faculty at the institution level. The demand of academic staff in areas of facilities to enhance their teaching and productivity was largely neglected or not given serious attention by those in management positions.

In addition to the factors that can affect job satisfaction indicator for improved job performance in tertiary institutions are gender and location. Gender could determine job satisfaction indicator for improved job performance in tertiary institutions. Gender refers to a social construct regarding culture-bound conventions, roles and behaviours as well as relations between and among women and men, boys and girls (Nwaubani, Okafor, and Onyeanusi, 2014). Gender is the fact of being male or female which affects role performance (Krieger, 2023). Gender of teachers has little effect on the academic motivation and engagement of male and female. Moris (2019) noted that female lecturers in tertiary institutions were generally more satisfied with their teaching jobs than their male counterparts.The study of Bimrose (2004) reveals that there is significant difference between the male and female academic staff on job satisfaction. The studies of Okpara et al. (2018) and Oshagbemi (2019) in United States and United Kingdom respectively which stated that women were more satisfied and motivated than men in the university setting. The findings of Bender and Heywood (2016) and Machado-Taylor et al. (2019) affirmed that men were more satisfied and motivated than women in tertiary institutions. Raharjo (2018) illustrated that if tertiary institutions engage in green resources innovation such as social responsibility, keeping the offices and class rooms clean, releasing staff development fund, change, culture, recruitment, policies, technology, do what is morally right may lead to job satisfaction of lecturers and improve their performance. Misuse of resources affects the livelihood of lecturers and sustainability of the institution. Inspite of few critical researches on green financial practices, green finance practices for improving Office Technology and Management lecturers' job satisfaction in tertiary institutions remain uncertain, hence the need for the study.

3.0 Methodology

The study adopted descriptive research design and was carried out in all the Polytechnics in the North Central, Nigeria namely: Federal Polytechnic, Idah, Kogi State Polytechnic, Lokoja, Federal Polytechnic, Bida, College of Education, Okene, Federal College of Education, Zuba(FCT). Due to the small size of the population, the entire population was studied; therefore, there was no sampling. The instrument for data collection was structured questionnaire. The instrument was validated by three experts. Based on their comments, some corrections were made on the questionnaire to enhance the validity of the research instrument. Cronbach Alpha reliability method was used and overall reliability coefficient of 0.97 was established. Data for the study were collected with the help of five research assistants. Data collected were analyzed using mean and standard deviation to answer research questions while t-test was employed to test the hypotheses at 0.05 significant level.

4.0 Results

Research Question 1: What are the influences of the necessary green financial practices for improving Office Technology and Management lecturers' job satisfaction in tertiary institutions in the North Central, Nigeria?

Items 1-19 in the research instrument were used to collect data to answer this research question. The results are as summarized in Table 1.

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Table 1: Mean Rating of Respondents on the Green Finance Practices for Improving Office Technology and Management Lecturers' Job Satisfaction in Tertiary Institutions

S/N	Items statement on Green Finance Practices	$\bar{x}$	S.D	Remarks
1	Provision of office ergonomics	3.17	1.01	Agreed
2	Provision of office intercom facilities	3.27	0.93	Agreed
3	Provision of green commercial building loan	3.30	0.94	Agreed
4	Provision of green car loan	3.31	0.90	Agreed
5	Releasing staff development fund	3.29	0.94	Agreed
6	Provision of green mortgage	2.78	1.18	Agreed
7	Provision of green home equity loan	3.00	1.08	Agreed
8	Provision of Natural disaster bond	2.62	1.14	Agreed
9	Provision of green bond	3.01	1.06	Agreed
10	Provision of green securitization	3.30	0.95	Agreed
11	Provision clean class rooms,	2.61	1.22	Agreed
12	Provision of technology leasing	3.28	0.94	Agreed
13	Provision Carbon finance	2.84	1.05	Agreed
14	Provision of network connectivity	2.55	1.08	Agreed
15	Provision of leisure time facilities education during work activities	2.95	1.02	Agreed
16	Provision of green credit cards	3.17	1.01	Agreed
17	Provision of green auto insurance	3.27	0.93	Agreed
18	Provision of Carbon insurance	3.11	1.03	Agreed
19	Provision of green insurance	3.09	0.97	Agreed
	Grand Mean	3.04	1.02	Agreed

The results in Table 1 revealed that all the item statements had a mean rating above the decision mean value of 2.50. This means that all nineteen (19) item statements in Table 1 are accepted by office technology and management lecturers as the perceived green financial practicesfor improving office technology and management lecturers' job satisfaction in tertiary institutions in North Central, Nigeria.

Research Question 2: What is the level of implementation of green finance practices for improving office technology and management lecturers' job satisfaction in tertiary institutions?

Items 20-38 in the research instrument were used to collect data to answer this research question. The results are as summarized in Table 2.

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Table 2: Mean Rating of Respondents on the Level of Implementation of Green Finance Practices for Improving Office Technology and Management Lecturers' Job Satisfaction in Tertiary Institutions

S/N	Items statement on Level of Implementation of Green Finance Practices	$\bar{x}$	S.D	Remark
20	Provision of office ergonomics	2.19	1.15	Very low level of implementation
21	Provision of office intercom facilities	2.10	1.25	Very low level of implementation
22	Provision of green commercial building loan	2.19	1.30	Very low level of implementation
23	Provision of green car loan	1.51	0.86	Very low level of implementation
24	Releasing staff development fund	2.24	1.27	Very low level of implementation
25	Provision of green mortgage	2.26	1.28	Very low level of implementation
26	Provision of green home equity loan	2.36	1.18	Very low level of implementation
27	Provision of Natural disaster bond	2.38	1.31	Very low level of implementation
28	Provision of green bond	1.35	0.98	Very low level of implementation
29	Provision of green securitization	2.21	1.01	Very low level of implementation
30	Provision clean class rooms,	2.11	1.08	Very low level of implementation
31	Provision of technology leasing	1.15	1.68	Very low level of implementation
32	Provision Carbon finance	1.67	1.75	Very low level of implementation
33	Provision of network connectivity	1.90	0.84	Very low level of implementation
34	Provision of leisure time facilities education during work activities	2.19	0.78	Very low level of implementation
35	Provision of green credit cards	2.10	0.75	Very low level of implementation
36	Provision of green auto insurance	1.99	0.89	Very low level of implementation
37	Provision of Carbon insurance	2.01	1.01	Very low level of implementation
38	Provision of green insurance	1.67	1.70	Very low level of implementation
	Grand mean	1.80	1.10	

The results in Table 2 revealed that all the item statements had a mean rating below the decision mean value of 2.50. This means that all nineteen (19) item statements in Table 2shows low level of implementation of green finance practices for improving Office Technology and Management lecturers' job satisfaction in tertiary institutions in North Central Nigeria.

Research Question 3: What are the factors influencing implementation of green finance practices in tertiary institutionsin North Central Nigeria
Items 39-46 in the research instrument were used to collect data to answer this research question. The results are as summarized in Table 3.

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Table 3: Mean Rating of Respondents on the Factors Influencing Implementation of Green Financial Practices in Tertiary Institutions

S/N	Items statement on factors influencing implementation of green finance practices	$\bar{x}$	S.D	Remarks
39	Capital Constraint	3.16	1.00	Agreed
40	Lack of investor incentives	2.99	1.05	Agreed
41	Financial institutions incapability	3.26	0.96	Agreed
42	Exorbitant cost of issuance	2.77	1.09	Agreed
43	Poor institutional quality	2.53	1.10	Agreed
44	lack of harmonized system in tertiary institutions	2.59	1.10	Agreed
45	lack of clarity on what constitutes green finance activities	3.00	0.99	Agreed
46	high inflation in the country	2.75	1.20	Agreed
	Grand Mean	2.88	1.06	Agreed

The results in Table 3 revealed that all the item statements had a mean rating above the decision mean value of 2.50. This means that all eight (8) item statements in Table 3 are accepted by office technology and management lecturers as the factors influencing implementation of green financial practices in tertiary institutionsin North Central Nigeria.

Research Hypotheses

HO_1: There is no significant difference in the mean responses of male and female lecturers on the perceived green financial practices for improving office technology and management lecturers' job satisfaction in tertiary institutions.

Table 4: Summary of t-test Result on the perceived green finance practices for improving office technology and management lecturers' job satisfaction in tertiary institutions Based on Gender

Variable	Number of Cases	Mean	S.D	DF	t.cal	t.crit	Decision	Difference
Male	277	3.25	0.84	399	5.04	1.960	Reject HO	Significant
Female	124	2.74	1.14					

The results as presented in Table 4 showed that the t.cal value of 5.04 is greater than the t.crit value of 1.960 (5.04>1.960), hence, HO_1 is rejected. This means that there is a significant difference in the mean responses of male and female lecturers on the perceived green financial practices for improving office technology and management lecturers' job satisfaction in tertiary institutions in North Central, Nigeria.

HO_2: There is no significant difference in the mean responses of lecturers in urban and rural on the level of implementation of green finance practices for improving office technology and management lecturers' job satisfaction in tertiary institutions.

Table 5: Summary of t-test Result on the level of implementation of green finance practices for improving office technology and management lecturers' job satisfaction in tertiary institutions Based on Location

Variable	Number of Cases	Mean	S.D	DF	t.cal	t.crit	Decision	Difference
Urban	148	2.22	0.90	399	1.71	1.960	Accept HO	NS
Rural	253	2.16	0.99					

The results in Table 5 indicate that the t.cal value of1.67is less than the t.crit value of 1.960 (1.71<1.960), hence, HO_2 is not rejected. This means that there is no significant difference in the mean responses of urban and rural on the level of implementation of green finance practicesfor improving office technology and management lecturers' job satisfaction in tertiary institutions in North Central, Nigeria

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HO_3: There is no significant difference in the mean responses of lecturers in the Polytechnics, Colleges of Education and Universities on the factors influencing implementation of green financial practices in tertiary institutions in North Central Nigeria.

Table 6: ANOVA Result on Factors Influencing Implementation of Green Financial Practices in Tertiary Institutions Based on Institution Types

Source	Df	Sum of Squares	Mean Square	F.cal	F.prob	Decision	Difference
Between Groups	2	10.491	5.245	5.308	0.005	Reject HO	Significant
Within Groups	398	393.294	0.988				
Total	400	402.785					

The results in table 6 show that the average p-value of 0.0051is less than the level of significance of 0.05 (0.005<0.05), hence, HO_3 is rejected. This means that in line with the decision rule, the alternative hypothesis is upheld that there is a significant difference in the mean responses of lecturers in the Polytechnics, Collegesof Education and Universities on the factors influencing implementation of green financial practices in tertiary institutions in North Central Nigeria

Discussion

The research question one sought to determine the green financial practices for improving office technology and management lecturers' job satisfaction in tertiary institutions. The findings from the research question one revealed that indicators such as provision of office ergonomics, network connectivity, social interaction facilities, equity loan, green commercial building loan , green car loan , fiscal fund (treasury fund) , eco fund, carbon fund, natural disaster bond , green bond , green securitization, green venture capital and private equity to mention a few are the green finance practices for improving office technology and management lecturers' job satisfaction in tertiary institutions in North Central, Nigeria.The finding is in line with the submission of Yimer et al. (2017) Zeytinoglu& Denton (2018) and Ramlall (2019) who independently viewed lack of green initiative to cover bad work environment as being the cause for academic staff dissatisfaction and sudden absenteeism from workplaces as well as considered physical work environment as one of the most important factors in employee's job satisfaction and motivation. The finding agrees also with Ramlall (2019) that people tend to stay, strive and long to work in those organizations that provide good and positive work environments, just like Schneider, (2023) and Irshad and Afridi (2017) reported in their studies that adoption of green financial initiative play a pivotal role in employee's decision whether to leave their job or stay.

The result of the t-test analysis of hypothesis 1 in Table 4 shows that there is a significant difference in the mean responses of male and female lecturers on the perceived green financial practices for improving office technology and management lecturers' job satisfaction in tertiary institutions in North Central, Nigeria. This result means that gender is a factor to consider in the case of environmental job satisfaction for improved performance in tertiary institutions. This finding agrees with the work of Moris (2019) who noted that female lecturers in tertiary institutions were generally more satisfied with their teaching jobs than their male counterparts. The study of Bimrose (2001, 2004) reveals that there is significant difference between the male and female academic staff on job satisfaction. The finding of this study also aligns with the studies of Okpara et al. (2018) and Oshagbemi (2019) in United States and United Kingdom respectively which stated that women were more satisfied and motivated than men in the university setting. The finding also is in line with the findings of Bender and Heywood (2016) and Machado-Taylor et al. (2019) that affirmed that men were more satisfied and motivated than women in tertiary institutions.

The result in Table 2 shows the level of implementation of green finance practices for improving office technology and management lecturers' job satisfaction in tertiary institutions. The study showed that there is low level of implementation of green finance practicesfor improving Office Technology and Management lecturers' job satisfaction in tertiary institutions in North Central Nigeria. The result of the t-test analysis of hypothesis 2 in Table 5 shows that there is no significant difference in the mean responses of urban and rural on the level of implementation of green finance practicesfor improving office technology and management lecturers' job satisfaction in tertiary institutions in North Central, Nigeria. This study is in consonance with Taghizadeh Hesary, Zakari, Alvarado, and Tawiah (2022)

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who posited that green finance implementation is at the early stage in Africa. The result of this study is also in tandem with Shan, Hwang, and Zhu (2017) who argued that implementation of green finance in tertiary institution is below expectation. The third research question sought to determine the factors influencing implementation of green financial practices in tertiary institutions in North Central Nigeria, the study shows that perceived high risk and low return on investment, fear of higher investment costs, weak financing structure, investors' lack of in-house capacities to assess greenness of bonds, capital constraint, lack of investor incentives, financial institutions incapability are the critical factors inhibiting the implementation of green financial practices in tertiary institutions in North Central Nigeria. The result of the t-test analysis of hypothesis 3 in Table 6 shows there is a significant difference in the mean responses of lecturers in the Polytechnics, Colleges of Education and Universities on the factors influencing implementation of green financial practices in tertiary institutions in North Central Nigeria. This study is in agreement with Mustaffa, Ahmad, and Bahrudin (2021) who opined that high risk and low return on investment is a critical factor inhibiting green infrastructural development in developed and developing countries. It is also in consonance with Ametepey, Aigbavboa, and Ansah (2015) who posited that fear of higher investment costs, and capital constraint are critical factors affecting green finance in infrastructural development.

5.0 Conclusion

Based on the findings of the study, it was concluded that provision of green financial initiatives practices as provision of office ergonomics, network connectivity, social interaction facilities, equity loan, green commercial building loan, green car loan, fiscal fund (treasury fund), to mention a few are the green finance practices for improving office technology and management lecturers' job satisfaction in tertiary institutions in North Central, Nigeria. The level of implementation of green finance practices for improving office technology and management lecturers' job satisfaction in tertiary institutions. The study also concluded that fear of higher investment costs, and capital constraints are factors influencing implementation of green financial practices in tertiary institutions in North Central Nigeria. The study also concludes that gender, and institution types affect the respondents on the perceived green financial practices and factors influencing the implementation green finance in tertiary institutions while there is no significant difference in the mean responses of urban and rural on the level of implementation of green finance practices for improving office technology and management lecturers' job satisfaction in tertiary institutions in North Central, Nigeria

Recommendations

The following recommendations are made:

1. Management of tertiary institution in North Central Nigeria should develop policy formulation regarding green financial initiatives that can enhance job performance of office technology and management lecturers' in Tertiary Institutions.
2. Management of tertiary institution in North Central Nigeria should implement green finance practices for improving office technology and management lecturers' job satisfaction in tertiary institutions
3. Government should make strategic decision in areas of factors affecting the implementation of green financial initiatives to enable the institutions provide a conducive and non-distracting physical working environment that will further increase the job satisfaction, job attitude and perceived equity thereby enhancing the overall performance.

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INTEGRATING OFFICE TECHNOLOGY AND INFORMATION MANAGEMENT FOR ENVIRONMENTAL AND ECONOMIC SUSTAINABILITY: A FRAMEWORK FOR DIGITAL ECONOMY ORGANIZATIONS IN NIGERIA

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Abstract

The rapid expansion of Nigeria's digital economy presents a critical inflection point for aligning office technology and information management practices with environmental and economic sustainability objectives. While digital transformation enhances operational efficiency, innovation, and competitiveness, it also intensifies energy consumption, electronic waste generation, and carbon emissions particularly within contexts characterized by infrastructural constraints and limited regulatory enforcement. Existing sustainability frameworks are largely grounded in developed economy perspectives and insufficiently account for Nigeria's unique technological, institutional, and socio-economic realities. This position paper addresses this gap by proposing a context-sensitive framework for integrating sustainable development principles into office technology and information management systems within Nigerian digital economy organizations. Drawing on Sustainable Development Theory and the Technology-Organization-Environment (TOE) framework, the paper advances a five-dimensional model encompassing: (1) sustainable technology infrastructure, (2) information lifecycle management, (3) green IT governance, (4) capacity building, and (5) performance measurement. The framework emphasizes phased implementation, economic–environmental value alignment, renewable energy integration, cloud optimization, paperless transformation, circular economy practices, and stakeholder collaboration. The paper argues that sustainability-oriented digital transformation is not merely an environmental imperative but a strategic pathway for enhancing organizational resilience, cost efficiency, and long-term competitiveness in Nigeria's evolving digital ecosystem.

Keywords: Office Technology, Information Management, Environmental Sustainability, Economic Sustainability, Digital Economy

Introduction

The global imperative for sustainable development has intensified as organizations worldwide grapple with the dual challenges of environmental degradation and economic pressures. In Nigeria, Africa's largest economy and most populous nation, the rapid expansion of the digital economy presents both unprecedented opportunities and significant challenges for achieving sustainable development goals. The proliferation of office technologies and information management systems has fundamentally transformed how organizations operate, communicate, and manage resources. However, this digital transformation trajectory raises critical questions about environmental impacts, resource consumption patterns, and the long-term sustainability of technological adoption models.

Recent evidence suggests that the information and communication technology sector contributes significantly to global carbon emissions, with data centers, network infrastructure, and end-user devices collectively accounting for approximately 2-4% of global greenhouse gas emissions (Zhang et al., 2024). Paradoxically, the same technologies offer substantial potential for reducing environmental impact through process optimization, resource efficiency improvements, and the enablement of sustainable business practices. The United Nations Conference on Trade and Development emphasizes that digital transformation must be intentionally steered toward environmental sustainability and social inclusion to realize its full potential for sustainable development (UNCTAD, 2024). In the Nigerian context, organizations face unique challenges in balancing digital advancement with sustainability imperatives. These challenges include inconsistent power supply, limited recycling infrastructure, inadequate regulatory frameworks for electronic waste management, and constrained financial resources for green technology investments. Despite these obstacles, Nigeria's burgeoning digital economy, valued at over $88 billion and projected to grow substantially, presents significant opportunities for leapfrogging to sustainable technological paradigms (U.S. International Trade Administration, 2024).

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While substantial literature examines digital transformation and sustainability separately, limited research addresses their integration within the specific context of Nigerian organizations. Existing frameworks predominantly reflect developed economy perspectives and often fail to account for the infrastructural, socio-economic, and institutional realities of developing nations. This gap becomes particularly critical as Nigeria accelerates its digital economy initiatives, risks replicating unsustainable technological adoption patterns observed in developed economies. This position paper addresses this knowledge gap by proposing a contextualized framework for integrating office technology and information management practices with environmental and economic sustainability objectives in Nigerian digital economy organizations. The significance of this research extends beyond academic contribution to encompass practical implications for policy formulation, organizational strategy development, and sustainable technology adoption pathways in Nigeria and similar developing economies.

Office Technologies and Environmental Sustainability

The relationship between digital technologies and environmental sustainability presents a complex paradox. On one hand, digital technologies contribute to environmental challenges through energy consumption, resource extraction for hardware manufacturing, and electronic waste generation. Zhang et al. (2024) demonstrate that digital technology adoption in manufacturing enterprises significantly influences carbon performance through innovation pathways, finding that green innovation mediates the relationship between digital technology and environmental outcomes. Their research reveals that while digital technologies can enhance carbon performance, the effect varies substantially based on implementation strategies and organizational contexts.

Dogan et al. (2025) extend this analysis by examining how digital transformation and environmental innovation collectively influence sustainability outcomes. Their findings indicate that digital transformation alone is insufficient for achieving sustainability goals; rather, it must be coupled with deliberate environmental innovation strategies. This perspective aligns with the broader scholarly consensus that technological adoption must be intentionally directed toward sustainable outcomes rather than presuming inherent environmental benefits from digitalization.

Cloud Computing and Sustainability

Cloud computing infrastructure represents a critical component of modern office technology ecosystems, with significant implications for sustainability. Buyya et al. (2024) propose integrated management approaches for data center resources and workloads that prioritize energy efficiency and sustainability in cloud computing environments. Their research demonstrates that next-generation cloud systems can achieve substantial energy reductions through intelligent resource allocation, workload optimization, and renewable energy integration. However, concerns about cloud computing's environmental impact persist. Recent data indicates that while cloud providers increasingly commit to renewable energy and carbon neutrality targets, the absolute energy consumption of cloud infrastructure continues rising due to exponential data growth (Kazeem, 2025). This trend underscores the necessity for organizations to implement sustainable cloud consumption practices, including data lifecycle management, storage optimization, and judicious use of compute resources. The ITU and World Bank (2023) emphasize that sustainable cloud adoption requires comprehensive approaches encompassing green data center design, energy-efficient operations, and organizational policies promoting responsible cloud resource utilization.

Paperless Office and Document Management

The transition to paperless office environments constitutes a widely recognized sustainability strategy. DocuWare (2022) quantifies the environmental benefits of paperless transformation, noting that eliminating paper consumption reduces deforestation pressures, decreases energy consumption in paper production, and minimizes waste generation. Their analysis reveals that a typical organization can reduce carbon footprint by approximately 30-40% through comprehensive paperless transformation. GORSPA (2025) extends this analysis by examining sustainable document management as an integrated approach encompassing digital solutions, workflow optimization, and lifecycle management. Their research emphasizes that effective paperless transformation requires more than simply digitizing documents; it necessitates comprehensive reimagining of information management processes, supported by appropriate technologies, training, and organizational culture change. Turing Certs (2025)

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identifies additional benefits including improved operational efficiency, enhanced data security, and reduced storage costs, suggesting that paperless transformation delivers both environmental and economic value.

Circular Economy and Digital Technologies

The circular economy paradigm offers a compelling framework for integrating sustainability into digital technology ecosystems. Neri et al. (2024) conducted a systematic literature review examining relationships between digital technologies and circular economy principles, identifying that digital technologies enable circular economy through enhanced product lifecycle tracking, improved resource efficiency, and facilitated sharing economy models. Their research reveals that successful circular economy implementation requires strategic alignment of technological capabilities with circular business models.

Moharana et al. (2024) provide comprehensive analysis of digital technology-enabled circular economy models, emphasizing resource sustainability and environmental protection. Their work demonstrates that emerging technologies including artificial intelligence, Internet of Things, and blockchain can substantially enhance circular economy implementation through improved material tracking, predictive maintenance, and optimized resource allocation. Kandpal et al. (2024) further elaborate on leveraging digital technologies for circular economy practices, noting that life cycle analysis supported by digital tools enables more informed decision-making regarding environmental impacts. Bücker et al. (2025) examine the role of companies in driving customer behavior change toward circular economy practices through digital technologies. Their empirical research indicates that digital platforms, information transparency, and engagement tools can significantly influence consumer adoption of circular economy behaviors. This finding holds particular relevance for office technology contexts, where organizational practices can cascade to influence broader stakeholder behaviors.

Digital Economy in Nigeria

Nigeria's digital economy has experienced remarkable growth, positioning the nation as a leading technology hub in Africa. The U.S. International Trade Administration (2024) reports that Nigeria's digital economy sector has expanded rapidly, driven by fintech innovation, telecommunications infrastructure development, and increasing internet penetration. However, this growth trajectory has occurred largely without systematic integration of sustainability considerations. Ericsson (2023) examines sustainable digital transformation opportunities in Nigeria, identifying significant potential for leapfrogging to sustainable technological paradigms. Their analysis emphasizes that Nigeria's relatively nascent digital infrastructure presents opportunities to embed sustainability from inception rather than retrofitting existing systems. The World Economic Forum (2024) highlights Nigeria's digital transformation initiatives, particularly the 3 Million Technical Talent (3MTT) program, as catalysts for building digital economy capacity. However, these initiatives require explicit sustainability integration to ensure long-term viability.

The Africa Policy Research Institute (2025) examines youth inclusion in green technology across African nations including Nigeria, revealing substantial gaps in green technology education, skills development, and policy support. Their policy landscape analysis indicates that while Nigeria has established various digital economy initiatives, explicit integration of environmental sustainability remains limited. This gap underscores the critical need for frameworks specifically addressing sustainability integration in Nigeria's digital economy context.

Research Gaps and Opportunities

The literature review reveals several critical gaps. First, while substantial research examines sustainability and digital technologies in developed economy contexts, limited scholarship addresses implementation in developing nations, particularly Nigeria. Second, existing frameworks predominantly focus on either environmental or economic sustainability separately, with insufficient integration of both dimensions. Third, the specific challenges and opportunities associated with office technology and information management in Nigerian digital economy organizations remain underexplored. This paper addresses these gaps by proposing an integrated, context-appropriate framework for Nigerian digital economy organizations.

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Sustainable Development Theory

This paper draws on Sustainable Development Theory, which emphasizes the integration of economic, environmental, and social dimensions for long-term viability. Rooted in the Brundtland Commission's canonical definition meeting present needs without compromising future generations' ability to meet their own needs sustainable development theory provides foundational guidance for this framework (UNCTAD, 2024). In the context of office technology and information management, the theory implies that technological adoption must balance immediate organizational benefits with long-term environmental stewardship and social responsibility. Crucially, the theory foregrounds the interdependence of the economic and environmental dimensions: economic efficiency and environmental integrity are not opposing forces but mutually reinforcing conditions for organizational resilience (Dogan et al., 2025).

When applied to the five-dimensional model advanced in this paper, Sustainable Development Theory aligns with each dimension as follows. Sustainable technology infrastructure (Dimension 1) embodies the theory's call to reduce resource consumption while maintaining productive capacity. Information lifecycle management (Dimension 2) reflects the principle of using only what is necessary and preserving resources for future use. Green IT governance (Dimension 3) operationalizes the theory's emphasis on institutional accountability. Capacity building (Dimension 4) addresses the social dimension equipping human capital to pursue sustainability. Performance measurement (Dimension 5) provides the feedback mechanism through which organizations assess, learn, and improve a requirement the theory implies through its emphasis on adaptive management (Buyya et al., 2024).

Technology-Organization-Environment (TOE) Framework

The Technology-Organization-Environment (TOE) framework, developed by Tornatzky and Fleischer (1990) and widely validated in subsequent literature, explains technology adoption by examining three interacting contexts: technological characteristics, organizational capacity, and environmental (external) factors (Dogan et al., 2025). This framework is particularly relevant for understanding sustainable technology adoption in Nigerian organizations, where technological infrastructure limitations, organizational capacity constraints, and external environmental uncertainties significantly influence implementation outcomes.

The TOE framework's multi-contextual lens maps directly onto the five-dimensional model. Technological context informs Dimensions 1 and 2 the selection, deployment, and management of sustainable technology infrastructure and information systems. Organizational context shapes Dimensions 3 and 4 governance structures and the internal human capacity required for sustainability integration. Environmental context encompassing regulatory pressures, market demands, and infrastructural realities grounds Dimension 5, where performance metrics must account for Nigeria-specific constraints and opportunities (Africa Policy Research Institute, 2025; Ericsson, 2023). Together, Sustainable Development Theory and the TOE framework provide a theoretically coherent and practically applicable basis for the five-dimensional model proposed in this paper.

Current State Analysis: Office Technology and Sustainability in Nigeria

The current state of office technology and sustainability in Nigeria reflects a combination of rapid digital transformation, uneven technological development, growing organisational adoption of digital tools, and persistent environmental sustainability challenges. The following analysis is based on the findings and observations reported by Olubusola et al. (2024), Olanrewaju et al. (2020), Aduwo et al. (2021), Agboola et al. (2021, 2023), and Nwankwo et al. (2020).

Digital Infrastructure Landscape: Nigeria's digital infrastructure presents a mixed landscape characterised by rapid growth alongside persistent structural challenges. Internet penetration has increased substantially, with mobile internet accounting for a significant proportion of this expansion. However, the quality and availability of digital infrastructure remain uneven, particularly because of the urban-rural digital divide, unreliable electricity supply, inadequate broadband coverage, and variations in network quality. Data centres and cloud-computing infrastructure are also expanding, although a considerable proportion of these services is provided by international technology companies. This situation raises important concerns regarding data sovereignty, energy consumption,

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environmental accountability, and the sustainability of Nigeria's rapidly expanding digital infrastructure (Olubusola et al., 2024; Olanrewaju et al., 2020; Nwankwo et al., 2020).

Organisational Technology Adoption Patterns: Organisations within Nigeria's digital economy demonstrate varying levels of technology adoption. Leading fintech companies, technology startups, and other digitally oriented organisations have developed relatively sophisticated technological infrastructures that increasingly resemble those of their international counterparts. Nevertheless, many organisations, particularly those with limited financial and technological capacity, continue to depend on legacy systems, paper-based processes, and energy-intensive on-premises infrastructure. Cloud computing adoption is also increasing, particularly among organisations seeking to reduce the capital costs associated with acquiring and maintaining physical infrastructure. However, sustainability considerations are not yet consistently integrated into decisions concerning technology acquisition, cloud-service providers, or digital infrastructure management (Olubusola et al., 2024; Aduwo et al., 2021; Agboola et al., 2021, 2023).

Sustainability Awareness and Practices: Environmental sustainability awareness among Nigerian organisations is gradually increasing, although the translation of this awareness into comprehensive organisational practices remains limited. Where corporate sustainability reporting exists, greater attention is often given to social responsibility and economic concerns than to the environmental implications of technology use. Green information technology initiatives are emerging within some leading organisations, but these initiatives tend to emphasise energy efficiency and cost reduction rather than broader environmental sustainability strategies. Electronic waste management remains a significant concern because of inadequate formal recycling infrastructure, limited public and organisational awareness, and weaknesses in regulatory enforcement. These conditions contribute to inappropriate disposal practices and increase the potential environmental consequences associated with the rapid adoption and replacement of electronic technologies (Olanrewaju et al., 2020; Aduwo et al., 2021; Agboola et al., 2021, 2023; Nwankwo et al., 2020).

Regulatory and Policy Environment: Nigeria's regulatory and policy environment for digital technology and sustainability is evolving in response to the country's expanding digital economy. Regulatory institutions, including the National Information Technology Development Agency (NITDA), have introduced policies and guidelines intended to strengthen responsible ICT development and digital governance. However, implementation and enforcement remain important challenges. Although environmental regulations are in place, they do not always provide sufficiently specific provisions addressing the environmental implications of rapidly evolving digital technologies, including energy consumption, electronic waste, data-centre operations, and sustainable technology procurement. Recent developments in data protection and digital governance demonstrate increasing regulatory attention to the digital economy, although environmental sustainability remains comparatively less prominent within these frameworks. Consequently, stronger integration of environmental sustainability into Nigeria's digital technology policies and regulatory mechanisms is required (Olubusola et al., 2024; Agboola et al., 2023; Nwankwo et al., 2020).

However, several challenges impede sustainable technology adoption in Nigerian organizations such as infrastructure constraints, limited technical capacity, and financial constraints

Proposed Framework: Integrating Office Technology and Information Management for Sustainability

The proposed framework comprises five interconnected dimensions designed specifically for Nigerian digital economy organizations. Each dimension addresses critical aspects of sustainable technology integration while acknowledging contextual realities required according to Olubusola et al., 2024; Agboola et al., 2023 & Nwankwo et al., 2020):

Dimension 1: Sustainable Technology Infrastructure

Cloud Computing Optimization: Organizations should strategically leverage cloud services from providers demonstrating commitment to renewable energy and carbon neutrality. Selection criteria should explicitly include environmental performance metrics alongside traditional factors of cost, performance, and security. Organizations should implement cloud resource optimization practices, including automated scaling to match demand, data lifecycle management to reduce storage footprint, and regular audits of cloud resource utilization.

Green Hardware Procurement: Procurement policies should prioritize energy-efficient devices certified under recognized standards such as ENERGY STAR or EPEAT. Organizations should implement extended hardware lifecycles through proper maintenance and strategic refresh cycles, balancing energy efficiency improvements with the environmental impact of manufacturing new

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devices. Preference should be given to vendors offering take-back programs and demonstrating responsible supply chain practices.

Energy Management Systems: Given Nigeria's power challenges, organizations should invest in renewable energy solutions including solar installations to power IT infrastructure. Intelligent power management systems should automatically adjust device power states based on usage patterns. Data center operations, where applicable, should implement cooling optimization, server virtualization, and workload consolidation to maximize energy efficiency.

Dimension 2: Sustainable Information Lifecycle Management

Paperless Transformation: Organizations should implement comprehensive document management systems enabling digital workflows from creation through archival. This includes electronic signature capabilities, digital forms, automated workflow routing, and secure digital archiving. However, paperless transformation must be undertaken thoughtfully, ensuring digital systems actually reduce rather than merely shift environmental impact.

Data Governance and Minimization: Robust data governance frameworks should define data retention policies aligned with regulatory requirements while minimizing unnecessary data storage. Automated data lifecycle management should archive infrequently accessed data to lower-energy storage tiers and permanently delete data exceeding retention requirements. Data duplication should be eliminated through deduplication technologies and centralized storage architectures.

Information Security and Efficiency: Security measures should be designed for efficiency as well as effectiveness. This includes optimizing encryption algorithms for energy efficiency, implementing efficient backup and recovery processes, and adopting zero-trust architectures that reduce unnecessary network traffic and processing overhead.

Dimension 3: Green IT Governance and Policy

Sustainability Policy Integration: Organizations should develop explicit green IT policies integrated with broader sustainability strategies. These policies should establish environmental criteria for technology decisions, set measurable sustainability targets, and define accountability mechanisms. Policies should be communicated clearly across the organization and incorporated into technology planning and procurement processes.

Environmental Impact Assessment: Technology investment decisions should include environmental impact assessments examining energy consumption, carbon emissions, resource utilization, and end-of-life management. Total cost of ownership calculations should incorporate environmental costs and long-term sustainability implications alongside traditional financial metrics.

Dimension 4: Capacity Building and Digital Literacy

Green IT Training: Organizations should invest in training IT professionals in sustainable technology practices, including green data center management, energy-efficient system design, and sustainable software development. Training should also extend to general employees on sustainable technology use, including efficient email management, responsible printing practices, and proper device power management.

Sustainability Awareness Programs: Regular awareness initiatives should educate stakeholders on environmental impacts of technology choices and promote sustainable behaviors. This includes communicating the organization's sustainability objectives, celebrating sustainability achievements, and engaging employees in sustainability improvement initiatives.

Dimension 5: Performance and Continuous Improvement

Sustainability Metrics Framework: Organizations should establish comprehensive metrics tracking both environmental and economic sustainability outcomes. Environmental metrics should include energy consumption, carbon emissions, electronic waste generation, paper consumption, and water usage. Economic metrics should encompass total cost of ownership, operational efficiency gains, risk mitigation value, and competitive positioning improvements.

Performance Monitoring Systems: Automated monitoring systems should continuously track sustainability metrics, providing real-time visibility into environmental performance. These systems should generate regular reports for management review and support data-driven decision-making regarding sustainability initiatives.

Discussion

Framework applicability and phased implementation: The proposed five-dimensional framework is designed for phased implementation, enabling Nigerian organizations to prioritize dimensions based on context, resources, and maturity. Smaller organizations might initially focus on cloud optimization (Dimension 1) and paperless transformation (Dimension 2), which offer relatively quick environmental

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and economic wins with manageable investment requirements (DocuWare, 2022; Buyya et al., 2024). Larger organizations with greater resources can pursue comprehensive implementation across all five dimensions simultaneously. Critically, this adaptability reflects the TOE framework's recognition that organizational and environmental contexts fundamentally shape which sustainability pathways are viable the framework's contextual sensitivity is a feature, not a limitation.

How office technology and information management influences environmental sustainability: The five-dimensional model positions office technology and information management not as peripheral concerns but as primary levers of environmental sustainability within Nigerian organizations. Dimension 1's emphasis on cloud optimization and renewable energy directly addresses Nigeria's energy-intensive IT operations and diesel generator dependency. Dimension 2's information lifecycle management reduces both paper waste and the energy consumed in data storage and retrieval. Dimension 3's green IT governance institutionalizes environmental accountability in technology procurement and deployment decisions preventing the perpetuation of energy-inefficient legacy systems. Collectively, these dimensions operationalize a coherent theory of change: that the decisions organizations make about how they acquire, manage, and retire office technology and information infrastructure are among the most consequential levers for reducing their environmental footprint (Zhang et al., 2024; Neri et al., 2024).

How office technology and information management influence economic sustainability. The five-dimensional model makes explicit the economic case for sustainable technology adoption — a case that is particularly important in the Nigerian context, where financial constraints often determine organizational priorities. Cloud optimization and energy management (Dimension 1) reduce infrastructure and operational costs. Paperless transformation and data minimization (Dimension 2) eliminate recurring expenditure on printing materials, physical storage, and data redundancy. Green IT governance (Dimension 3) incorporates total cost of ownership thinking, ensuring that environmental costs are internalized rather than externalized. Capacity building (Dimension 4) reduces costly errors and inefficiencies associated with unsustainable technology use. Performance measurement (Dimension 5) provides the evidence base organizations need to justify sustainability investments to boards and funders. As Dogan et al. (2025) argue, digital transformation and environmental innovation are not economically competing priorities but complementary strategies a conclusion the five-dimensional framework embeds at its core.

Stakeholder collaboration as a cross-cutting Enabler: Successful framework implementation requires coordinated action across stakeholder groups. Government should develop comprehensive green IT policies with clear standards, tax incentives for green technology investments, and strengthened e-waste management regulations. Industry associations such as NIOTIM can facilitate knowledge sharing, develop industry-specific sustainability standards, and coordinate collective action on shared challenges. Educational institutions must integrate sustainability into ICT and management curricula and produce Nigeria-focused sustainability research (Africa Policy Research Institute, 2025). Technology vendors should enhance environmental performance transparency and develop Nigeria-appropriate sustainable solutions. International development partners can support through technical assistance, concessional financing, and knowledge transfer from global best practices.

Mitigation of implementation barriers: Several barriers may impede framework implementation in the Nigerian context. Infrastructure limitations particularly unreliable power supply can be mitigated through renewable energy investments and intelligent power management, and through advocacy for infrastructure policy improvements (Ericsson, 2023). Limited technical capacity can be addressed through partnerships with educational institutions, engagement with international expertise, phased implementation allowing gradual capability development, and leveraging managed cloud services that externalize some technical complexity. Financial constraints require prioritizing initiatives with strong business cases and rapid payback periods, exploring shared services models, and quantifying total value including risk mitigation and competitive advantages. Cultural and awareness barriers necessitate sustained leadership commitment and clear communication of sustainability benefits (World Economic Forum, 2024).

Conclusion

This position paper has analyzed the nexus between office technology, information management, and sustainability in Nigeria's rapidly evolving digital economy. Drawing on Sustainable Development Theory and the Technology-Organization-Environment (TOE) framework, the paper has proposed a context-sensitive five-dimensional model encompassing sustainable technology infrastructure, information lifecycle management, green IT governance, capacity building, and performance

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measurement as a coherent pathway for Nigerian digital economy organizations to embed sustainability into their digital strategies.

The analysis demonstrates that office technology and information management are primary not peripheral determinants of both environmental and economic sustainability outcomes. Cloud optimization, paperless transformation, circular economy procurement, green IT governance, and performance monitoring collectively constitute a strategic sustainability agenda that simultaneously reduces environmental impact and strengthens economic resilience. The paper argues that Nigeria's current digital transformation trajectory will shape its long-term sustainability outcomes, and that deliberate integration of sustainability principles can position Nigerian organizations as leaders in sustainable digital economy development across Africa.

Recommendations

Based on the foregoing analysis and conclusions, the following targeted recommendations are advanced:

1. Nigerian digital economy organizations should adopt the five-dimensional framework as a strategic guide, beginning with dimensions offering the most immediate environmental and economic returns cloud optimization and paperless information management before scaling to comprehensive implementation.
2. The Nigerian government, through NITDA and relevant ministries, should develop enforceable green IT standards, establish tax incentives for sustainable technology investments, and strengthen e-waste management regulations to create an enabling policy environment for the framework's adoption.
3. NIOTIM and allied industry associations should develop sector-specific sustainability benchmarks and facilitate knowledge-sharing platforms, enabling organizations to learn from early adopters and collectively address shared challenges such as e-waste management.
4. Higher institutions offering Office Technology and Management, Information Management, and related programmes should integrate sustainability content including green IT governance, circular economy principles, and sustainable information lifecycle management into their curricula to build the human capital the framework requires.
5. Technology vendors and cloud service providers operating in Nigeria should provide transparent environmental performance data, develop locally appropriate sustainable solutions, and establish responsible e-waste take-back programmes as baseline obligations to Nigerian organizational clients.

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GREEN OFFICE PRACTICES FOR ENVIRONMENTAL SUSTAINABILITY: A LOCAL AND GLOBAL PERSPECTIVE

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Abstract

Green office practices play a pivotal role in promoting environmental sustainability, both locally and globally. The paper explores the integration of eco-friendly strategies within office environments, focusing on energy efficiency, waste reduction, and resource conservation. It explains strategies to reduce paper and resource waste, enhancing energy efficiency, managing office waste through recycling systems, and promoting sustainable commuting and remote work. Drawing from academic literature, policy frameworks, and practical case studies, the study highlights how offices can serve as catalysts for environmental change. It also identifies systemic challenges, including infrastructural, financial, and cultural barriers, while presenting opportunities for innovation, resilience, and alignment with global sustainability frameworks like the Sustainable Development Goals (SDGs).Globally, the impact of widespread adoption of green practices can significantly mitigate climate change effects, as businesses contribute to reducing greenhouse gas emissions. The paper also examines the importance of governmental policies and corporate responsibility in fostering sustainable practices by aligning local actions with global sustainability goals, organizations can catalyze a broader movement towards an environmentally responsible future. The paper concludes, among others, that interconnectedness of local initiatives and global challenges, advocating for a collaborative approach to achieving sustainable office environments that benefit both the planet and society should be embraced.

Keywords: Green Office, Environmental Sustainability, SDGs, Waste Management and Energy Efficiency.

Introduction

In the face of escalating climate change, biodiversity loss, and resource depletion, the urgency for sustainable practices across all sectors has never been greater. Offices often perceived as neutral spaces, are in fact significant contributors to environmental degradation through energy consumption, paper waste, and carbon emissions from daily operations (Pyrilia, 2024). As such, the modern workplace must evolve into a proactive agent of environmental stewardship.Green office practices encompass a wide range of strategies aimed at minimizing ecological footprints while enhancing operational efficiency. These include reducing paper usage, optimizing energy consumption, managing waste responsibly, and encouraging sustainable commuting habits. According to (AWorld, 2023), offices that adopt eco-friendly measures not only reduce their environmental impact but also experience improved employee well-being, increased productivity, and enhanced corporate reputation.

Moreover, the shift toward sustainability in office environments reflects a broader societal transformation. As noted by Architecture Courses.org 2024, sustainable office design has progressed from basic energy-saving measures to holistic approaches that integrate wellness, biophilic design, and smart technologies. This evolution underscores the growing recognition that environmental responsibility is not merely a corporate obligation but a strategic imperative for long-term resilience. Therefore, this paper argues that implementing green office practices is not only environmentally responsible but also economically and socially advantageous. By embedding sustainability into the fabric of office culture, organizations can lead the charge toward a more sustainable and equitable future.

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Green Office Practices

Green Office Practices will reduce paper and resource waste as it offers both environmental and economic benefits to the office environment,globally, offices are significant contributors to paper consumption, with millions of tons used annually much of it unnecessarily. The environmental cost of paper production includes deforestation, high water usage, and carbon emissions (SwipedOn, 2024). In response, many organizations are transitioning to digital workflows, cloud-based storage, and electronic communication systems to minimize reliance on physical documents.

In Nigeria, the shift toward paperless operations is gaining traction, particularly within academic and public institutions (Okoye et al. 2024) highlight that Nigerian academic libraries are adopting digital archives and electronic resources to reduce paper usage and environmental impact. However, challenges such as limited infrastructure, funding constraints, and low digital literacy still hinder widespread adoption. To address these barriers, local institutions are encouraged to implement awareness campaigns, invest in digital tools, and develop clear policies that promote sustainable resource use (Nwafor et al., 2024).

Employee engagement is also critical, educating staff about the environmental impact of paper waste and encouraging mindful printing habits, such as double-sided printing and using recycled paper, can foster a culture of sustainability. The *Green Office Guide* (Sustainability Exchange, 2024) emphasizes that setting measurable paper reduction goals and involving employees in tracking progress leads to more effective and lasting change.Moreover, integrating recycling programs and partnering with local waste management services ensures that unavoidable paper waste is properly processed. In Nigeria, the Federal Ministry of Environment has initiated programs to promote circular economy principles, including paper recycling and waste-to-energy initiatives (UNIDO, 2022). These efforts align with global sustainability goals and demonstrate the potential for local innovation to contribute to broader environmental objectives.Ultimately, reducing paper and resource waste is not just a technical adjustment, it is a cultural shift by combining international best practices with locally tailored strategies; Nigerian offices can lead the way in building greener, more efficient workplaces.

Environmental Sustainability

Energy efficiency and renewable energy integration are central to the transformation of office environments into sustainable spaces. Globally, office buildings account for a significant portion of energy consumption, primarily due to lighting, heating, cooling, and electronic equipment. According to the International Renewable Energy Agency (IRENA), improving energy efficiency in buildings could reduce global energy demand by up to 25% by 2050 (IRENA, 2023). This underscores the importance of adopting energy-saving technologies and renewable energy systems in office design and operations. In Nigeria, the push for energy efficiency is gaining momentum through national policies and strategic frameworks. The National Renewable Energy and Energy Efficiency Policy (NREEEP) and the National Energy Efficiency Action Plan (NEEAP) provide a roadmap for reducing energy intensity across sectors, including commercial buildings (Energy Commission of Nigeria, 2022). These policies emphasize the use of energy-efficient lighting, appliances, and building materials, as well as the enforcement of the Building Energy Efficiency Code (BEEC) to guide sustainable construction practices.

A study by Idowu and Abdulrahman, (2023) on office buildings in Abuja revealed that integrating green architectural principles, such as natural lighting, passive ventilation, and proper building orientation significantly reduces artificial energy demand. Respondents in the study also supported the enforcement of green building policies to improve energy performance and reduce operational costs.On the renewable energy front, Nigeria possesses vast solar potential, particularly in the northern regions. The Renewable Energy Roadmap for Nigeria developed in collaboration with IRENA, outlines strategies for scaling up solar photovoltaic (PV) systems in commercial and public buildings to reduce reliance on fossil fuels and enhance energy security (Nigeria Energy, 2023). Offices can benefit from rooftop solar installations, solar water heaters, and hybrid energy systems that combine grid power with renewable sources.

Internationally, many organizations are adopting smart energy management systems that monitor and optimize energy use in real time. These systems when combined with renewable energy integration, not

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only lower carbon emissions but also improve operational efficiency and resilience (IRENA, 2023). Nigerian offices can adopt similar technologies supported by government incentives and partnerships with clean energy providers.Energy efficiency and renewable integration are not just technical upgrades they are strategic investments in sustainability. By aligning with both global innovations and local policy frameworks, Nigerian offices can lead the way in creating energy-smart, climate-resilient workplaces.

Influence of Green Office Practices on Environmental Sustainability

Effective waste management and recycling systems are essential components of green office practices which directly contributing to environmental sustainability and public health. Globally, the volume of municipal solid waste is projected to rise from 2.1 billion tonnes in 2023 to 3.8 billion tonnes by 2050, with the associated costs potentially reaching USD 640.3 billion annually if current practices persist (UNEP, 2024). This alarming trend underscores the urgent need for offices to adopt waste reduction strategies that align with the principles of the circular economy.International best practices emphasize the importance of the waste hierarchy reduce, reuse, recycle as a framework for sustainable waste management. Countries like Sweden and Japan have achieved recycling rates above 80% through a combination of public education, strict waste segregation policies and economic incentives (Odiete, 2024). Offices in these countries implement meticulous sorting systems, provide clearly labeled recycling bins, and engage employees in sustainability campaigns to foster a culture of environmental responsibility.

In Nigeria however, the waste management landscape presents unique challenges with over 32 million tonnes of solid waste generated annually, less than 20% is formally collected, and less than 10% is recycled (UNIDO, 2022). Much of the waste ends up in open dumps or is burned, contributing to pollution and health hazards. Despite these challenges, efforts are underway to transition from a linear to a circular economy. The Federal Ministry of Environment has initiated programs to establish material recovery facilities, composting centers, and waste-to-energy projects aimed at improving recycling rates and reducing landfill dependency (UNIDO, 2022). Private sector initiatives are also making strides. Atunlo, a Nigerian recycling startup, has disbursed over ₦70 million in incentives to individuals and small businesses for recyclable materials demonstrating the potential of financial rewards to drive behavioral change (Odiete, 2024). Such models inspired by global systems like Germany's Pfand deposit-refund scheme show promise for scaling up sustainable waste practices in Nigerian offices.

To be effective, office-based waste management systems must be supported by employee's training, clear signage and partnerships with certified recycling firms. Integrating composting for organic waste and eliminating single-use plastics, by encouraging reusable containers and eco-friendly packaging, it can further reduce environmental impact. These practices not only align with Nigeria's Sustainable Development Goals (SDGs) but also position offices as leaders in environmental stewardship.

Sustainable commuting and remote work practices are increasingly recognized as vital components of green office strategies, offering significant environmental, economic, and social benefits. Globally, transportation accounts for nearly one-quarter of energy-related carbon dioxide emissions with daily commuting contributing a substantial share (UNEP, 2024). Encouraging alternatives such as public transit, cycling, walking, and carpooling can drastically reduce an office's carbon footprint while promoting healthier lifestyles.In Nigeria, urban centers like Lagos and Abuja face severe traffic congestion and air pollution, largely due to the dominance of private vehicle use. To address this, the Lagos State Government has introduced initiatives such as the Bus Rapid Transit (BRT) system and non-motorized transport policies aimed at promoting sustainable mobility (Lagos Metropolitan Area Transport Authority-LAMATA, 2023). However, uptake remains limited due to infrastructure gaps, safety concerns, and inconsistent service delivery. Offices can support these efforts by offering incentives for employees who use public transport or bicycles, and by providing facilities such as bike racks and showers.

Remote and hybrid work models have emerged as powerful tools for reducing commuting-related emissions. A joint study by Cornell University and Microsoft found that remote workers can have up to a 54% lower carbon footprint compared to their on-site counterparts (EnviroNews Nigeria, 2024). In Nigeria, the federal government's plan to digitalize 80% of its operations by 2025 reflects a broader

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shift toward virtual work environments which not only reduce environmental impact but also enhance flexibility and productivity (ThisDay, 2024).

Moreover, remote work enables the creation of green home offices. Employees can adopt eco-friendly practices such as using energy-efficient devices, maximizing natural lighting, and incorporating recycled materials into their workspace design (Capita Works, 2025). These small but meaningful changes contribute to a broader culture of sustainability that extends beyond the traditional office setting.Ultimately, sustainable commuting and remote work are not just responses to environmental challenges, they are opportunities to reimagine the future of work. By embracing these practices, Nigerian offices can align with global sustainability trends while addressing local urban and infrastructural realities.

Challenges of Green Office Practices

While the adoption of green office practices offers immense environmental and economic benefits, it is not without its challenges, particularly in developing contexts like Nigeria. One of the most significant barriers is the **lack of awareness and organizational culture** that supports sustainability (Adekoya et al. 2023) found that many Nigerian organizations lack the internal structures, leadership commitment, and employee engagement necessary to implement green human resource management (GHRM) practices. This is compounded by limited access to green financing, inadequate infrastructure, and weak enforcement of environmental regulations.Political will and policy coherence also remain critical hurdles. Although Nigeria has introduced frameworks such as the Energy Transition Plan and the National Renewable Energy and Energy Efficiency Policy, implementation is often hampered by bureaucratic inefficiencies and fragmented institutional coordination (PwC Nigeria, 2023). Moreover, the absence of mandatory sustainability reporting standards for private sector organizations limits transparency and accountability in environmental performance. Globally, similar challenges persist, albeit in different forms. In high-income countries, resistance to change, upfront costs of green technologies, and the complexity of retrofitting existing buildings are common concerns (UNEP, 2024). However, these challenges are increasingly being addressed through **public-private partnerships**, green bonds, and international climate finance mechanisms that support sustainable infrastructure and innovation.

Opportunities in Green Office Practices

Despite these obstacles, the opportunities are substantial. In Nigeria, the transition to green office practices can stimulate job creation in renewable energy, waste management and sustainable construction sectors. It also presents a chance to leapfrog outdated technologies and adopt smart energy-efficient systems that align with global best practices (Adenikinju, 2022). Internationally, organizations that embrace sustainability often enjoy enhanced brand reputation, investor confidence and employee satisfaction.Furthermore, the growing global emphasis on Environmental, Social, and Governance (ESG) criteria is pushing companies to integrate sustainability into their core strategies. Nigeria's early adoption of the International Sustainability Standards Board (ISSB) disclosure framework signals a promising shift toward greater environmental accountability (PwC Nigeria, 2023).The road to green office transformation is fraught with challenges though also paved with opportunities for innovation, resilience, and inclusive growth. By addressing systemic barriers and leveraging both local and global support, Nigerian offices can become powerful agents of sustainable development.

Conclusion

Green office practices are no longer optional luxuries, they are essential strategies for achieving environmental sustainability, economic resilience, and social responsibility. As this paper has demonstrated, implementing measures such as reducing paper waste, improving energy efficiency, managing waste responsibly, and promoting sustainable commuting and remote work can significantly reduce the ecological footprint of office environments.In Nigeria, the growing awareness of climate change and the government's commitment to sustainability through policies like the Energy Transition Plan and the Circular Economy Roadmap will provide a strong foundation for green office transformation (UNIDO, 2022). However, challenges such as limited infrastructure, funding constraints, and low awareness continue to hinder widespread adoption (Adekoya et al., 2023). Addressing these barriers requires a multi-stakeholders' approach involving government, private sector, academia, and civil society.

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Globally, the momentum toward sustainable workspaces is accelerating, driven by innovations in green technology, evolving regulatory frameworks and the rising influence of Environmental, Social, and Governance (ESG) standards (UNEP, 2024). Nigerian organizations have the opportunity to align with these trends, not only to reduce environmental impact but also to enhance competitiveness, attract investment, and contribute to the United Nations Sustainable Development Goals (SDGs).Ultimately, the transition to green office practices is both a moral imperative and a strategic advantage. By embedding sustainability into the core of organizational culture and operations, offices can become powerful agents of change locally and globally at this crucial time to make the world a better place and peaceful co-existence of humanities.

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ROLE OF INFORMATION MANAGEMENT IN ACHIEVING SUSTAINABLE DEVELOPMENT

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Abstract

Sustainable development is the process of meeting the needs of the present generation without compromising the ability of future generations to meet their own needs. It is using resources responsibly today while ensuring that future generations can also enjoy a healthy environment, a stable economy and a good quality of life. In the modern era, information management plays a pivotal role in achieving sustainable development by enabling data-driven decision-making, efficient resource utilization, and enhanced transparency. Governments, businesses, and organizations rely on advanced digital tools, including artificial intelligence, cloud computing, and blockchain, to optimize operations and promote sustainability. However, challenges such as cybersecurity risks, digital skill gaps, and infrastructure limitations hinder the seamless integration of information management into sustainability efforts. To address these issues, policymakers and industry leaders must implement robust data governance frameworks, capacity-building initiatives, and strategic technology investments. This paper explores the significance of information management in sustainable development, highlights the challenges faced, and proposes actionable strategies for ensuring its effective implementation. By embracing digital transformation, societies can pave the way for inclusive, transparent, and efficient sustainable solutions that benefit both present and future generations.

Keywords: Data-Driven Decision Making, Digital Transformation and Environmental Conservation, Information Management, Sustainable Development, Resource Optimization

1.0 Introduction

In an era of rapid technological advancement, information management plays a vital role in achieving sustainable development. Effective management of information enhances decision-making, improves resource allocation, and drives innovation across industries. Sustainable development, as outlined by the United Nations, seeks to balance economic growth, social progress, and environmental protection. To achieve this, businesses, governments, and individuals must integrate digital strategies that optimize data collection, processing, and utilization. This paper explores the significance of information management to sustainability, highlights the challenges faced, and presents strategies for effective implementation. Information Management refers to the systematic process of collecting, storing, organizing, retrieving, and utilizing information to support decision-making and business operations. It involves strategies, technologies, and policies that ensure data is efficiently managed and protected throughout its lifecycle (Suleiman et al., 2022).

Key aspects of information management include: Data Governance (establishing rules and policies for data usage), Storage & Retrieval (ensuring secure and accessible information systems), Security & Privacy (protecting sensitive data from unauthorized access), and Decision Support (using data analytics to enhance business strategies) (Okechukwu, 2025). Effective information management helps organizations improve efficiency, compliance, and innovation while minimizing risks. Information management plays a critical role in Nigeria's education sector by ensuring efficient data collection, storage, and utilization for decision-making and policy development (Federal Ministry of Education, 2021). Educational Management

Information Systems (EMIS): The Nigerian government has implemented EMIS to track student enrollment, teacher distribution, and school infrastructure. EMIS helps policymakers allocate resources effectively and improve educational planning (Federal Ministry of Education, 2021; Okafor et al., 2024). Such strategies include:

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(a) **Digital Learning & E-Libraries:** Universities and schools are adopting cloud-based learning platforms to enhance accessibility. Digital libraries provide students with remote access to academic materials, reducing dependency on physical books (UBEC & DLN, 2025).

(b) **Data-Driven Policy Making:** Information management enables accurate data collection for education reforms. Government agencies use analytics to assess literacy rates and improve curriculum development (HISP Nigeria, 2025).

(c) **Challenges in Information Management for Education:** Infrastructure limitations, many schools lack reliable internet and digital tools. Data security concerns, protecting student records and institutional data remains a challenge. Digital skill gaps, teachers and administrators require training to effectively use information systems (Suleiman et al., 2022; Nwuke & Yellowe, 2025).

(d) **Future Prospects:** Expanding cloud-based education and AI-driven learning tools can enhance Nigeria's education system. Strengthening data governance policies will improve transparency and efficiency in education management (Ozioma, 2025).

Sustainable development is a global approach that seeks to balance economic growth, social progress, and environmental protection to ensure long-term prosperity. The concept was popularized by the Brundtland Report (1987), which defined sustainable development as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (World Commission on Environment and Development, 1987). Key principles of sustainable development are economic sustainability (ensuring stable economic growth while minimizing resource depletion), social sustainability (promoting equity, education, healthcare, and human rights), and environmental sustainability (protecting ecosystems, reducing pollution, and conserving natural resources) (Emas, 2015).

In the contemporary world, sustainable development has become a major goal for governments, organizations, and communities seeking to balance economic growth, social well-being, and environmental protection. Achieving sustainable development requires timely, accurate, and relevant information for planning, decision-making, policy formulation, implementation, and monitoring of development initiatives. However, many institutions face challenges related to poor information management practices, including inadequate data collection, inefficient storage systems, limited access to information, poor dissemination mechanisms, and weak utilization of information resources. These challenges often result in ineffective decision-making, duplication of efforts, wastage of resources, and poor development outcomes.

Furthermore, the rapid growth of information and communication technologies has increased the volume of information available to organizations, making effective information management more critical than ever. Despite the availability of information resources, many development programs continue to experience setbacks due to the inability to properly organize, manage, and utilize information for sustainable planning and implementation. This situation raises concerns about the extent to which information management contributes to the achievement of sustainable development goals and the challenges that hinder its effectiveness. Consequently, there is a need to examine the role of information management in promoting sustainable development and to determine how effective information management practices can enhance development outcomes. Therefore, the objective of this study is to investigate the role of information management in achieving sustainable development.

2.0 Literature Review

The Sustainable Development Goals (SDGs) in 2015, the United Nations introduced 17 Sustainable Development Goals (SDGs) to address global challenges such as poverty, climate change, and inequality. These goals provide a framework for nations to implement sustainable policies and practices. Challenges in achieving sustainable development like climate change (rising global temperatures threaten ecosystems and human livelihoods), resource scarcity (overconsumption of natural resources leads to depletion and environmental degradation) and economic inequality (disparities in wealth distribution hinder social progress). Future prospects governments, businesses, and individuals must collaborate to implement sustainable policies, green technologies, and responsible consumption to ensure a better future for all.

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Nigeria's university education plays a crucial role in sustainable development by fostering innovation, research, and human capital development (Ofor-Douglas, 2023). Nigeria's universities are key drivers of sustainable development, but addressing challenges like funding and digital access is essential for long-term progress (Muhammad & Ruwah, 2019; Quaye & Adenigbagbe, 2025). An overview of its impact:

1. **Contribution to National Development**
   - Universities provide **skilled professionals** in fields like engineering, medicine, and environmental science.
   - Research institutions drive **technological advancements** and policy recommendations for sustainability.
2. **Sustainable Education Policies**
   - Government initiatives like **TETFUND** support infrastructure development and research funding.
   - Education reforms aim to align university curricula with **environmental sustainability goals**.
3. **Challenges in Sustainable University Education**
   - **Funding Gaps** – Limited financial resources affect research and infrastructure.
   - **Digital Divide** – Unequal access to technology hinders e-learning and innovation.
   - **Policy Implementation Issues** – Weak enforcement of sustainability-focused education policies.
4. **Future Prospects**
   - Expanding digital learning platforms to improve accessibility.
   - Strengthening industry-academia partnerships for sustainable research.
   - Enhancing government funding to support green initiatives in universities.

Integrating information management into sustainability efforts is essential for achieving long-term environmental, economic, and social goals. Organizations can enhance efficiency, improve accountability, and drive impactful environmental change.

Why it Matters

Data-Driven Decision Making: Information management enables organizations to collect and analyze sustainability-related data. Businesses can track carbon emissions, energy consumption, and waste management to optimize eco-friendly practices.

Transparency & Accountability Proper data management ensures accurate reporting on sustainability initiatives. Companies can meet global standards like the Global Reporting Initiative (GRI) and Sustainable Accounting Standards Board (SASB).

Efficient Resource Utilization: Digital tools help organizations monitor and optimize resource use, reducing waste. Smart technologies improve energy efficiency and supply chain sustainability.

Enhancing Environmental Monitoring: IoT devices, sensors, and satellite imaging provide real-time environmental data. This information helps governments and businesses respond to climate challenges effectively.

Supporting Green IT & Sustainable Infrastructure: Sustainable data management reduces carbon footprints by optimizing cloud computing and data storage. Renewable energy sources for data centers contribute to eco-friendly IT operations.

Strategies for Effective Information Management

Policy Frameworks and Regulations: Governments must establish robust policies that ensure responsible data use in sustainability projects. Regulations like the EU's General Data Protection Regulation (GDPR) set standards for ethical data collection and management, ensuring transparency and accountability in environmental research.

Capacity Building and Digital Literacy: To maximize the benefits of information management, businesses must invest in employee training programs that foster digital literacy. Universities and professional institutions should integrate sustainability-focused IT courses to prepare future leaders for the digital age.

Leveraging Technology for Sustainable Solutions: Advanced technologies such as cloud computing, blockchain, and AI enhance efficiency in sustainability efforts. AI-powered data analytics help businesses predict environmental trends, while blockchain-based carbon tracking ensures accountability in climate-related initiatives.

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The Role of Information Management in Sustainable Development

Enhancing Decision-Making: Data-driven policies are essential for guiding sustainable initiatives. Governments and organizations rely on accurate data analytics to assess environmental changes, predict resource needs, and implement effective conservation strategies (Shaddick et al., 2025). For instance, AI-powered climate models help policymakers develop disaster preparedness plans and mitigate environmental risks by generating more accurate forecasts and simulations (Adegbite et al., 2024; Al-Raeei, 2024).

Improving Efficiency in Resource Utilization: Sustainable business practices leverage information management to optimize resource use. Smart grids, enabled by IoT technology, help regulate energy consumption, reducing waste and lowering carbon footprints (Günes, 2023). Similarly, digital tracking systems enhance supply chain transparency, ensuring ethical sourcing and efficient distribution of goods (Udeh et al., 2024; Porkodi & Kesavaraja, 2024).

Promoting Transparency and Accountability: Open data initiatives strengthen corporate responsibility by making sustainability reports accessible to the public. Companies can demonstrate their commitment to sustainable development by sharing environmental impact assessments and corporate social responsibility (CSR) strategies (Sayilir et al., 2025). Blockchain technology further enhances transparency by creating immutable records of ethical business practices, ensuring that ESG data is secure, traceable, and resistant to manipulation (Tygart, 2024; Balaji & Rahman, 2025).

Challenges in Information Management for Sustainability

Data Security and Privacy Concerns: The increasing reliance on digital platforms raises concerns about **cybersecurity risks** and unauthorized data access. Organizations must implement strong security measures to protect sensitive sustainability-related data. Failure to safeguard information can lead to breaches, exposing confidential environmental research or financial records.

Digital Divide and Accessibility Issues: While technology enhances sustainable development, unequal access to digital tools creates disparities. Developing economies often lack the infrastructure needed to support advanced information systems, limiting their ability to participate in global sustainability efforts. Bridging this gap requires investments in digital literacy programs and infrastructure development.

Integration of Emerging Technologies: The adoption of AI, cloud computing, and big data in sustainability efforts requires technical expertise and investment. Many organizations struggle to integrate these technologies due to a lack of skilled professionals or high implementation costs. Encouraging innovation through funding and capacity-building initiatives can overcome these barriers.

3.0 Methodology

This study takes a conceptual research approach, where literature gathered relevant authorities from both online and offline. This allows for the gathering of relevant information on the subject area based on current literature.

4.0 Conclusion

Information management is a driving force behind sustainable development. By leveraging digital tools, businesses and governments can optimize resource use, enhance transparency, and promote informed decision-making. Overcoming challenges such as cybersecurity threats and accessibility barriers requires proactive investment in policy frameworks, technology, and education. As the world embraces digital transformation, prioritizing effective information management is essential for building a more sustainable future.

Information management plays a critical role in driving sustainability across governance, business, education, and environmental conservation. As the world faces increasing challenges such as climate change, resource depletion, and economic inequality, the need for efficient data collection, analysis, and utilization has never been more urgent (Valenzuela, 2025; Magableh et al., 2024). By reaffirming the importance of information management, organizations can enhance efficiency, improve accountability, and drive impactful environmental change through data-driven decision-making and transparent reporting (World Commission on Environment and Development, 1987; Shaddick et al., 2025).

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Suggestions

Based on the observations of the study on the Role of Information Management in Achieving Sustainable Development, several suggestions can be made to enhance the effectiveness of information management practices in supporting sustainable development goals. First, organizations, governments, educational institutions, and development agencies should invest significantly in modern information and communication technologies that facilitate the efficient collection, storage, processing, dissemination, and utilization of information. Access to accurate and timely information enables informed decision-making, reduces uncertainties, and improves the implementation of sustainable development initiatives. There is also a need to strengthen information infrastructure, particularly in developing regions where inadequate technological facilities often limit access to critical information resources. Expanding internet connectivity, digital libraries, data centers, and information-sharing platforms will promote knowledge dissemination and foster innovation necessary for sustainable growth.

Capacity building should also be prioritized. Stakeholders must be trained in information literacy, data management, digital skills, and knowledge-sharing practices to maximize the benefits of information systems. Continuous professional development programs will equip individuals and organizations with the competencies required to manage information effectively and respond to emerging development challenges. Governments and institutions should establish clear policies and regulatory frameworks that support information governance, transparency, accountability, data security, and ethical information use. Such policies will enhance public trust, encourage collaboration among stakeholders, and ensure that information resources are utilized responsibly for sustainable development purposes.

Collaboration among public institutions, private organizations, research bodies, and civil society groups should be encouraged to facilitate information exchange and knowledge sharing. Strategic partnerships can help generate reliable data, promote innovation, and provide solutions to environmental, economic, and social challenges. Open access to research findings and development-related information should also be promoted to support evidence-based policymaking and informed public participation. Moreover, organizations should adopt integrated information management systems that support monitoring, evaluation, and reporting of sustainability initiatives. Effective information management enables institutions to track progress, identify gaps, measure outcomes, and make necessary adjustments to achieve long-term sustainability objectives. Finally, efforts should be made to promote a culture of information sharing and knowledge management within organizations and communities. When information is treated as a valuable strategic resource, it contributes to improved productivity, innovation, resource conservation, and sustainable socioeconomic development.

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DIGITAL TOOLS AND SECRETARIAL PROFESSIONALS' PRODUCTIVITY IN OSUN STATE POLYTECHNIC, IREE

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Abstract

The study investigates the roles of digital tools in enhancing secretarial professionals' productivity in Osun State Polytechnic, Iree. The study adopted descriptive survey design. The population of the study consisted of 50 secretarial staff in Osun State Polytechnic, Iree. A structured questionnaire was utlized to gather data. The reliability of the instrument was established using test re-test method to analyze data collected using Pearson's Product Moment Correlation with a co-efficient of 0.71. Both descriptive and inferential statistics were used to analyze the data collected. Findings revealed that digital tools such as software that produces printer-based products, e-mail facilities, telecommunication gadgets, internet facilities, among others, are available in Osun State Polytechnic, Iree which enabled secretarial staff to manage and process information effectively and contribute significantly to the growth of the institution. It was concluded that advances in technology and availability of digital tools such as internet, e-mail, videoconferencing etc have made information and communication processes a lot easier for secretarial staff. It is recommended, among others, that secretarial staff should always be ready and open-minded to acquire additional training/skills development, bearing in mind that changes occur frequently in the line of their chosen career to be up-to-date in the use of digital tools in their profession.

Keywords: Digital tools, Secretarial Professionals, Productivity.

1.0 Introduction

The 21st century has witnessed a lot of advancement both in science and technology. This advancement has been growing rapidly since the end of Second World War both in manufacturing, aviation, medicine, engineering, finance and administration, such advances have affected significantly all aspects of life. Digital technologies have also impacted on the processes and procedures in modern day offices and the performance of secretarial professionals/staff in the office. The modern technologies in the 21st century have revolutionized all profession worldwide including secretarial practice. Agbatogu et al (2018) notes that digital technology has been a significant tool in almost all human endeavours. Technology is providing the tools that are revolutionalizing the role of secretarial professionals from that of information recorders to business strategists making them much more critical to the success of an enterprise. According to Uzoka (2022), digital tool is the harnessing of electronic technology in its various forms to improve the operations and profitability of the business as a whole.

The introduction of sophisticated digital technology in the office like computers, internet, word processors and other information technology resources coupled with new management techniques have altered old work habits in the office and triggered off a new business orientation thus making moribund the older methods of business transaction (Nwaokwa & Okoli, 2022). This technology is concerned with the aspect of managing and processing information through the use of electronic computers and computer software to convert, store, protect, process, transmit and retrieve information. It is the handling and processing of information for use by means of electronic and communication gadgets such as computers, cameras, telephones, zoom, google workspace, etc. Digital tool has increased the prospect of doing office work and conducting business more efficiently and in a much globally competitive way. The workplace has transformed into a modern environment because of digital technology, and everything has been facile. Going then into the details of these roles played by digital tools in the modern office work environment is highly germane.

Secretarial functions everywhere in the world have undergone a lot of technical changes. As a result, digital tools which give the secretarial staff the opportunity to increase their efficiency abound. Many office functions and secretarial duties which were previously done manually have been mechanized (Nwaokwa & Okoli 2022). In the contemporary work environment, employers are in search for secretarial staff who possessed knowledge, skills and competencies that would enhance better job performance. As such the development of high level of efficacy in digital technology will affect the

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success of the secretary's job performance in the ever increasing information-based environment. Digital tools have drastically changed the office functions, jobs are now done in a new way. Information could be transferred, stored, retrieved and processed for onward transmission with the use of digital technology. As opined by Nwaokwa and Okoli (2022), many secretarial staff possess digital technological skills required in the various offices and this has greatly affected their performance. The role of office automation is to increase the organizational productivity by redefining the office work, improve the quality and accuracy of output.

For an office secretary, office automation reduces the stress of role overload/identification; it affects the perceived status and job satisfaction and it has a significant influence on the workers' feelings towards the organizational goals. The introduction and development in digital technology have changed the methods and procedure of doing office work by the Secretarial staff. Thus, the diversities of these office technologies require the secretary to possess new skills and sub-skills in digital technology to enable him/her to be relevant in the modern office. According to Okwuanaso and Obayi (2023), Digital technology has posed challenges to secretaries as they communicate in the present day office. In the past, secretaries' functions were performed manually such that documents and records were maintained on papers, stored in files and drawers. The consequences of global development in the modern information and communication technology area, calls for corresponding development of new skills in office communication by all secretaries and office managers. It is crucial for secretarial staff to understand the increasing demand for technological and digital skills and knowledge. It is as a result of this background that this study was conducted to determine the role of digital tools on the productivity of secretarial professionals in Osun State Polytechnic, Iree, Osun State.

Statement of the Problem

In recent time, the job productivity of secretarial staff in tertiary institutions seems to be on the downward trend. This is because some secretarial staff could not meet up with the performance standard already set for them. The downward trend in the job productivity of secretarial staff in Osun state Polytechnic, Iree could be attributed to several factors, which include poor work incentives, unfriendly working environment, inadequate secretarial skills, utilization of digital tools among others. The contemporary offices had been surrounded by digital technology therefore it has changed the role and responsibilities of secretarial staff. This implies that if secretarial staff will perform their job according to the prescribe standard such staff must have been able to possess requisite technological skills and received up to date training on how to use digital technology in the offices. Observation also revealed that some secretarial staff in Osun state Polytechnic, Iree find it difficult to make use of latest technology to perform their duties in their offices. It was against this background that this study investigated the role of digital tools and secretarial productivity in Osun State Polytechnic, Iree, Osun State, Nigeria.

Objectives of the Study

The main objective of this study is to examined the roles of digital tools on enhancing secretarial professionals' productivity in Osun State Polytechnic, Iree. It sought to:

1. Identify the digital tools available for secretarial functions in Osun State Polytechnic, Iree.
2. Examine the extent of usage of digital tools by secretaries in Osun State Polytechnic, Iree.
3. Determine the level of secretarial professionals in Osun State Polytechnic, Iree.

Research Questions

The following research questions guided the study.

1. What are the available digital tools for secretarial functions in Osun State Polytechnic, Iree?
2. To what extent do secretaries utilize digital tools in Osun State Polytechnic, Iree?
3. What is the level of secretarial professionals' productivity in Osun State Polytechnic, Iree?

Research Hypothesis

Ho1: There is no significant relationship between utilization of digital tools and secretarial productivity in Osun State Polytechnic, Iree.

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2.0 Literature Review

Digital Technology

Digital technologies are new innovations in offices that enable the discharge of office functions by secretarial staff more rapidly and efficiently. The emergence of this technology in modern day organizations has challenged the occupational skills of secretarial staff (Nwaokwa & Okoli, 2022). These technologies have recently revolutionized office skills and rendered some skills such as transcription skills, typing on the manual typewriter obsolete and has also given rise to previously unknown skills such as webpage design, desktop publishing, networking, internet skills in modern organizations. This development has obviously challenged the skills and functions of secretaries (Onoja, 2020).

Digital technology has not only changed our personal lives but has completely change the world of business and no industry is an exception (Li, 2020). Utilizing digital technology and the internet in business activities with the aim of significantly increasing productivity and efficiency. The modern world of high technology could not have come about except for the development of computer. New technologies have opened up a new era in managing information/communication through the techniques of automation and this has enhanced communication systems. Information technology has made secretarial job more competitive. One of the main causes of poor performance among secretarial staff in most organizations is their abject lack of digital technology skills. Many of them do not possess digital technology skills required in the various offices and have continued to negatively affect their general performances. Lack of skills in the area of webpage design, desktop publishing, office application, networking, proficiency in accessing the internet, among secretaries in government offices have often been a source of worry to the management of such organizations.

Among the latest technology that is deemed useful in office workplace are the automation and information technology (Ahmad, 2014). Some of the information or communication technologies worth adopting are Desktop Video Chat, Video Conferencing, and Online Visual Collaboration tools. Telephone communications and computer-process controls are among the technologies that involved the most rapid changes. Some more modern office technological gadgets include smartphones, faster Windows operating systems like Windows 7 and 8, laptops and tablets. These technologies can help boost the service of companies. These modern technologies incorporate powerful and low-cost microelectronic devices that are capable of increasing productivity in the offices when efficiently used by the employees (Mark, 2017).

In the early years of the 20th century, offices had bulky computers with only a few with an internet connection, cumbersome wires and oversized fax machines and copiers. This time, in just more than 15 years from then, those were already out-dated. They were already replaced with flat screens, wireless devices and high-tech conferencing system. The World Bank Group (2015) further categorizes technologies as smart machines, smart devices, and smart techniques. Smart machines refer to the advanced robots and machine learning. The smart devices refer to the personal computers, laptops, mobile networking, and smartphones. The smart techniques refer to cloud computing, big data and data analytics. The digital tools are further classified into three regarding how it enables the labor markets. The three categories of digital tools are transactional tools, complementary tools, and matching tools. The transactional tools are those that enable buyers and sellers of various goods and services to transact business with increased efficiency and transparency (World Bank Group, 2015). The complementary tools include the various software and hardware that may offices now use; while the matching tools refer to the medium through the internet and mobile networks that enable the matching of workers with jobs or tasks at different parts of the world. Ten years from now, it is expected that modern technology will be more advanced such as multilingual and sensory-recognition software that will make work more efficient (Pfano, 2016).

Digital Tools

Digital tools are software, online platforms and internet-based resources that use electronic and computerized technology to perform specific tasks, mange processes, improve efficiency, and facilitate work in an organization. Digital tools include communication platforms (email, instant messaging, video conferencing), collaboration software (cloud storage, shared documents), project management tools, productivity suites (like Google Workspace or Microsoft 365) for creating and managing

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documents, and automation tools like robotic process automation (RPA) to streamline tasks. These tools improve efficiency, teamwork, and information sharing, supporting a digital workplace.

According to Morze et al (2025), digital tools types are; Communication & Collaboration: Email & Instant Messaging: Tools for direct and quick communication, such as Gmail or Slack. Video Conferencing: Platforms for virtual meetings and face-to-face interactions, like Zoom. Cloud Storage & Document Sharing: Systems like Google Drive or Microsoft OneDrive allow for real-time collaboration on documents and file storage. Productivity Suites: Integrated packages like Google Workspace and Microsoft 365 provide tools for email, calendars, documents, and more. Project & Task Management: Tools designed to help schedule, organize, delegate, and track tasks to ensure projects are completed on time. Intranets: Internal platforms for sharing information and resources within an organization. Automation & Business Process Tools: Robotic Process Automation (RPA) tools that automate repetitive tasks, freeing up human workers for more complex duties.

3.0 Methodology

Descriptive research design was used for the study. This design was appropriate because it enables the researcher to describe the existing situation the way it occurs without manipulation of any variable. The population of the study consisted of 50 secretarial staff in Osun State Polytechnic, Iree. In view of the size of population, the entire figure was used therefore, no sampling was done. The instrument used for data collection was titled 'Digital Tools and Secretarial Productivity Questionnaire (DTSPQ)'. The instrument which has 37 items was constructed on 4-point scale to elicit information on digital tools and secretarial productivity in Osun State Polytechnic, Iree. In order to ascertain the content and construct validity of the instrument for the study, the researcher ensured that the questionnaire covered the research questions of the study and then subjected the draft to the scrutiny of experts in Office Technology and Management Department. The reliability of the instrument was established using test re-test method. The instrument was administered to all secretarial staff working in Osun State Polytechnic, Iree. Data collected were correlated using Pearson's Product Moment Correlation and co-efficient of 0.71was obtained. The instrument was administered to the respondents with the aid of one trained research assistant. Data collected were analyzed using descriptive statistics of mean and standard deviation. The hypothesis was tested using t-test at an alpha level of 0.05. A null hypothesis is accepted if `the calculated t-value (t-cal) is greater than the critical or t-table value at 0.05 level of significance. On the other hand the null hypothesis is rejected if the calculated t-value is equal to or less than the t-critical or t-table value at 0.05 level of significance.

4.0 Results

Research Question 1: What are the available digital tools for secretarial functions in Osun State Polytechnic, Iree?

Table 1: Respondents mean ratings on digital tools available for secretarial functions in Osun State Polytechnic, Iree (N = 50)

S/N	Digital tools that are available for secretarial functions in Osun State Polytechnic, Iree are:	$\bar{x}$	SD	Remark
1	Software that produces printer-based products	3.20	1.02	Available
2	Networking devices	3.32	1.06	Available
3	Telecommunication gadgets	3.83	1.10	Available
4	E-mail facilities	3.40	1.43	Available
5	Video-conferencing	3.46	0.98	Available
6	Word processing facilities	2.67	0.89	Available
7	Database management resources	2.73	0.89	Available
8	Desktop 57publishing software	2.78	0.92	Available
9	Voice mail facilities	2.63	0.92	Available
10	Spreadsheet program	2.95	0.83	Available
11	Photocopiers that sort out pages of documents	3.11	0.78	Available
12	Micrographics	2.61	0.72	Available
13	Electronic typewriters with visual display	1.43	0.35	Not Available
14	Electronic calendar scheduling	2.88	0.89	Available
15	Dictating machine	3.35	1.32	Available
16	Digital Signature	3.55	1.28	Available

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17	Task management	1.37	0.31	Not Available
18	Virtual assistant	2.67	0.76	Available
19	Automated workflow platform	1.76	0.41	Not Available
20	Corporate secretarial software	1.79	0.27	Not Available

Table 1 shows result of 20 digital tools that are available for secretarial functions in Osun State Polytechnic, Iree. The results indicate that 16 of them with mean ranging from 2.61 to 3.83 are available in Osun State Polytechnic, Iree, while four item that is; electronic calendar scheduling (1.43), task management (1.37) among others were not available. Digital devices found to be available in the offices include; software that produces printer-based products (3.20) networking devices (3.32), telecommunication gadgets (3.83), E-mail facilities (3.40), Video-conferencing (3.46), Word processing facilities (2.67), Database management resources (2.73) among others.

Research Question 2: To what extent do secretaries utilize digital tools in Osun State Polytechnic, Iree?

Table 2: Respondents Mean Ratings on the extent to which secretaries utilize digital tools for secretarial functions in Osun State Polytechnic, Iree (N= 50)

S/N	The extent to which secretaries utilize digital tools are:	$\bar{x}$	SD	Remark
21	To improve communication	3.75	1.31	High Extent
22	To better organization	3.68	1.34	High Extent
23	For task management	3.10	0.80	High Extent
24	To increase access to information and resources	3.09	0.86	High Extent
25	To fostered collaboration	3.58	1.39	High Extent
26	To support for learning and education	3.26	0.77	High Extent
27	To facilitate knowledge sharing	3.27	0.95	High Extent
28	To perform personal tasks	3.01	0.93	High Extent
29	To automate repetitive processes	3.07	0.76	High Extent
30	To enhance efficiency and productivity	3.03	0.67	High Extent

Table 2 shows result of 10 items on extent which secretaries utilize digital tools for secretarial functions in Osun State Polytechnic, Iree. The results indicate that all the items are of high extent of utilization with mean ranging from 3.01 to 3.75. This implies the secretaries utilize digital tools in Osun State Polytechnic, Iree to a high extent.

Research Question 3: What is the level of secretarial professionals' productivity in Osun State Polytechnic, Iree?

Table 3: Respondents Mean Ratings on the level of secretarial productivity in Osun State Polytechnic, Iree (N= 50)

S/N	The level of secretarial productivity in Osun State Polytechnic, Iree are:	$\bar{x}$	SD	Remark
31	Increase in carrying out secretarial functions	3.23	0.75	Agreed
32	Secretaries can streamline tasks	3.26	0.73	Agreed
33	Secretaries perform tasks more accurately	3.30	0.76	Agreed
34	Secretaries can perform strategic duties	3.24	0.94	Agreed
35	Secretaries are more efficient in meeting organization	2.88	1.18	Agreed
36	Improvement in data management	3.43	0.74	Agreed
37	Enhance seamless communication	3.51	0.70	Agreed

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The result of Table 3 shows that all the seven items on the level of productivity in Osun State Polytechnic, Iree were accepted by the respondents. This indicated that the respondents agreed that there is increase in the level of productivity of secretaries in Osun State Polytechnic, Iree due to the utilization of digital tools. This is because all the items mentioned obtained mean values that are greater than 2.50 which is the cut off point for acceptance.

Hypothesis One: There is no significant relationship between utilization of digital tools and secretarial productivity in Osun State Polytechnic, Iree.

T-test Summary of the relationship between digital tools and secretarial productivity

Gender	N	Mean	Standard Deviation (S.D)	T-cal(t)	T-crit.	Degree of Freedom (df)	Level of Significance (p)	Decision
Digital tools	50	3.57	7.22	3.72	1.98	147	<0.05	Rejected
Secretarial productivity	50	3.44	7.62					

Table above presents the results of the relationship between digital tools and secretarial productivity. The results reveal that there was a significant relationship between digital tools and secretarial productivity (t-cal = 3.72, t-crit. = 1.98, df = 147, $p<0.05$). The table also indicates that digital tools (Mean = 3.57; S.D. =7.22) is significantly higher than the secretarial productivity (Mean = 3.44; S.D. = 7.62). Hence, the null hypothesis which stated that there no relationship between digital tools and secretarial productivity is hereby rejected.

Discussion of Findings

Finding of the study revealed that offices in Osun State Polytechnic, Iree are equipped with majority of the digital tools identified in the study. From table 1, out of 20 digital tools that are supposed to be in the institution offices, 16 of them were actually available. This means that the institution on her part has done well by providing the needed digital tools that could enhance the job productivity of secretarial staff in the office. In this era of information and technological age, offices in institutions are expected to be fully equipped with necessary digital tools. This finding is in line with the submission of Edwin (2018) who posited that contemporary offices are supposed to be equipped with but not limited to the following: digital clock, dictation machine, printer, scanner, label maker, computer, projector and so on.

Finding of the study showed that digital tools are greatly utilize by secretaries in Osun State Polytechnic, Iree. From table 2, the utilization of digital tools to increase the job productivity of secretaries was of high extent. The reason for this was because the mean score ranging from 3.01 to 3.75 which indicate high extent to which secretaries utilize digital tools for secretarial functions such as improve communication, better organization, manage tasks, increased access to information and resources and so on. This finding is in support with Nwaokwa and Okoli (2022) in their study which revealed that digital technology influenced the performance of secretaries in much different ways. The finding of the study again supports Buseni (2023) who discovered that the usage of computer, telecommunication and video techniques positively and significantly related to productivity of public sector secretaries in Bayelsa State. Also, the finding of the study is in line with Odion and Iyamu (2021) who reported that ICT skills did contribute to secretaries' job performance in tertiary institutions in Delta State.

Finding of the study revealed that there is significant relationship between utilization of digital tools and secretarial productivity in Osun State Polytechnic, Iree. The reason for this finding could be attributed to the availability of digital tools for secretarial staff in carrying out their duties in Osun State Polytechnic, Iree. This finding is in line with Abosede and Akintola (2015) who found in their study that the utilization of ICT facilities gives optimum performance to secretary's job. Similarly, this finding supports Dosumu, Bukki and Akintola (2017) who stated that the effect of office automation is to increase the organizational productivity by redefining the office work, improve the quality and accuracy of office output. Also, the finding of the study is in line with the outcome of the study conducted by Oloore and Adepoju (2019) which discovered that availability and utilization of new office technology tools improve the job performance of confidential secretaries.

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5.0 Conclusion

Based on the findings of this study, it was concluded that there are enough available digital tools in offices in Osun State Polytechnic, Iree for secretarial staff to effectively carryout their duties. Again, a conclusion was drawn that the level at which secretaries utilize digital tools are very high, which also increased their level of productivity. Also, it was concluded that the use of digital tools has brought about significant relationship in the job productivity of secretaries, which implies that those who were able to utilize digital tools to discharge their duties performed better.

Recommendations

Based on findings of this study, the following recommendations were made:

1. Government should provide more digital tools that are capable of enhancing job productivity of secretaries in the current digital age.
2. Institution should ensure relevant training programmes are in place to expose secretaries to effective utilization of all digital devices that are available in various offices in the institution so as to improve their job productivity.
3. Opportunities should be made available to secretaries to acquire relevant digital skills by government and the institution so as to update their knowledge and keep them abreast of the current trend in the secretarial profession.

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OFFICE TECHNOLOGY AND MANAGEMENT STUDENTS' PERCEPTION ON THE APPLICATION OF ARTIFICIAL INTELLIGENCE TO ACADEMIC ACTIVITIES IN PLATEAU STATE POLYTECHNIC

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Abstract
*This paper examines the perception of Office Technology and Management (OTM) students on the impact of Artificial Intelligence (AI) on students' academic activities in the Plateau State Polytechnic, Barkin Ladi, Plateau State. Descriptive survey research design was adopted. All 82 Higher National Diploma II Students in the department of OTM, Plateau State Polytechnic, Barkin Ladi during the 2024/2025 academic session were purposively selected for the study based on the assumption of their perceived expertise in AI tools usage. Three research questions guided the study. A well-validated questionnaire with 4-point rating was used for data collection. Descriptive analysis of Mean ($\overline{X}$) and Standard Deviation (SD) were used to analyse the data. The study found that OTM students perceive adoption of AI-driven tools as enhancing engagement and personalized learning, fostering better time management, and improving learning efficiency of students in the polytechnics. Based on the findings, the study concluded that OTM students in Plateau State Polytechnic perceived AI to be having positive influence on their academic activities despite the challenges associated with the application of the technologies. It was recommended that **the** polytechnic authorities and lecturers should integrate AI tools into teaching and learning activities to enhance academic performance of Office Technology and Management students.*

Keywords: Students' Perception; Artificial Intelligence; Academic performance; Office Technology and Management Students

1.0 Introduction

Office Technology and Management (OTM) programme is an academic and professional discipline that prepares students for effective management of business offices. OTM programme in the Polytechnics plays a crucial role in the development and shaping of human capital and fostering innovation across various industries. Academic programmes in tertiary institutions, including OTM, are expected to produce high-quality graduates who will become prominent leaders and skilled workforce in their respective fields. High academic performance often indicates quality educational process that produces high quality manpower for national development. With the trend in technological advancement, adoption of new technologies, including AI seem to be considered viable for impacting academic activities and performance of OTM students.

As AI technologies continue to evolve, their role and impact is expected to become more critical in shaping the future of society and the global economy. Application of Artificial Intelligence is one of the most important challenges facing this era, as it has become an integral part of our lives. Artificial intelligence has affected all fields, starting with simple computers and culminating (so far) in smartphones and robots (Di Vaio et al., 2020). In tertiary institutions, particularly among Office Technology and Management students, the application of AI has become increasingly relevant due to the technology-driven nature of the discipline. Applying AI to academic activities by the OTM students depends on their perceptions about its usefulness, ease of use, and concerns regarding academic integrity. Plateau State Polytechnic, as a higher educational institution committed to technological

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advancement, provides a suitable context for examining how the OTM students perceive the application of AI in their academic activities. Understanding these perceptions will be beneficial for polytechnic authorities, educators/lecturers, and educational institutions in promoting the integration and responsible use of AI tools in academic activities. Based on this, the study investigates the OTM students' perceptions on the application of AI technologies to academic activities in Plateau State Polytechnic.

Problem Statement

Artificial Intelligence (AI) technologies are generally perceived to be transforming various areas of life, including offering students opportunities to improve learning and academic performances. The increasing availability of AI-powered tools seems to provide students with technologies that can influence the way they approach academic tasks. Consequently, many higher institutions are witnessing a growing integration of AI into teaching and learning processes. Despite the numerous benefits associated with AI, there are still concerns regarding its use among students for academic activities. While some students perceive AI as a valuable academic support tool, others may view it with skepticism due to concerns about reliability, accessibility, and potential misuse. Students' perceptions play crucial role in determining their willingness to adopt and effectively apply these technologies for academic purposes. Most existing studies on AI usage focused on populations other than OTM students in the Polytechnics whose programme is closely associated with technology and office automation. In Plateau State Polytechnic, the extent to which OTM students perceive AI as useful, beneficial, or problematic in their academic activities remains largely unknown. This lack of empirical information creates a gap in knowledge that may hinder efforts by lecturers and educators, as well as management of the educational institutions to develop appropriate strategies for integrating AI into academic activities. It is against this background that this study seeks to investigate OTM students' perception of the application of Artificial Intelligence to academic activities in Plateau State Polytechnic. The study will specifically find answers to the following questions:

1. What is the impact of Artificial Intelligence on academic performance of students in Plateau State Polytechnics as perceived by the OTM students?
2. What is the impact of Artificial Intelligence on academic activities in Plateau State Polytechnic as perceived by the OTM students?
3. What are the challenges associated with adoption of Artificial Intelligence in academic activities?

2.0 Literature Review

Artificial Intelligence

Artificial Intelligence (AI) is a subfield of computer science dedicated to understanding human thought and processes through information systems (Wang et al., 2024). AI, also referred to as machine intelligence by Ali et al. (2024), is an area of computer science where machines are programmed with the ability to perform intelligent tasks that are usually undertaken by humans. It is concerned with the development of intelligent systems that is capable of engaging in human-like processes and activities such as learning, adapting, reasoning and problem-solving, self-correction, and decision-making (Popenici et al., 2017; Crompton & Burke, 2023). According to Wang et al. (2024), AI technologies include expert systems, machine learning, deep learning techniques, fuzzy logic, genetic algorithms, and intelligent agents. It involves Computers and machines using techniques to understand, analyze, and learn from data through specifically designed algorithms.

According to Ali et al. (2024), AI has been founded as an academic discipline since the 1950s and since then, it has been significantly researched in areas such as Natural Language Processing (NLP), learning, reasoning and various knowledge domains. More recently, AI has been transformed with the expansion of its research beyond computer science, with recent developments drawing from broad areas such as psychology, linguistics, and philosophy. Consequently, AI technologies are increasingly being applied to various fields including education to facilitate training in various subjects, languages, and to support teaching and learning activities. Differing AI technologies that can be applied to educational processes include ChapGPT, Grammarly, Alexa, and MicrosoftCopilot, as well as some adaptive learning platforms such as DreamBox Learning and Twinkl Boost (Sasikala & Ravichandran,2024; Oludele, et al. 2025).

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The study was based on Technology Acceptance Model (TAM). This model is an extension of Ajzen and Fishbein's Theory of Reasoned Action developed by Fred Davis and Richard Bagozzi. The acceptance, adoption and positive utilization of AI tools by Office Technology and Management students would largely depend on their perceptions about their usefulness and/or otherwise. According to the Technology Acceptance Model (TAM), the perceived benefits and usefulness stimulate interest and intention to use, which will eventually translate to the actual usage (Ma & Liu, 2005; Ogrezeanu, 2015). TAM is one of the most widely used models on the acceptance and usage of technology. Technology Acceptance Model is an information systems theory that models how users come to accept and use a technology. TAM postulates that the acceptance of technology is predicted by the users' intention, which is determined by their perception on the usefulness and benefits of such technologies as well as their perception on ease of its use.

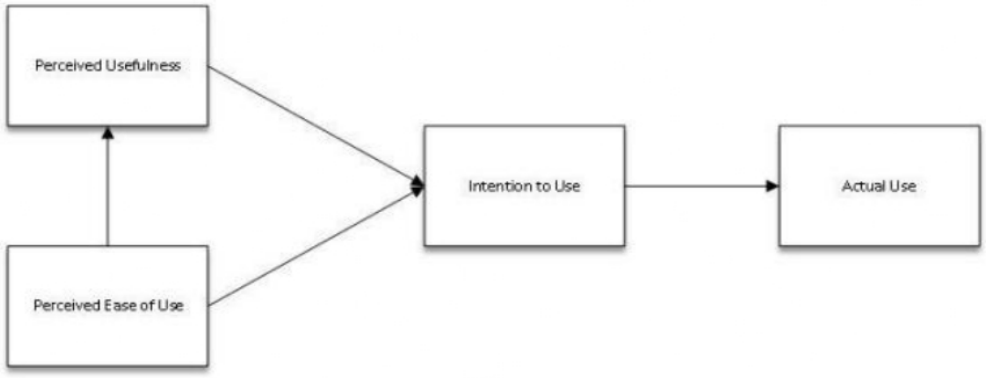


Figure 1: Technology Acceptance Model (Marikyan & Papagiannidis, 2026).

Impact of Artificial Intelligence to Teaching-Learning Activities

The impact of AI technology in today's world permeates every aspect of life, including education, driving efficiency, innovation, and connectivity. Alshater's (2022) opined that applying AI technology can positively contribute to achieving high academic performance in tertiary education students.

Utilization of AI-driven tools enhances personalized learning. AI tools provide access to different types of resources on a particular topic for the students. This, in turn, boosts academic performance of the students (Chen et al. 2020). Chen et al. further stated that artificial intelligence is impacting learning quality in terms of providing different types of online teaching classes and online learning methods. In recent times online teaching classes and the online learning processes have become much trendier. The students can get more opportunities while attending online classes as online classes give more scope to the students to learn more ingredients in one topic. Online learning methods provide the students with different types of hi-tech teaching methods for a better understanding of the topic for the students. The online teaching methods are also available for the students to answer the queries they have, so the students do not feel difficulty while studying a topic or they can easily get the answer of their queries at any time of the day whenever they want. Similarly, in Panigrahi (2020), it was reported that utilization of AI tools in teaching-learning processes fosters digital efficiency which reduces the time required for teaching-learning tasks.

In addition to this, AI tools provide students who miss any class with the recording which can be played at any time of the day. Oyeyemi, et al. (2024) reported that implementing AI in higher education institutes enables students to learn at their different pace thus enhancing learning capacities of students up to a large extent. According to Umeanwe (2024), application of AI to learning has enhanced student engagement and understanding of complex academic concepts, boosts motivation for increased academic productivity, and encourages independent learning for quality learning outcomes. In Eden et al. (2024), the integration of AI in education presents a wide range of opportunities to enhance learning experiences, improve student outcomes, and promote educational equity and inclusion. The study further explores the challenges of applying AI in educational process. The authors opined that such challenges and ethical considerations must be carefully navigated to ensure

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responsible and equitable use of AI technologies in educational settings. Using AI-powered tools such as ChatGPT, Khan Academy AI, and other personalized tutoring Apps, can give students instant access to explanations and thus expected to enhance academic performance. AI tools, as observed, lay the base for literacy, skill development, technological advancements, and the utilization of resources for efficiency and growth (Oyeyemi, et al., 2024). Also, Vieriu and Petrea (2025) reported that AI offers significant benefits including improved academic outcomes, enhance student engagement, and personalized learning.

Perceptions on Application of Artificial Intelligence to Academic Activities

The ubiquity of Artificial Intelligence, which has generated different perceptions and views regarding its benefits in educational process, triggered the study of Ibrahim et al. (2024). The study was conducted among teachers from public and private universities in Nigeria. The study reported that applying AI to education was perceived not harmful, and that the perception significantly affects utilization of diverse AI tools in educational assessment. The study however, mentioned the need to ensure ethical, inclusive and equitable use of AI tools in educational processes. The study of Tokdemir Demirel (2024) investigated the use and perceptions of university students towards the use of AI tools for academic writing. The study used qualitative method to collect data amidst 72 graduate level students in social science programmes in Turkish Universities. The study reported that the students' perceptions on usefulness of AI for academic work revealed worry and concern about the reliability, accuracy and precision of AI-generated content. Dependence on AI tools was as perceived as potentially undermining independent critical thinking and research skills of the students. Setiadi et al. (2025) conducted the research investigating how students perceive the integration of AI technology in learning academic writing. The study was qualitative and conducted among 27 English students at Universitas Muhammadiyah Makassar. The study reported that the students' perceptions on the usefulness of AI tools for learning and academic writing are primarily positive.

Challenges Associated with Application of Artificial Intelligence to Academic Activities

Although reviews of recent studies indicates that there are positive opinions and reports on the impact of AI on general academic activities and performance of students as discussed above, some scholars presented the negative perspectives. Pedro et al. (2019) presented various challenges in applying AI to educational processes. These include AI potentials to deepen the existing inequalities as marginalised and disadvantaged populations are likely to be excluded from its usage for education purpose. Excessive reliance on AI was reported to be capable of hindering critical thinking and creativity in students, as well as hampering development of problem-solving skills (Lee, Hwang, & Chen, 2022).

In a similar vein, applying AI to teaching-learning activities poses the challenge of dehumanized learning experience that lacks personal touch and connections (Shyroka, Bilchuk & Piven, 2023). This can easily affect students' engagement, motivation, and overall academic performance. The risk of cheating and examination malpractices is another challenge of AI in education. Umeanwe (2024) reported that over-reliance on AI technology can prevent deep learning and lack of deeper understanding of necessary fundamental concepts. These can negatively affect learning outcomes and sustainable academic achievements. According to Amadasun, et al. (2024), students can get around the monitoring features of AI-provisioned systems and engage in dishonest behaviour such as accessing forbidden resources through the use of AI-driven tools and virtual computers. Integrity of students' academic performance can be easily compromised with access to and use of AI, especially during examinations. Also, there are other ethical concerns associated with the usage of AI technologies by students. Academic integrity may be compromised where students submit AI-generated work without proper acknowledgement of the original author (Balalle & Pannilage, 2025). There is also the risk of both students and teachers becoming overly dependent on AI-driven tools for academic activities which may be significantly disrupted in the event of any technical failures (University Canada West, 2025).

3.0 Method

Descriptive survey research design was adopted for the study. Descriptive survey deals with opinions, perceptions and attitudes being sought (Agboola, 2018). The study was a survey of Higher National Diploma (HND) II Students in the department of Office Technology and Management, Plateau State Polytechnic, Barkin Ladi during the 2024/2025 academic session. All the 82 HND II students were purposively selected for the study based on the assumption of their perceived expertise in the usage of AI tools. The instrument for data collection was a structured questionnaire constructed by the

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researchers and tagged "Office Technology and Management Students' Perception on the Application of Artificial Intelligence to Academic Activities in Plateau State Polytechnic (OTMPAAIAAPSP)." The instrument, structured in 4-point rating scale with response modes of Strongly Agree (SA), Agree (A), Disagree (DA) and Strongly Disagree (SD), was duly validated by three experts from Plateau State Polytechnic, Barkin Ladi. The reliability test of the instrument yielded a Cronbach value of 0.78, indicating that the instrument was reliable for data collection. Descriptive analysis of Mean ($\overline{X}$) and Standard Deviation (SD) were used to analyse the data for answering the research questions.

4.0 Results

Table 1: OTM Students' perception of the positive impact of Artificial intelligence on academic performance

S/N	ITEMS	$\overline{X}$	SD	Remark
1.	Artificial intelligence enhances students' engagement and interactions with academic content.	3.08	1.02	Agree
2.	Artificial intelligence improves OTM student's understanding of complex academic concepts.	3.06	1.01	Agree
3.	Artificial intelligence provides motivation for high academic productivity	2.72	0.65	Agree
4.	Artificial Intelligence enhances independent learning that enables students to complete assignments more efficiently for higher academic performance.	3.67	0.53	Strongly Agree
5.	AI enhances learning capabilities of students.	3.22	0.95	Agree
6.	AI provides access to online tutorials that enhance time management in learning activities	3.14	0.82	Agree
7.	Artificial intelligence gives global access to quality education for students.	3.47	0.88	Agree
8.	Artificial Intelligence can effectively provide solutions and recommendations for learning challenges.	3.00	1.01	Agree
	Weighted average	3.17	0.86	Agree

Source: Field Survey, 2025

Table 1 shows the Mean and Standard Deviation of responses on the positive impact of Artificial Intelligence on academic performance as perceived by OTM students in Plateau State Polytechnics, Jos. The Table reveals that the students perceive Artificial Intelligence as having positive impact on academic performance with the grand mean of 3.17. The table shows that the students perceive the strongest positive impact of AI on its ability to enhance independent learning that enables them to complete assignments more efficiently, which leads to higher academic performance (S/N 4, Mean = 3.67). The table also reveals that impact of AI in students' motivation for high academic productivity is perceived to be lower (S/N 3, Mean = 2.72). Other Mean responses ranging from 3.00 to 3.47 reveal that OTM students perceive that AI enhances students' engagement and interactions with academic content (3.08), improves students; understanding of complex academic concepts (3.06), enhances learning capabilities of students (3.22), and enhance time management in learning activities (3.14), as well as providing solutions and recommendations for learning challenges (3.00).

All items in Table 1 have standard deviations ranging from 0.53 to 1.02. This means that the responses of the respondents are not widespread as they are close to the mean. On the whole, the weighted mean of 3.17 and standard deviation of 0.86 indicate agreement to the positive impact of Artificial intelligence on OTM students' academic performance in Plateau State Polytechnics. This implies that Artificial Intelligence is perceived to have positive impact on OTM students' academic performance in the Polytechnics.

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Table 2: OTM students' perception of negative impact of AI on academic activities

S/N	ITEMS	$\overline{X}$	SD	Remark
9.	Reliance on Artificial Intelligence for learning hinders critical thinking	3.53	1.15	S. Agree
10.	Excessive reliance on AI for learning can hinder students' creativity	2.58	0.99	Agree
11.	Reliance on AI-generated solutions can negatively affect development of problem-solving skills in students	3.09	0.77	Agree
12.	AI can prevent deep learning and hinder deeper understanding of fundamental academic concepts	2.91	0.89	Agree
13.	Integrating AI into academic activities can deepen the existing inequalities by excluding less privileged students from its usage for education purpose	2.88	0.94	Agree
14.	AI encourages academic dishonesty and plagiarism	3.87	1.05	S. Agree
15.	AI generated information may be less accurate leading to misinformation that can negatively affect academic competence	2.76	0.82	Agree
	Weighted average	3.08	0.94	Agree

Source: Field Survey, 2025

Data in Table 2 show the mean and standard deviation of perceptions of OTM students on negative impact of AI on academic activities in the Polytechnics. The table reveals that respondents strongly perceive that reliance on AI for learning hinders students' critical thinking as well as encourages academic dishonesty with mean responses of 3.53 and 3.87 respectively (S/N 9 & 14). All other items have their mean responses ranging from 2.58 to 3.09, which all fall within the positive response, showing that OTM students perceive AI to have negative impact on their academic activities. The table shows that OTM students perceive reliance on AI to be hindering students' creativity (2.58), affects development of problem-solving skills (3.09), hinders deeper understanding of academic concepts (2.91), and leading to misinformation (2.76), as well as widening existing inequalities against the less privileged (2.88).

All the items in Table 2 have standard deviation ranging from 0.77 to 1.15. This means that the responses of the respondents are not widespread as they are close to the mean. On-the-whole, the weighted average of 3.08 and standard deviation of 0.94 indicate that all OTM students perceive all constructs as negative impacts of AI on academic activities in the Polytechnics.

Table 3: Challenges associated with application of AI to Teaching-Learning Activities

S/N	ITEMS	$\overline{X}$	SD	Remark
16.	Marginalisation and exclusion of disadvantaged population from AI usage for education purpose	2.81	0.98	Agree
17.	Ethical concerns in form of academic dishonesty	3.62	0.79	S. Agree
18.	Disruption of learning processes in the event of technical failure, when there is over-dependence on AI-driven tools for teaching-learning activities	3.53	1.09	S. Agree
19.	Challenge of dehumanized learning experience that lacks personal touch and connections	2.67	1.24	Agree
20.	Increased risk of cheating and examination malpractices that can compromise the integrity of academic performance.	2.27	1.05	Disagree
	Weighted average	2.98	1.03	

Source: Field Survey, 2025

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Table 3 presents the challenges associated with the application of AI to teaching-learning activities as perceived by OTM students of Plateau State Polytechnics, Jos. The results show a weighted average mean of 2.98 with a standard deviation of 1.03, indicating overall agreement that students recognise challenges associated with AI usage in academic contexts. The highest-rated challenges were ethical concerns in the form of academic dishonesty (Mean = 3.62; SD = 0.79) and disruption of learning processes in the event of technical failure due to overdependence on AI tools (Mean = 3.53; SD = 1.09). These findings suggest that students are concerned about the integrity risks posed by AI and the potential interruptions that may arise if technology-dependent systems fail. Other perceived challenges include marginalisation and exclusion of disadvantaged populations (Mean = 2.81; SD = 0.98) and the challenge of dehumanized learning experiences that lack personal touch (Mean = 2.67; SD = 1.24).

These results reflect broader issues of digital inequality and reduced human connection in AI-mediated learning. Interestingly, respondents disagreed that AI significantly increases the risk of cheating and examination malpractices (Mean = 2.27; SD = 1.05). This shows that while they recognize AI's role in academic dishonesty generally, they may perceive traditional factors (such as student misconduct during physical examinations) as greater threats to academic integrity than AI alone. The standard deviations (0.79–1.24) indicate a moderate level of dispersion, with some variability in opinions, especially regarding the perception of dehumanized learning.

Discussion

This study investigated the perceptions of OTM students of Plateau State Polytechnics, Jos, on the impacts and challenges associated with the application of Artificial Intelligence (AI) to academic activities. The findings are discussed under three dimensions: positive impacts, negative impacts, and challenges.

On positive impacts of AI on academic performance, the findings in Table 1 revealed that students generally perceive AI as having positive influences. The strongest positive impact was AI's role in enhancing independent learning and enabling efficient completion of assignments. This finding is consistent with the findings of Umeanwe (2024), Oyeyemi et al. (2024), and Vieru and Petrea (2025), that AI enhances students' ability to learn autonomously and productively. However, the study also showed that AI was perceived to have a weaker influence on students' motivation (Mean = 2.72), suggesting that while it supports performance, intrinsic motivation remains dependent on human and environmental factors.

The findings on students' perception on limtations of AI on academic performance reveal significant concerns that AI encourages academic dishonesty and hinders critical thinking. Other perceived drawbacks include reduced creativity, weakened problem-solving skills, misinformation, and widening inequality between privileged and disadvantaged students. These findings align with the opinion of Lee, Hwang and Chen (2022) that AI usage in education, despites its numerous benefits, can undermine academic integrity if not properly regulated. The study warned that excessive dependence on AI can erode creativity and diminish deeper understanding, thereby weakening intellectual development.

Regarding the challenges of AI usage in academic activities, the leading concerns were ethical issues such as academic dishonesty and technical disruptions due to over-dependence on AI-driven tools. The risk of dehumanized learning experiences that lack personal connection was also perceived. These concerns reflect the arguments of Pedro, et al. (2019), Shyroka, Bilchuk and Piven (2023), and Balalle and Pannilage (2025) that there exist the risks of technical vulnerabilities in AI systems, and that it is important to ensure equitable and human-centered learning despite technological advancements.

On the whole, the findings revealed that OTM students perceive AI as a double-edged tool in education. On one hand, it promotes independent learning, efficiency, and comprehension; on the other, it raises ethical concerns, risks of dependency, and inequalities in access. This dual perception highlights the importance of balancing AI's potential benefits with safeguards that address its risks.

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5.0 Conclusion

Based on the findings, it can be concluded that Artificial Intelligence significantly influences academic activities positively among OTM students of Plateau State Polytechnics, Jos. Students' perception about AI as having a positive impact on academic performance can influence their adoption of AI tools for educational purposes. Also, students' awareness of the potential risks and challenges associated with the usage of AI in teaching-learning activities will positively moderate their adoption and usage of AI for their academic works. A balanced approach of combining AI with human-centered teaching practices is essential for maximizing its benefits and minimizing its risks. However, further researches on ways of mitigating the challenges associated with application of AI to academic activities can be necessary.

Recommendations

In light of the findings and the conclusion, the following recommendations are made:

1. The polytechnic authorities and lecturers should integrate AI tools into teaching and learning activities to enhance academic performance of Office Technology and Management students.
2. Management of educational institutions should ensure that AI tools are made accessible to all students, especially OTM student, to enhance the influence of AI on academic activities.
3. Educational institutions should establish backup and IT support systems in order to mitigate the challenges associated with application of AI to academic activities.

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ROLES OF ELECTRONIC RECORD MANAGEMENT IN DIGITAL ECONOMY

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Abstract

Electronic Record Management (ERM) plays a critical role in the digital economy, where data serves as a fundamental asset. This article explores the principles, emerging technologies, roles, benefits, and challenges of ERM in contemporary digital ecosystems. Grounded in core principles such as integrity, accessibility, security, backup and disaster recovery, metadata management and other principles, ERM ensures accurate documentation, regulatory compliance, and informed decision-making. Emerging technologies such as block chain, artificial intelligence, and cloud computing are reshaping how organizations capture, store, and retrieve electronic records, enhancing transparency, automation, and scalability. ERM serves multiple roles, including enhancing operational efficiency, ensuring legal and regulatory compliance, strengthening data security, supporting remote collaboration and others. The benefits are substantial: enhanced efficiency and productivity, improves accuracy and reduced errors, cost saving, enhanced security and compliance, environmental benefits etc,. However, ERM implementation also faces significant challenges, including cyber security risks, data privacy concerns, and resistance to change. As the digital economy evolves, the effective management of electronic records becomes essential for organizational resilience and innovation. Appropriate recommendations were made to mitigate the challenges listed. This article underscores the need for adaptive strategies that integrate technological advancements with robust policy frameworks to fully realize the potentials of ERM.

Keywords: Electronic, Records, Management, Digital and Economy

Introduction

In the contemporary digital economy, information has become one of the most valuable strategic resources for organizations, rivalling traditional assets such as capital and labour. The exponential growth of digital technologies, coupled with the widespread adoption of information and communication technologies (ICTs), has transformed how organizations create, store, access, and utilize information (Castells, 2010). As organizations increasingly rely on digital platforms to conduct their operations, the effective management of electronic records has emerged as a fundamental requirement for organizational sustainability, accountability, and competitive advantage.

The rapid digitalization of business processes, public administration, and service delivery has led to an unprecedented volume of records being generated and stored in electronic formats. These records serve as evidence of transactions, support decision-making processes, and ensure transparency and regulatory compliance (ISO 15489-1, 2016). Consequently, Electronic Record Management (ERM) has become a critical component of modern organizational infrastructure. ERM refers to the systematic and controlled management of records throughout their life cycle from creation and receipt to maintenance, use, and final disposition within a digital environment (Duranti & Rogers, 2019).

Effective ERM systems play a pivotal role in enhancing operational efficiency by streamlining workflows, improving information accessibility, and reducing the time and cost associated with manual record handling. Moreover, they support compliance with legal and regulatory frameworks by ensuring the authenticity, reliability, integrity, and usability of records over time (Shepherd & Yeo, 2003). In an era characterized by data breaches, cyber threats, and increasing privacy concerns, ERM systems also contribute significantly to information security and risk management by implementing access controls, audit trails, and data protection mechanisms.

Beyond efficiency and compliance, electronic record management enables organizations to leverage information as a strategic asset. Well-managed digital records facilitate data analytics, knowledge sharing, and evidence-based decision-making, thereby supporting innovation and organizational learning in the digital economy (McLeod & Childs, 2013). Additionally, the adoption of ERM systems

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has been shown to reduce operational costs associated with physical storage, duplication of records, and information loss, while also supporting environmental sustainability through reduced paper usage.

Despite its numerous benefits, the implementation of ERM is not without challenges. Issues such as technological obsolescence, lack of skilled personnel, resistance to change, and inadequate policy frameworks continue to hinder effective electronic record management in many organizations (Ngoepe & Saurombe, 2016). Furthermore, emerging technologies such as cloud computing, artificial intelligence, and blockchain are reshaping the ERM landscape, presenting both new opportunities and complex challenges for record managers and policymakers. Against this backdrop, this article examines the growing significance of electronic record management in the digital economy. It explores the core principles of ERM, its roles and benefits, the challenges associated with its implementation, and the emerging technologies that are shaping its evolution. By doing so, the study underscores the importance of robust ERM systems as a foundation for effective governance, accountability, and sustainable development in an increasingly digital world.

Principles of Electronic Record Management

Electronic Record Management (ERM) encompasses the systematic control of records that are created, received, maintained, used, and disposed of in digital form. As organizations increasingly adopt digital platforms for documentation, communication, and service delivery, the establishment of robust ERM systems has become essential rather than optional. Effective ERM supports information integrity, enhances operational efficiency, and ensures compliance with legal and regulatory requirements in digitally driven environments (ISO 15489-1, 2016; McLeod & Childs, 2013). The core principles of ERM provide a conceptual and practical framework for developing policies, procedures, and technological solutions that enable organizations to manage electronic records effectively throughout their lifecycle.

Integrity: The integrity of electronic records is fundamental to their reliability and evidential value. Records must remain accurate, complete, and unaltered from the time of their creation until their final disposition. Technical mechanisms such as checksums, hashing algorithms, and digital signatures are commonly used to verify data integrity during storage and transmission. In addition, version control systems play a critical role in tracking modifications while preserving original content, thereby ensuring transparency and accountability. Periodic audits and monitoring processes further strengthen trust in electronic records by confirming their authenticity and completeness over time (Duranti & Rogers, 2019).

Accessibility: Accessibility is a key principle of ERM, as electronic records must be readily retrievable by authorized users when needed. Timely access to accurate information supports organizational efficiency, informed decision-making, and regulatory compliance. The use of standardized file formats, consistent naming conventions, and well-structured indexing systems enhances searchability and retrieval. Moreover, intuitive and user-friendly system interfaces enable employees to locate and use records efficiently, reducing delays and improving service delivery (Shepherd & Yeo, 2003).

Security: Ensuring the security of electronic records is critical in an era marked by increasing cyber threats and data privacy concerns. ERM systems must protect records against unauthorized access, alteration, disclosure, or destruction. Security measures such as encryption for data at rest and in transit, multi-factor authentication, and role-based access controls are widely recognized as best practices for safeguarding sensitive information. These controls not only reduce the risk of data breaches but also support compliance with data protection and privacy regulations (Ngoepe & Saurombe, 2016).

Backup and Disaster Recovery: Backup and disaster recovery are essential components of effective electronic record management. Digital records are vulnerable to risks such as system failures, cyberattacks, and natural disasters, which can result in significant data loss. Implementing regular and automated backup schedules, maintaining off-site or cloud-based storage, and routinely testing disaster recovery procedures help ensure business continuity. A well-defined disaster recovery plan enables organizations to restore critical records promptly, minimizing operational disruptions and preserving institutional memory (McLeod & Childs, 2013).

Metadata Management: Metadata management provides the contextual information necessary to understand, retrieve, and manage electronic records effectively. Metadata elements such as the creator, date of creation, document type, and access rights enhance record organization and facilitate efficient retrieval. Properly managed metadata also supports long-term preservation, interoperability, and compliance by ensuring that records remain meaningful and usable over time (ISO 15489-1, 2016).

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Compliance with Standards: Adherence to recognized records management standards is a cornerstone of effective ERM practice. International standards, particularly ISO 15489, provide structured guidance on the creation, capture, classification, and management of records. Compliance with these standards promotes consistency, accountability, and legal admissibility of records, while also aligning organizational practices with global best practices in records management (International Organization for Standardization, 2016).

Training and Awareness: The successful implementation of ERM systems depends not only on technology but also on the knowledge and commitment of personnel. Regular training and awareness programs ensure that employees understand ERM policies, procedures, and their individual responsibilities in managing electronic records. Continuous professional development helps staff adapt to emerging technologies, evolving regulatory requirements, and changing organizational needs, thereby fostering a culture of good records management practice across the organization (Shepherd & Yeo, 2003).

Emerging Technologies in Electronic Records Management

Electronic Records Management (ERM) has undergone substantial transformation in recent years, driven by rapid advancements in digital technologies. As organizations generate and rely on increasingly large volumes of electronic records, traditional records management approaches have proven insufficient to address emerging challenges related to scalability, security, accessibility, and regulatory compliance. Consequently, contemporary ERM systems are increasingly integrated with advanced technologies such as cloud computing, artificial intelligence (AI), machine learning (ML), blockchain, mobile solutions, and data analytics. These technologies are reshaping how electronic records are created, stored, managed, and utilized across organizational contexts (McLeod & Childs, 2013; Duranti & Rogers, 2019).

Cloud Computing: Cloud computing has emerged as one of the most influential technologies in modern ERM systems. Cloud-based ERM solutions provide scalable and flexible storage infrastructures that allow organizations to manage large volumes of records without the need for extensive on-premises hardware. By enabling remote access to records through secure internet connections, cloud platforms support collaboration across departments and geographic locations. In addition, cloud-based ERM systems reduce operational and maintenance costs while offering automated updates, backup services, and disaster recovery capabilities, thereby enhancing both efficiency and resilience (Gartner, 2022; Duranti & Rogers, 2019).

Artificial Intelligence and Machine Learning: Artificial intelligence and machine learning technologies are increasingly being applied to automate and enhance core ERM functions. AI-driven tools can classify records, extract metadata, and apply retention schedules with minimal human intervention. Machine learning algorithms analyse large datasets to identify patterns and relationships, improving the accuracy of information retrieval and supporting predictive decision-making. By reducing reliance on manual processes, AI and ML help minimize human error, increase processing speed, and improve consistency in records management practices (McLeod et al., 2019; ISO 16175, 2020).

Blockchain Technology: Blockchain technology offers a decentralized and tamper-resistant approach to managing electronic records. By recording transactions in an immutable distributed ledger, blockchain enhances the integrity, authenticity, and traceability of records. This feature is particularly valuable in sectors where trust and evidential value are critical, such as healthcare, finance, and public administration. Blockchain-based ERM systems can provide verifiable audit trails and reduce the risk of unauthorized alteration, thereby strengthening accountability and compliance with regulatory requirements (Lemieux, 2016).

Mobile Solutions: The widespread adoption of remote and hybrid work models has increased the demand for mobile-friendly ERM systems. Mobile solutions enable users to capture, access, and manage records using smartphones and tablets, regardless of their physical location. This mobility supports real-time collaboration, improves workflow efficiency, and ensures continuity of records management activities outside traditional office environments. When properly secured, mobile ERM solutions enhance productivity while maintaining compliance with organizational policies and data protection standards (Shepherd & Yeo, 2003).

Data Analytics: The integration of data analytics into ERM systems allows organizations to derive meaningful insights from their records repositories. Analytical tools can be used to monitor usage patterns, assess compliance risks, and identify inefficiencies in records management processes. Predictive analytics, in particular, supports proactive decision-making by identifying trends and

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forecasting future information needs. By transforming records from passive storage assets into sources of strategic intelligence, data analytics strengthens the role of ERM in organizational planning and performance management (McLeod & Childs, 2013).

Roles of Electronic Records Management in the Digital Economy

In the contemporary digital economy, Electronic Records Management (ERM) has emerged as a critical organizational function. ERM refers to the systematic control of records in electronic form throughout their life cycle, including creation, use, maintenance, and disposition, to ensure efficiency, reliability, and security (International Organization for Standardization [ISO], 2016). As organizations increasingly rely on digital information assets, effective ERM practices play a pivotal role in supporting operational performance, compliance, and strategic decision-making.

Enhancing Operational Efficiency: ERM systems significantly enhance operational efficiency by automating the organization, storage, and retrieval of electronic records. Automation reduces the time and effort required to locate information, minimizes duplication, and streamlines workflows across departments. As a result, employees can focus on value-adding activities, thereby improving productivity and overall organizational performance in a digital-first environment (Smallwood, 2019).

Ensuring Legal and Regulatory Compliance: The growing complexity of data protection laws and regulatory frameworks has increased the need for robust records management practices. ERM systems support compliance by enabling secure storage, enforcing retention and disposition schedules, and maintaining audit trails that document record access and modifications. These features are particularly vital in highly regulated sectors such as healthcare, finance, and government, where failure to comply with statutory requirements can result in legal penalties and reputational damage (Duranti & Rogers, 2019).

Strengthening Data Security: Data security is a major concern in the digital economy, where cyber threats and unauthorized access are increasingly prevalent. ERM systems incorporate advanced security mechanisms, including encryption, role-based access controls, and monitoring tools, to protect sensitive organizational information. By ensuring the integrity, confidentiality, and authenticity of electronic records, ERM contributes to risk mitigation and reinforces organizational trust in digital systems (Upward et al., 2018).

Supporting Remote Collaboration: The adoption of cloud-based ERM solutions has become instrumental in enabling remote and hybrid work arrangements. These systems provide authorized users with secure, real-time access to records regardless of location, facilitating collaboration across geographically dispersed teams. Such capabilities not only support workforce flexibility but also enhance continuity of operations in an increasingly global and digital business environment (ISO, 2016).

Contributing to Environmental Sustainability: ERM also contributes to environmental sustainability by reducing dependence on paper-based records. The digitization of records lowers paper consumption, storage requirements, and associated costs, while reducing an organization's environmental footprint. This transition aligns with broader corporate social responsibility and sustainability initiatives, reinforcing the role of ERM in promoting environmentally responsible business practices (Smallwood, 2019).

Facilitating Strategic Decision-Making: By systematically organizing and categorizing electronic records, ERM systems improve information accessibility and reliability. Timely access to accurate records supports data-driven decision-making, enabling organizations to respond effectively to market changes, regulatory demands, and customer expectations. Consequently, ERM serves not only as an administrative function but also as a strategic asset that enhances organizational agility and competitiveness in the digital economy (Duranti & Rogers, 2019).

The Benefits of Electronic Records Management

The adoption of Electronic Records Management (ERM) systems has become increasingly vital for organizations seeking to remain competitive in the digital economy. ERM systems enable the systematic creation, storage, retrieval, and preservation of electronic records, offering a wide range of organizational benefits. These benefits include enhanced efficiency and productivity, improved accuracy and error reduction, cost savings, strengthened security and regulatory compliance, environmental sustainability, facilitated collaboration, improved disaster recovery, and long-term preservation of records (ISO, 2016; Smallwood, 2019).

Enhanced Efficiency and Productivity: ERM systems streamline records management processes by enabling rapid retrieval and automated organization of digital documents. By reducing the time

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employees spend searching for information, ERM systems improve workflow efficiency and allow staff to focus on core organizational activities. This increased operational efficiency directly contributes to higher productivity and improved service delivery (Smallwood, 2019).

Improved Accuracy and Reduced Errors: Electronic records are less susceptible to common human errors associated with manual record-keeping, such as misfiling, duplication, or illegible handwriting. ERM systems often incorporate standardized metadata, validation mechanisms, and controlled workflows, which enhance the accuracy, consistency, and reliability of organizational information (Duranti & Rogers, 2019).

Cost Savings: The implementation of ERM systems can result in substantial cost reductions by minimizing reliance on physical storage infrastructure and decreasing paper consumption. Additionally, organizations benefit from lower administrative and labour costs associated with manual filing, retrieval, and record maintenance. Over time, these efficiencies translate into measurable financial savings (Smallwood, 2019).

Enhanced Security and Regulatory Compliance: ERM systems provide robust security features, including encryption, role-based access controls, and audit trails, which help protect sensitive and confidential information. These systems also support compliance with legal and regulatory requirements by enforcing retention schedules and documenting record access and modification activities. Such capabilities are particularly critical in highly regulated sectors, where non-compliance can have serious legal and reputational consequences (ISO, 2016).

Environmental Benefits: By significantly reducing paper usage, ERM systems contribute to environmental sustainability and conservation efforts. The shift from paper-based to digital records lowers resource consumption and waste generation, thereby reducing an organization's carbon footprint. This environmental benefit aligns ERM adoption with broader sustainability and corporate social responsibility objectives (Upward et al., 2018).

Facilitated Collaboration: Digital records managed through ERM systems can be securely shared among authorized users across departments and geographical locations. This accessibility enhances collaboration, supports coordinated workflows, and improves the quality and timeliness of decision-making. As organizations increasingly adopt remote and hybrid work models, ERM systems play a crucial role in enabling effective teamwork (ISO, 2016).

Improved Disaster Recovery: ERM systems typically include data backup, redundancy, and disaster recovery mechanisms that protect records from loss due to natural disasters, cyberattacks, or system failures. These features ensure business continuity and safeguard critical organizational information, reducing operational risk in times of crisis (Duranti & Rogers, 2019).

Long-Term Preservation: Compared to physical documents, electronic records are easier to preserve and manage over extended periods. ERM systems support long-term digital preservation through format standardization, migration strategies, and secure storage solutions, ensuring that records remain accessible, authentic, and usable for future reference and accountability purposes (Upward et al., 2018).

Challenges of Electronic Records Management in the Digital Economy

Electronic Records Management (ERM) systems play a critical role in supporting organizational operations within the digital economy. While ERM offers substantial benefits in terms of efficiency, security, and accessibility, its implementation and sustained use present significant challenges. Organizations across sectors continue to encounter technological, organizational, legal, and financial barriers that can undermine the effectiveness of ERM systems if not adequately addressed (ISO, 2016; Smallwood, 2019).

Technological Limitations: One of the primary challenges associated with ERM implementation is inadequate technological infrastructure. Many organizations, particularly in developing economies, struggle with limited access to reliable hardware, insufficient storage capacity, outdated software, and unstable internet connectivity. These technological constraints hinder the effective deployment, integration, and performance of ERM systems, reducing their potential benefits (Asogwa, 2013).

Cybersecurity Risks: The reliance on digital platforms exposes ERM systems to a wide range of cybersecurity threats, including hacking, ransomware attacks, and unauthorized data access. As electronic records often contain sensitive and confidential information, security breaches can result in severe financial losses, reputational damage, and legal consequences. Ensuring robust cybersecurity measures such as encryption, intrusion detection systems, and continuous monitoring remains a critical challenge for organizations operating in the digital economy (Duranti & Rogers, 2019).

Resistance to Change: Organizational resistance to change is another significant obstacle to the successful adoption of ERM systems. Employees accustomed to traditional, paper-based record-

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keeping practices may be reluctant to transition to electronic systems due to fear of technology, lack of digital skills, or concerns about job security. Overcoming this resistance requires effective change management strategies, continuous training, and management support to foster user acceptance and system adoption (Smallwood, 2019).

Legal and Regulatory Compliance: The management of electronic records is further complicated by evolving and, in some cases, inadequate legal and regulatory frameworks. Inconsistent or outdated legislation may fail to address issues related to digital authenticity, data privacy, and long-term preservation of electronic records. Organizations must navigate complex regulatory environments to ensure compliance with data protection and privacy laws, which can be particularly challenging in cross-border or multinational contexts (ISO, 2016).

Resource Constraints: The implementation and maintenance of ERM systems require substantial financial and human resources. Costs associated with system acquisition, customization, staff training, cybersecurity infrastructure, and ongoing maintenance can be prohibitive, especially for small and medium-sized organizations. Limited budgets often result in under-resourced ERM initiatives, reducing system effectiveness and sustainability over time (Asogwa, 2013)

Conclusion

Electronic Records Management (ERM) has become a fundamental pillar of organizational effectiveness, accountability, and sustainability within the digital economy. Anchored in core principles such as integrity, accessibility, security, metadata management, and compliance with international standards, ERM provides a structured framework for ensuring that electronic records retain their reliability, authenticity, and evidential value throughout their lifecycle (ISO 15489-1, 2016; Duranti & Rogers, 2019). As digital information increasingly underpins organizational operations, effective ERM is no longer a support function but a strategic necessity.

The expanding role of ERM extends beyond record preservation and regulatory compliance to include the enhancement of operational efficiency, risk mitigation, remote collaboration, and data-driven decision-making. By enabling timely access to accurate and trustworthy information, ERM systems support organizational agility and informed strategic planning across both public and private sectors (Smallwood, 2019). Moreover, the transition from paper-based systems to digital records contributes to environmental sustainability and cost efficiency, reinforcing ERM's broader organizational value (Upward et al., 2018).

Emerging technologies including cloud computing, artificial intelligence, machine learning, blockchain, and data analytics are significantly transforming ERM practices. These technologies enhance automation, scalability, security, and analytical capabilities, allowing organizations to manage large volumes of records more efficiently while strengthening transparency and trust. When appropriately governed, such innovations improve interoperability and resilience, positioning ERM systems as enablers of innovation in the digital economy (McLeod & Childs, 2013; Lemieux, 2016).

Despite these advances, the effective implementation of ERM continues to face substantial challenges. Technological limitations, cybersecurity threats, resource constraints, resistance to organizational change, and evolving legal and regulatory requirements remain persistent barriers, particularly in resource-constrained contexts (Asogwa, 2013; ISO, 2016). Addressing these challenges requires sustained investment in infrastructure, skills development, governance frameworks, and change management strategies.

In conclusion, as the digital economy continues to evolve, the strategic adoption and continuous improvement of Electronic Records Management systems are essential for organizational resilience and competitiveness. By aligning ERM practices with established standards, leveraging emerging technologies, and proactively addressing implementation challenges, organizations can fully realize the transformative potential of ERM in supporting sustainable growth, innovation, and long-term accountability in digitally driven environments.

Recommendations

Technological Development: Organizations should prioritize the continuous enhancement of their technological infrastructure, including both hardware and software components, to address and mitigate limitations associated with evolving digital systems. Sustained investment in modern, scalable, and

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interoperable technologies will strengthen operational efficiency and support the effective implementation of Enterprise Risk Management (ERM) frameworks.

Strengthened Security Measures: Given the increasing prevalence of cyber threats such as hacking, data breaches, and ransomware attacks institutions must implement robust and proactive cybersecurity mechanisms. Regular vulnerability assessments, system audits, and the adoption of advanced security protocols are essential to safeguard sensitive records and maintain organizational integrity.

Capacity Building through Training and Retraining: Both governmental institutions and private organizations should establish structured training and retraining programs to equip personnel with the requisite skills and competencies needed in a rapidly transforming digital environment. Continuous professional development initiatives will facilitate smoother transitions, reduce resistance to change, and enhance the overall effectiveness of ERM adoption.

Practicable and Clear Regulatory Frameworks: Governments should enact clear, coherent, and practicable regulations that encourage compliance without imposing unnecessary complexity. Streamlined legislative frameworks will enhance transparency, promote accountability, and foster broader adherence to risk management standards.

Adequate Financial Allocation: Recognizing that financial constraints can impede effective implementation, governmental agencies and business organizations should allocate a defined proportion of their annual budgets or profits toward the development, deployment, and maintenance of ERM systems. Sustainable financial commitment is critical to ensuring long-term success and institutional resilience.

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DATABASE MANAGEMENT SYSTEM (DBMS) AND EFFICIENCY OF OFFICE MANAGERS IN TERTIARY INSTITUTIONS IN EKITI STATE

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Abstract
This study examined effect of database management system and efficiency of office managers in tertiary institutions in Ekiti State. The specific objectives of the paper were to; investigate the roles of database management system on productivity of Office managers, evaluate the effectiveness of database management system in supporting decision making process of office managers. Two research questions were raised in line with the objectives. The survey method of descriptive design was used for the study. The population for the study consisted of 63 office managers working in Federal polytechnic Ado Ekiti (FPA) and Afe Babalola University Ado Ekiti (ABUAD). A self-administered questionnaire was used. Descriptive and inferential statistics were used to analyse the data. The simple percentage, mean and standard deviation were used for the research questions while the Pearson moment correlation coefficient formula was used to analyze the hypotheses. The findings of this study indicate that the adoption and effective use of database management systems have a significant positive effect on the productivity of office managers in tertiary institutions in Ekiti State. In conclusion, DBMS contribute to the efficient organization of records, improved information retrieval, and enhanced accuracy in administrative tasks. It was therefore recommended out of many that the adoption and effective use of database management systems have a significant positive effect on the productivity of office managers in tertiary institutions in Ekiti State.

Keywords: Database Management System, Efficiency, Productivity, Office managers, Tertiary Institutions.

1.0 Introduction

The efficient management of data is essential for the smooth operation of organizations in today's digital age, particularly within the dynamic environment of tertiary institutions. With the proliferation of information and the increasing complexity of administrative tasks, office managers play a pivotal role in coordinating and managing diverse administrative processes within these institutions (Ahmad & Som, 2020). In Ekiti State, Nigeria, home to several tertiary institutions including universities, polytechnics, and colleges of education, the demands placed on secretarial staff are substantial, requiring them to handle vast volumes of data related to student records, staff management, financial transactions, and communication with stakeholders (Ogunlade, 2018).

Database applications are indispensable tools for office managers to effectively carry out their duties. According to Sheffield (2020), a database is a structured collection of information, while Okoli (2020) defines database as software utilized for managing structured records and he further reiterate that office managers require a range of skills to proficiently utilize such applications, including record creation and maintenance, information retrieval, access control, data integrity assurance, and backup data restoration. To harness these applications effectively,
The integration of DBMS into the administrative framework of higher education institutions has empowered secretarial staff to perform their duties more effectively, thereby enhancing overall productivity and organizational performance. From streamlining administrative workflows and improving data accessibility to enhancing communication and ensuring data security, DBMS offers a range of benefits that directly impact the productivity and effectiveness of office managers within higher education institutions (Dakka, Agbejule, Mailafia & Bamgboye, 2020).

Statement of the Problem

The role of secretarial staff within tertiary institutions is indispensable, as they serve as the backbone of administrative operations, facilitating the smooth flow of information and the execution of various administrative tasks. However, Secretarial staff in tertiary institutions face challenges related to outdated and manual data management systems, leading to inefficiencies in data handling, communication, and decision-making. Furthermore, the absence of robust data security measures poses

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a significant threat to the confidentiality and integrity of institutional data, leaving sensitive information vulnerable to unauthorized access and breaches. It has also been deduced that problems arose as a result of ineffectiveness and mismanagement of Database by office managers in organizations, as well as a desire to learn and acquire the skill of effective Database management, such as information leakages, theft, data base alteration, and so on. Hence the study is carried out to examine effect of database management system and efficiency of office managers in tertiary institutions in Ekiti State.

Objectives of the Study

The aim of this study is to examine the effect of database management system and efficiency of office managers in tertiary institutions in Ekiti State. However, the specific objectives are:

i. To investigate the roles of database management system on efficiency of office managers in Tertiary institutions in Ekiti state.
ii. To evaluate the effectiveness of database management system in supporting decision making process of office managers in Tertiary institutions in Ekiti state.

Research Questions

i. What are the roles of database management on efficiency of office managers of office managers in Tertiary institutions in Ekiti State?
ii. How does database management support decision making process in the institution of office managers in Tertiary institutions in Ekiti State?

Research Hypotheses

Ho_1: There is no significant correlation between database management and efficiency of office managers in Tertiary institutions in Ekiti State.

2.0 Literature Review

Concept of Database Management System (DBMS)

A Database Management System (DBMS) is a software application that facilitates the creation, maintenance, organization, and retrieval of data in a structured and efficient manner. DBMS is designed to manage large volumes of data and provide users with the ability to interact with the data through various operations (Mohammed & Tette, 2018). It acts as an intermediary between users, applications, and the actual data stored in databases. A DBMS serves as a technological cornerstone that facilitates the organization, storage, retrieval, and management of data, allowing educational institutions to streamline their processes and elevate their productivity (Sheffield, 2020).

Central to the functionality of a DBMS is its ability to structure data in a systematic manner. This aligns seamlessly with the administrative needs of tertiary institutions. Student records, faculty details, course schedules, and financial data can be efficiently organized into tables, rows, and columns. This structured approach enhances the accuracy and accessibility of information crucial for the decision-making processes of office managers (Ekineh and Adolphus, 2019). The assurance of data accuracy is paramount in educational settings. By enforcing data integrity through constraints and validations, a DBMS ensures that the information stored remains reliable and consistent. For office managers, this translates to the confidence that the data they rely upon for tasks such as enrolment management, scheduling, and resource allocation is accurate and up-to-date (Sheffield, 2020).

The sensitive nature of educational data underscores the necessity of robust security measures. A DBMS provides access controls that are particularly relevant to the discussion on office managers. Access privileges can be tailored, ensuring that only authorized personnel can access sensitive information. This feature safeguards student records, financial data, and other confidential information from unauthorized access (Rohde, Thompson & Gower, 2020). The concept of data independence resonates strongly in the context of managing educational data. Changes in the physical storage structure whether hardware upgrades or database reconfigurations can be carried out without disrupting the functionality of the applications that office managers rely upon daily. This ensures seamless transitions and upgrades, enhancing operational productivity. The query language, often SQL, empowers office managers to interact with the database intuitively. This aligns with the essence of efficient office management. For instance, office managers can swiftly retrieve specific data, such as

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student enrolment figures or faculty availability, to make informed decisions promptly (Rohde et al; 2020).

A database is a logically organized collection of structured data kept electronically in a computer system. A database administrator is usually in charge of a database (DBMS). The data, the DBMS, and the applications that go with them are referred to as a database system, which is commonly abbreviated to just database (Martin, 2018). To make processing and data querying efficient, data in the most common types of databases in use today is often described in rows and columns in a sequence of tables. Data may then be accessed, managed, updated, regulated, and organized with ease. For writing and querying data, most databases employ structured query language (SQL).

Concept of Efficiency of Office Managers

Oyesode (2018) defined a secretary as one who possesses a sound general education and has undergone a prescribed programme of instruction in the areas of secretarial training with appropriate skills, attitudes and competencies required for assuming the roles/duties in an office. The individual must have also acquired both personal and business attributes; for secretarial training involves the process of guiding and initiating learners to acquire necessary skills, facts, knowledge, habits and attitudes that will make the secretary live and work peacefully with others as useful and productive members of the society. The Secretary occupies an indispensable position in the diversified daily activities of the world enterprise and their impact on the development of the Nigerian economy cannot be under-estimated. Many organizations' returns are under pressure. This makes it important that office managers carry out the correct tasks (effective) in the right way (efficient). By working efficiently, more can be produced with the same amount of input (resources). In short, achieving more for lower costs, a higher return and less pressure. Job Productivity means 'doing things in the right way.

The performance as stated by Hunger and Witzel (2017) is an end results of an activity, and an organization productivity is accumulated end results of all the organization's work processes and activities. Managers measure and control Organization Productivity because it leads to better assessment for management, to increase the ability to provide customer value, to improve measures of organizational knowledge, and measure of organization productivity do have an impact on an organization's reputation. When the performance of the organization is assessed, the past management decisions that shaped investments, operations and financing are measured to know whether all resources were used effectively, whether the profitability of the business met or even exceeded expectations, and whether financing choice were made prudently (Shaukat, 2018).

Organization productivity is conducted to support decisions concerning whether program or project should be continued, improved, expanded, or curtailed (Rossi, 2022). The traditional approach to performance measurement is based on productivity measures, including such measures as service inputs and outputs' (Holmes, 2016). In recent years, many organizations have attempted to manage organization productivity using the balanced scorecard methodology where performance is tracked and measured in multiple dimensions such as: financial performance (e.g., shareholder return)-customer service-social responsibility (e.g., corporate citizenship, community outreach) - employee stewardship. As this study focuses on measurement of productivity and effectiveness part of Organizations Productivity, therefore, these concepts are elaborated in detail.

In the academic literature, productivity is defined by many ways, Witzel (2017) looks at the origin of the term and finds that it has two meanings: technical productivity, or ensuring that systems and process work to their optimal level, and total productivity, or ensuring that the organization as a whole is fit to meet its goals. Productivity is a minimum utilization of resources and getting maximum output (Earl, 2019); effectiveness is the extent to which an organization realizes its goal (McClenahen (2016); Oz (2017) defined effectiveness, as the degree to which a goal is achieved; and McClenahen (2017) sees effectiveness as doing the right things to achieve organization goal.

Theoretical Framework

The Technology Acceptance Model

Emerging Database cannot deliver improved organizational effectiveness if it is not accepted and used by potential users. Technology Acceptance Model (TAM) is one of the most successful measurements

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for computer usage effectively among practitioners and academics (Davis, 1989). TAM is consistent with (Rogers, 1983) theory on diffusion of innovation where technology adoption is a function of a variety of factors including; relative advantage and ease of use. Two particular beliefs are addressed through TAM; perceived usefulness and perceived ease of use. Perceived usefulness is defined as being the degree to which a person believes that the use of a system will improve his performance. Perceived ease of use refers to the degree to which a person believes that the use of a system will be effortless. TAM attempts not only for prediction but also for explanation to help researchers and practitioners identify why a particular system may be unacceptable and pursue appropriate steps.

Organizational Model

The research theoretical framework to be applied in this study is based on the model of the organization (Leavitt, 1965). He suggested that an organization consists of four interrelated components: structure, task (strategy), people, and technology. Organization's structure refers to systems of communication, systems of authority, and systems of workflow; organization's strategy can be defined as the establishment of the basic long-term objectives of an enterprise, and the adoption and commitment of resources to a course of action intended to obtain these corporate objectives (Chandler, 1962); People refers to individuals working in the organization and; Technology can be defined as the tools, techniques, and actions.

Empirical Review

Rossi (2022) conducted a study to investigate the effect of implementing a DBMS on the productivity of administrative staff, including office managers, in higher education institutions across India. The quantitative component of the study involved a nationwide survey of 1,258 administrative staff members from 72 universities and colleges that had recently adopted a DBMS. The survey instrument, which was rigorously validated through pilot testing and expert reviews, measured various aspects of productivity, such as task completion time, error rates, and perceived efficiency. The researchers employed advanced statistical techniques, including structural equation modeling and multi-level modeling, to analyze the survey data. The qualitative component of the study involved in-depth semi-structured interviews with 45 administrative staff members from a purposively selected subset of institutions. The interviews explored the participants' experiences, perceptions, and challenges associated with the DBMS implementation. The researchers employed rigorous coding and thematic analysis techniques to analyze the interview data. The study's findings revealed a significant positive correlation between the adoption of DBMS and increased productivity among administrative staff. Specifically, the quantitative data showed a 27% reduction in task completion times and a 39% decrease in error rates after the DBMS implementation. The qualitative data provided rich insights into the factors contributing to these productivity gains, such as better data organization, faster retrieval of information, reduced redundancy in data entry, and improved collaboration and communication facilitated by the DBMS.

Oguejiofor (2024) conducted a comparative study to examine the effect of DBMS on secretarial productivity in private and public tertiary institutions in Nigeria. The study involved a total of 240 office managers, with 120 from private institutions that had implemented DBMS and 120 from public institutions without DBMS. The researchers employed a mixed-methods approach, combining quantitative surveys and qualitative interviews. The survey instrument, which was validated through pilot testing and expert reviews, measured various aspects of productivity, including task completion times, error rates, and perceived efficiency. Additionally, the researchers conducted semi-structured interviews with a subset of 48 office managers (24 from each group) to gather insights into their experiences, perceptions, and challenges related to DBMS usage or lack thereof. The study's findings revealed significant differences in productivity between the two groups. Office managers in private institutions that had implemented DBMS reported higher levels of productivity compared to their counterparts in public institutions without DBMS. Specifically, the survey data showed a 31% reduction in task completion times and a 24% decrease in error rates among office managers in private institutions with DBMS. The qualitative data provided valuable insights into the factors contributing to these productivity differences. Office managers in private institutions cited the availability of better technological infrastructure, more robust training and support programs, and a stronger organizational culture that encouraged the adoption and effective utilization of DBMS as key drivers of their productivity gains. In contrast, office managers in public institutions reported challenges such as

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inadequate training, limited resources, and resistance to change as barriers to adopting DBMS and realizing its potential productivity benefits.

Study of Chapmana and Kihnb (2020) aimed to measure the effect of Databases resources and capabilities on firm performance. The literature has demonstrated the complex relationship between Database integration approaches. They began their analysis by focusing on just one aspect of Database integration, namely in terms of data architecture, commonly referred to as the single database concept. They argue that whilst this particular aspect of integration should be related to perceived system success, the variety of ways in which information might be drawn on in practice means, it provides no strong basis for predicting a link to business unit performance. They used Two types of bureaucracy: Enabling and coercive. They argue that the level of Database integration fosters the four design characteristics that make up an enabling approach to management control. Each of these in turn is related to both perceived system success and business unit performance.

3.0 Methodology

A survey method of descriptive design was used for the study. The population for the study consist of 63 confidential office managers working in Federal polytechnic Ado Ekiti (FPA) and Afe Babalola University Ado Ekiti (ABUAD) because of the manageable size of all the entire element of the population. Total Enumeration technique is adopted for the study sample because of the limited size of population; therefore, the entire population is used for the study. The instrument used for this study is questionnaire. A drafted copy of the questionnaire was given to three experts in the field of Office Technology and Management and later to the researcher's supervisor for criticisms and validations. Corrections and suggestions were adopted and considered while necessary changes were effected to modify the questionnaire. The questionnaire was administered to office managers (respondents) through personal contacts after explaining the purpose of the study to them, then, it was retrieved through the same process. A total number of 63 questionnaires were distributed and all were retrieved. This represents a total of 100%. Five copies of the validated instrument was administered to respondents who were not part of the sample using the test-retest reliability method. The duration between the initial test (administration) and the final administration of the instrument on these selected respondents was two weeks. The result shows a reliability coefficient of 0.87. Data collected were analyzed using, descriptive and inferential statistics were used. The simple percentage method was used for the research questions. The Pearson moment correlation coefficient formula was used to analyse the hypotheses at 0.05 level of significance.

4.0 Results

Research Question One: What are the roles of database management system on efficiency of office managers in Tertiary institutions in Ekiti state?

Table 1: The roles of database management system on efficiency of office managers in Tertiary institutions in Ekiti state.

S/N	ITEMS	RESPONSE									
		SA	%	A	%	D	%	SD	%	Mean	SD
1	Database management systems improve the organization of student records.	3	4.8	59	93.7	1	1.6	-	-	3.03	0.25
2	Using database management tools increases the speed of information retrieval for office managers.	3	4.8	60	95.2	-	-	-	-	3.05	0.21
3	Database management reduces errors in data entry and record keeping.	2	3.2	60	95.2	1	1.6	-	-	3.02	0.22
4	Implementing database management systems enhances the overall efficiency of secretarial tasks.	1	1.6	62	98.4	-	-	-	-	3.02	0.12

Source: Fieldwork, 2026.

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In Table 1, regarding the roles of database management systems on the efficiency of office managers in tertiary institutions in Ekiti State, the results indicate overwhelming agreement among the respondents. For Item 1, 62 respondents, representing 98.5%, agreed that database management systems improve the organization of student records, while only 1 respondent, representing 1.6%, disagreed. In Item 2, all 63 respondents, representing 100%, agreed that using database management tools increases the speed of information retrieval for office managers. Similarly, in Item 3, 62 respondents, representing 98.4%, agreed that database management reduces errors in data entry and record keeping, while 1 respondent, representing 1.6%, disagreed. For Item 4, all 63 respondents, representing 100%, agreed that implementing database management systems enhances the overall efficiency of secretarial tasks.

Research Question Two: How does database management support decision making process in the institution of office managers in Tertiary institutions in Ekiti state?

Table 2: Database management system supporting decision making process in the organization.

S/N	ITEMS	RESPONSE									
		SA	%	A	%	D	%	SD	%	Mean	SD
1	Database management systems provide accurate and up-to-date information for informed decision-making.	-	-	60	95.2	-	-	3	4.8	2.90	0.43
2	The use of database tools allows for quick access to historical data, supporting trend analysis for decision-making.	-	-	60	95.2	-	-	3	4.8	2.90	0.43
3	Database management facilitates the generation of comprehensive reports that aid in strategic planning.	1	1.6	60	95.2	-	-	2	3.2	2.95	0.37
4	The implementation of database systems enables real-time monitoring of key performance indicators for better decision-making.	1	1.6	60	95.2	-	-	2	3.2	2.95	0.37

Source: Fieldwork, 2026.

Table 2, focuses on the support provided by database management systems in the decision-making process within organizations, the results show high levels of agreement among the respondents. For Item 1, 60 respondents, representing 95.2%, agreed that database management systems provide accurate and up-to-date information for informed decision-making, while 3 respondents, representing 4.8%, disagreed. In Item 2, 60 respondents, representing 95.2%, agreed that the use of database tools allows for quick access to historical data, supporting trend analysis for decision-making, with 3 respondents, representing 4.8%, disagreeing. For Item 3, 61 respondents, representing 96.8%, agreed that database management facilitates the generation of comprehensive reports that aid in strategic planning, while 2 respondents, representing 3.2%, disagreed. In Item 4, 61 respondents, representing 96.8%, agreed that the implementation of database systems enables real-time monitoring of key performance indicators for better decision-making, and 2 respondents, representing 3.2%, disagreed.

Testing of Research Hypotheses

$H_0$1: There is no significant correlation between database management and efficiency of office managers in Tertiary institutions in Ekiti State

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Table 3: Correlation between database management and efficiency of office managers in Tertiary institutions in Ekiti state.

		Database management	The efficiency of office managers
Database management	Pearson Correlation	1	.412*
	Sig. (2-tailed)		.000
	N	63	63
The efficiency of office managers	Pearson Correlation	.412*	1
	Sig. (2-tailed)	.000	
	N	63	63

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

Table 3 examines the correlation between database management and the efficiency of office managers. The Pearson correlation coefficient (r = 0.412) indicates a moderate positive relationship between the two variables, with a significance level of 0.000, meaning the correlation is statistically significant.
Table 3 suggests a moderate positive relationship between database management systems and the efficiency of office managers in tertiary institutions, indicating that improvements in database management lead to higher productivity levels.

Discussion

The study revealed that database management systems play a significant role in enhancing the efficiency of office managers in tertiary institutions in Ekiti State. The results indicate that office managers highly agree on the benefits of database management systems in organizing student records, increasing the speed of information retrieval, reducing errors, and improving overall efficiency. For example, 96.8% of respondents agreed that database management systems improve the accuracy and security of sensitive information. This finding aligns with a study by Rossi (2022) who investigated the effect of implementing a DBMS on the productivity of administrative staff, including office managers, in higher education institutions across India and found a significant positive correlation between the adoption of DBMS and increased productivity among administrative staff.

Despite the benefits, the study also identified several challenges associated with the use of database management systems in tertiary institutions. Inadequate training for office managers, technical issues such as system downtime, high costs of implementation, and concerns about data security were reported as significant challenges. These findings are consistent with research by O Oguejiofor (2024), which highlighted similar issues in educational institutions, particularly regarding the high cost of implementing database systems and the need for continuous training to ensure effective use.

Furthermore, the study found a moderate positive correlation between database management and the efficiency of office managers in tertiary institutions. This suggests that improvements in database management systems are likely to result in higher productivity levels. This finding is supported by the work of Chapmana and Kihnb (2020) who found that the integration of database management systems significantly increased staff productivity by streamlining administrative processes and reducing manual workloads. However, the study contrasts with Oguejiofor (2024) comparative study which examined the effect of DBMS on secretarial productivity in private and public tertiary institutions in Nigeria and found a significant differences in productivity between the two groups; office managers in private institutions that had implemented DBMS reported higher levels of productivity compared to their counterparts in public institutions without DBMS. The positive correlation between database management and productivity underscores the importance of investing in these systems to enhance organizational efficiency.

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5.0 In conclusion, the findings of this study indicate that the adoption and effective use of database management systems have a significant positive effect on the efficiency of office managers in tertiary institutions in Ekiti State. DBMS contribute to the efficient organization of records, improved information retrieval, and enhanced accuracy in administrative tasks. Furthermore, the systems support decision-making by providing timely access to reliable data, which aids strategic planning and resource management.

Recommendations

Based on the findings of this study, the following recommendations are made:

1. Institutions should prioritize continuous training programs for office managers and administrative staff on the use of DBMS. This will ensure that staff are well-equipped to handle the technical aspects of the systems and maximize their potential for productivity.
2. Tertiary institutions should invest in robust technical support to reduce system downtime and resolve technical issues promptly. This can be achieved through partnerships with IT firms or by building an in-house team of database specialists.

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EMOTIONAL INTELLIGENCE AS A CATALYST FOR PERSUASIVE COMMUNICATION IN AN ORGANIZATION

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Abstract
This review paper examines the importance of emotional intelligence as a catalyst for persuasive communication in an organization. As a review paper, it highlights the key elements of persuasive communication such as understanding the audience, using evidence, and utilizing rhetoric effectively. The paper also discusses the impact of cognitive biases and emotions on persuasive communication, and the importance of adapting the message to the audience and the context. Additionally, it suggests various strategies such as using storytelling, emotional appeals, and building trust and credibility, to improve persuasive communication skills. The paper concludes that persuasive communication is crucial in today's world, whether in personal or professional contexts, and that developing these skills can help individuals to be more effective communicators and leaders. Emotional intelligence is indeed the most potent weapon which helps boost our self-awareness, self-control, motivation, empathy and social skills, all of which help us to communicate persuasively and effectively. An organization that is emotionally intelligent has employees who are productive, motivated and efficient. It was recommended that organizations should design and implement regular emotional intelligence training programmes aimed at improving employees' self-awareness, self-regulation, empathy, social skills, and motivation. Such training will strengthen employees' persuasive communication abilities and interpersonal effectiveness.
Keywords: *Emotional intelligence, Persuasive Communication, Organisation, Catalyst*

Introduction

Without communication in an organisation, nothing would be accomplished. Instructions could not be given; equipment and supplies could not be ordered; progress could not be measured; and products and services could not be delivered to customers. According to Drucker (2014) the five functions of management; planning, organizing, staffing, leading and controlling – are all dependent on communication. In fact, in surveys of highly successful managers across the nation, the ability to communicate effectively was identified as the most important skill a manager needs for success (Roebuck, 2001). However, studies such as a survey design involving managers and employees in Chinese organizations where it was found that emotional intelligence significantly improved interpersonal communication, employee attitudes, and performance (Goleman 2018). Why would anything so fundamental, so learnable, and so crucial be something we struggle with so much? For one thing, there are those managers whose verbal instructions sound like something from a Gestapo general and whose memos sound like the ironclad laws of a tyrant. While these messages may be understandable, precise and clear, they are not well received and not well embraced by employees. Asking and telling an employee to do something will produce the same result, but asking will not produce the resentment that telling does. Employees like to be treated with respect and dignity, and, if a manager sets the tone and content of communication to do this, it will help develop a more productive and supportive workforce.

Communication is an essential part of human interaction, and the ability to communicate persuasively is a valuable skill in both personal and professional contexts. One of the most influential frameworks for understanding persuasion is Aristotle's Rhetoric. Developed by the ancient Greek philosopher Aristotle, this framework provides a comprehensive guide to the art of persuasion, outlining the key elements and techniques that are necessary to make communication persuasive (Clutterbuck, 2021). Aristotle developed the Rhetorical Theory of Persuasion, which explains how effective communication and persuasion rely on three major appeals: logos, ethos, and pathos. This theory was presented in his work, the Rhetoric. Logos refers to the use of logical arguments and evidence to support a claim. Ethos refers to the speaker's credibility and the audience's trust in the speaker. Pathos refers to the use of

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emotional appeals to influence the audience's attitudes and beliefs. Together, these three elements form the foundation of persuasive communication, and by understanding and applying them, individuals can develop the skills necessary to make communication persuasive. The use of logos, ethos and pathos in persuasive communication is widely accepted and has been extensively studied in the field of rhetoric and communication. Logos, ethos and pathos are used to appeal to the audience's reason, character, and emotions respectively. Logos is based on the use of logical reasoning and evidence to support the claim made by the speaker, ethos is based on the credibility and character of the speaker, and pathos is based on the emotional appeal of the message.

Bad communication practices as observed in many organizations cause a majority of our work problems, not to mention the problems we face at home, or in our personal interactions with others outside of the workplace (Jablin & Putnam, 2021). Simply, we either pass along the wrong information, or we just fail to pass along valuable and correct information. Relationships thrive on communication. Communication has matured and morphed over a relatively short period, changing from typical face-to-face dialogue to the use of innovative and sophisticated technology designed to increase efficiency and effectiveness. We now use technology such as email, text-messaging, social media, and video teleconferencing communication, which has made it easier to communicate, but has become much less personal, and consequently misunderstood. Good leaders know that, providing a culture of openness and good interpersonal relationships will create an environment and culture of trust and the ability to shed dysfunction and the likelihood of people misunderstanding each other, thus providing a true ability to communicate amongst others at every level of the organization. However, communication does not always function like a fine Swiss watch - all communication is complex and multidimensional with plenty of room for conflict and misunderstandings. Boone and Kurtz (2022) believe that, for an organization to be successful, it must have all employees capable of sending and receiving information quickly, clearly, effectively, and accurately. Mistakes caused by miscommunication create damage that may cause good customers and key employees to say, adios.

Persuasive communication in an organization could be influenced by emotional intelligence of employees by enhancing the ability to connect, empathize, and influence others effectively. Emotional intelligence is a convenient phrase with which to focus attention on human talent. Even though it is simple as a phrase, it incorporates the complexity of a person's capability. Salovey and Mayer (1990) first used the expression "emotional intelligence" and described it in terms of four domains: knowing and handling one's own and others' emotions. Other conceptualizations have used labels such as "practical intelligence" and "successful intelligence" (Sternberg, 2016), which often blend the capabilities described by the other psychologists with cognitive abilities and anchor the concepts around the consequence of the person's behavior, notably success or effectiveness.

In an age when relationships between individuals and organizations are getting more and more complex, it is not enough to only have an excellent Intelligence. Although high intelligence offers numerous advantages, managers, supervisors, and employees especially those working in organizations where interpersonal relationships are essential have increasingly recognized that success in the workplace may also depend on the effective use of another vital attribute: emotional intelligence. This is the ability to deal with one's feelings and understand the feelings of others in any given situation, helps one to complement academic. The emotional side of the personality is not only neglected but frequently looked down upon as a hindrance in career success.

The modern theory of Emotional Intelligence (EI) emerged as a response to traditional views of intelligence that focused primarily on cognitive abilities such as reasoning, memory, and problem-solving. Contemporary scholars argue that intelligence extends beyond intellectual capacity to include the ability to recognize, understand, regulate, and effectively use emotions in personal and social contexts. Emotional intelligence has thus become an important construct in psychology, management, education, and organizational studies because of its role in shaping interpersonal relationships, leadership effectiveness, and workplace performance. The modern conceptualization of emotional intelligence was first introduced by Salovey and Mayer in 1990. They defined emotional intelligence as a form of social intelligence involving the ability to monitor one's own emotions and those of others, discriminate among them, and use this information to guide thinking and actions. Their Ability Model views emotional intelligence as a genuine form of intelligence comparable to cognitive intelligence.

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According to this perspective, emotionally intelligent individuals can accurately perceive emotions, use emotions to facilitate thought, understand emotional meanings, and manage emotions effectively. This model is organized into four interrelated branches: perceiving emotions, using emotions to facilitate thinking, understanding emotions, and managing emotions. These abilities enable individuals to navigate complex social environments and make more informed decisions.

The theory gained widespread recognition through the work of Goleman (2018), who popularized emotional intelligence in organizational and leadership contexts in 1995. Goleman expanded the concept beyond cognitive abilities by incorporating personality traits and behavioral competencies that influence workplace success. His Mixed Model of emotional intelligence emphasizes five key dimensions: self-awareness, self-regulation, motivation, empathy, and social skills. Self-awareness refers to the ability to recognize one's emotions and understand their impact on behavior. Self-regulation involves controlling disruptive emotions and adapting to changing circumstances. Motivation pertains to the drive to achieve goals with persistence and optimism. Empathy is the capacity to understand and share the feelings of others, while social skills involve building relationships, managing conflicts, and influencing others effectively. Goleman argued that these competencies are often more important than intellectual ability in determining professional success and effective leadership.

Another significant contribution to the modern theory of emotional intelligence is the Trait Model developed by Ioannidou and Konstantinos (2018). Unlike the Ability Model, which conceptualizes emotional intelligence as a set of cognitive abilities, the Trait Model regards emotional intelligence as a collection of emotional self-perceptions and personality traits. Trait emotional intelligence encompasses characteristics such as emotional expression, adaptability, stress management, empathy, and social competence. This approach suggests that individuals differ in their emotional dispositions, which in turn influence their behavior and interpersonal interactions. Modern theories of emotional intelligence share the common assumption that emotions are not obstacles to rational thinking but rather essential components of effective cognition and behavior. Emotional intelligence enables individuals to understand emotional cues, regulate emotional responses, and use emotions constructively in solving problems and interacting with others. In organizational settings, emotional intelligence has been linked to improved communication, teamwork, conflict resolution, leadership effectiveness, employee commitment, and organizational performance.

The relevance of emotional intelligence has become increasingly evident in contemporary workplaces characterized by collaboration, diversity, and rapid change. Organizations now recognize that employees and leaders who possess high emotional intelligence are better equipped to manage stress, foster positive relationships, and adapt to evolving work environments. As a result, emotional intelligence has become a critical factor in recruitment, leadership development, and organizational training programs.

The theory shows that emotional insensitivity, and lack of ability to understand and manage human emotions our own as well as of those we interact with is a major weakness of highly educated, but narrowly focused specialists and professionals. Despite possessing a high EI rating, success does not automatically follow. Emotions play a very critical role in the overall quality of our personal and professional lives, more critical even than our actual measure of brain intelligence. Tools and technology can help us to learn and master information, BUT nothing can replace our ability to learn, manage, and master our emotions and the emotions of those around us. Emotional intelligence can have a significant impact on our professional career. That is why it's vital to understand what it is, and its importance in the workplace. People have different personalities, emotional capabilities and strengths, and these factors can greatly impact the way they work. This paper therefore reviews emotional intelligence as a catalyst for persuasive communication.

Literature Review

Persuasive Communication

Persuasive communication is the ability to influence and shape the attitudes, beliefs, and behavior of others through effective communication. It is an important skill in today's world for a variety of reasons, including personal and professional success, effective decision-making, and the ability to influence and

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shape public opinion (Roebuck, 2001). the following are the key factors that contribute to persuasive communication importance as outlined by Roebuck (2001):

1. **Personal and Professional Success**: One of the most significant reasons why persuasive communication is important in today's world is that it can lead to personal and professional success. In the workplace, the ability to communicate persuasively can help individuals to achieve their goals, whether it be to persuade a colleague to support their idea, to negotiate a raise, or to close a deal. Additionally, persuasive communication can help individuals to build and maintain relationships, both personally and professionally. For example, being able to communicate persuasively can help individuals to negotiate conflicts and to build trust and understanding with others.
2. **Effective Decision-Making:** Another reason why persuasive communication is important in today's world is that it can contribute to effective decision-making. By being able to communicate persuasively, individuals can present their ideas and arguments clearly and effectively, which can help others to understand and support their position. Additionally, persuasive communication can help individuals to evaluate and analyze information, and to make well-informed decisions.
3. **Influencing and Shaping Public Opinion:** Persuasive communication is also important in today's world because it can be used to influence and shape public opinion. This can be done through various forms of media such as advertising, public speaking, and social media. In today's digital age, it is important for individuals to be able to communicate persuasively in order to influence and shape public opinion on important issues. For example, politicians and public figures use persuasive communication to gain support for their campaigns and policies, while businesses use persuasive communication to market their products and services.

Developing the Techniques to Persuasive Communication

Persuasive communication is the ability to influence and shape the attitudes, beliefs, and behavior of others through effective communication. The ability to communicate persuasively is a valuable skill in both personal and professional contexts. However, many individuals struggle to develop persuasive communication techniques. In this research paper, researcher explored the techniques that can be used to develop persuasive communication skills and discuss strategies that can be used to improve the effectiveness of communication.

Techniques for Persuasive Communication

1. **Understanding the Audience:** One of the most important techniques for persuasive communication is understanding the audience. This includes understanding the audience's needs, values, and interests, as well as their level of knowledge and understanding of the topic. By understanding the audience, individuals can tailor their message to be more effective and relevant (Boone & Kurtz, 2022).
2. **Using Evidence and Logic:** Another technique for persuasive communication is using evidence and logic to support arguments. This includes providing data, statistics, and examples to back up claims, as well as using logical reasoning to connect evidence to the main argument (Boone & Kurtz, 2022).
3. **Building Credibility:** Building credibility is another technique for persuasive communication. This includes highlighting one's qualifications, experience, and expertise, as well as providing references and testimonials. Additionally, building credibility also includes being honest, trustworthy, and transparent in one's communication (Boone and Kurtz, 2022).
4. **Using Emotional Appeals:** Using emotional appeals is another technique for persuasive communication. This includes using storytelling, imagery, and other techniques to create an emotional connection with the audience. By appealing to the audience's emotions, individuals can increase the effectiveness of their message (Boone & Kurtz, 2022).
5. **Creating a call to action:** Creating a call to action is another technique for persuasive communication. This includes ending the message with a specific request or instruction, such as asking the audience to take a specific action or to change their behavior (Boone & Kurtz, 2022).

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6. **Reinforcing the message:** Reinforcing the message is another technique for persuasive communication. This includes repeating the main points of the message, using visual aids and props, and using repetition and rhetorical devices. By reinforcing the message, individuals can help the audience to remember and internalize the message (Boone & Kurtz, 2022).

Strategies for Improving the Effectiveness of Communication

The need to improve communicationn effectiveness cannot be overemphasized. Boone & Kurtz, 2022) highlighted the following as strategies for improving communication effectiveness:

1. **Practicing and Rehearsing:** One of the most effective strategies for improving the effectiveness of communication is practicing and rehearsing. This includes practicing the message and delivery, as well as rehearsing the message in front of a small group or a mirror.
2. **Using Nonverbal Cues**: Another strategy for improving the effectiveness of communication is using nonverbal cues. This includes using body language, facial expressions, and eye contact to convey meaning and to build rapport with the audience.
3. **Using Clear and Simple Language**: Another strategy for improving the effectiveness of communication is using clear and simple language. This includes avoiding jargon, technical terms, and complex sentence structures, and instead using language that is easy for the audience to understand.
4. **Being Confident:** Being confident is another strategy for improving the effectiveness of communication. This includes speaking clearly, standing up straight, and making eye contact with the audience. Additionally, being confident also includes being prepared for the message and being able to handle unexpected questions or objections.
5. **Being Adaptable:** Being adaptable is another strategy for improving the effectiveness of communication. This includes being able to adjust the message and delivery to fit the audience and the situation. Additionally, being adaptable also includes being able to handle unexpected.

Emotional Intelligence

Emotional intelligence is a new concept symbolized by the abbreviation EQ (Emotional Intelligence Quotient). Emotional intelligence is the ability to recognize and reason about your own and other's emotions. The concept was popularized by Daniel Goleman in his book, Emotional Intelligence: Why It Can Matter More than IQ. Emotional intelligence is someone's ability: (a) to understand his feelings, (b) to listen to others and to feel them, and (c) to express his emotions in a productive manner. EQ may be equally and sometimes more powerful than IQ. They are not two conflicting but rather two distinct capabilities. Many people connect spirit with emotional insight. Academic intelligence doesn't have relation with emotions and feelings. The most intelligent persons among us could drown into an ocean of undisciplined impulses and unbridled passions. (Goleman 2018).

EQ is emotional awareness – the ability to control emotions and apply them to everyday tasks. A person with high EQ is said to be ideal in a leadership position. It includes skills such as being able to control the impulse, to curb the impatience, to properly regulate mood and to prevent the frustration, to stifle the ability to think, to have empathy and hope (Ioannidou & Konstantikaki 2018). Emotional intelligence refers to the capacity to identify, evaluate, and manage emotions in oneself as well as in other people. Some researchers believe this ability may be trained and developed, while other experts suggest emotional intelligence is a trait a person must be born with.

Factors of Emotional Intelligence

Goleman (2018) presented five key principles of emotional intelligence;

a. **Self-Awareness:** Firstly, you need to know yourself. Awareness of who you are and how you are is the catalyst for a deeper understanding of your emotions. When you feel an emotion, begin asking yourself why you feel that way. Explore the source of your feelings. Examine how you manage your emotions. If a person has a healthy sense of self-awareness, he understands his own strengths and weaknesses, as well as how his actions affect others. A person who is self-aware is usually better able to handle and learn from constructive criticism than one who is not

b. **Self-Regulation:** A person with a high EI can maturely reveal his emotions and exercise restraint when needed. This involves controlling your emotions so that the emotions don't control you i.e. keeping one's anger in check, adapting oneself to change. A person, in order to maintain his equilibrium, regulates his emotions and expresses them with restraint and control.

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c. Motivation: Emotionally intelligence not only affects the way individuals get along with others but also affects how they succeed in their personal and professional life. Emotionally intelligent people are self-motivated, which makes them better learners, confident, optimistic, creative, flexible, happy and successful. They are usually resilient and optimistic when they encounter stress and are driven by an inner ambition.

d. Empathy: The most important virtue to sense how other people feels. It is the psychological capacity to identify yourself with the other person. A person who has empathy has compassion and an understanding that allows him to connect with other people on an emotional level. Empathy is the catching pull to understand others so that you can feel the emotional vibrations.

e. People Skills: It means efficient handling of our own emotions as well as of others. The knowledge of emotions is utilized by such emotionally intelligent people to live and to work more effectively, and to grow as good and competent human being. Such people are able to build rapport and trust quickly with others on their teams. They avoid power struggles and backstabbing. They usually enjoy other people and have the respect of others around them.

Emotional Intelligence and Persuasive Communication in an Organisation

Scholars may have coined the term emotional intelligence in the early 1990s (Salovey & Mayer), but business leaders quickly took the concept and made it their own. Emotional intelligence is a valuable asset in the workplace. In certain environments, employees with high levels of emotional intelligence may be better able to communicate with others, manage work-related stress, solve conflicts within workplace relationships, and learn from previous interpersonal mistakes. According to emotional intelligence, success is strongly influenced by personal qualities such as perseverance, self-control and skill in getting along with others. Workers with high EI are better able to work in teams, adjust to change and be flexible with communication. No matter how many degrees or other on-paper qualifications a person has, if he or she does not have certain emotional qualities, he is unlikely to succeed. As the workplace continues to evolve, making room for new technologies and innovations, these qualities may become increasingly important. Just as it is important to seek new hires with emotional intelligence, it is vital for managers and other business leaders to operate in emotionally intelligent ways to meet the needs of today's workers.

a. Emotional Intelligence and Career Development: Emotional intelligence is one important characteristic that determines the career development of a person. A person with emotional intelligence possesses qualities like self-awareness, self-control, empathy, and social skills (Goleman, 2018). Those with a higher degree of EI have a better chance of getting a job offer. These qualities help a person select the career that suits him/her and to excel in it. Persons with high emotional intelligence have the ability to identify the needs of people who deal with them and therefore be able to maintain healthier relationships with them. The emotional intelligence of current employees is also analyzed on a regular basis to determine who amongst them has leadership potential. EI is often factored into the decision regarding pay rises and promotions.

b. Emotional intelligence and leadership: To be effective leaders in the workplace, managers, supervisors, and other authority figures must be able to function productively with people under their charge. High emotional intelligent leaders are able to use their social skills to foster rapport and trust with their employees. They tend to view their team members as individuals with unique abilities, backgrounds, and personalities. A good leader is able to create the type of work environment where each person feels relevant and motivated to succeed. An emotionally intelligent leader will be able to clearly understand the various situations that take place in the organization and to anticipate the likely emotional outcome of each situation. For leaders, the ability to understand and be aware of their own emotions and also those of others helps to keep those who work under them emotionally balanced. Leaders with high emotional intelligence manage relationships with others more effectively and this, in turn, will help to enhance the productivity of the organization. When conflict arises, leaders with high emotional intelligence may be better able to control their own impulses, view the situation from all perspectives, and seek mutually beneficial solutions. Effective leaders are transparent and are not afraid to admit when they are wrong. They are also more likely to try to improve work relationships (Goleman, 2018).

c. Emotional Intelligence and Team Building: In many organizations, work is accomplished on the basis of teams and the emotional intelligence exhibited by team members is crucial to the team's performance. This emotional intelligence helps team members to unite and be efficient in operations. A team which does not show signs of emotional intelligence cannot succeed in its

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operations. The team members should get chance to know each other before work begins. If there is any negative behavior, the reason should be identified and corrective action taken. Decisions should be made on the basis of the opinion of each member in the team. Each member should be supported in his/her activities. His/her contributions to the team should be commended. In case any problem arises, the attention should be on solving the problem and not on finding fault with each other (Goleman, 2018).

Conclusion

In conclusion, persuasive communication is an essential skill that is necessary for success in both personal and professional contexts. The ability to communicate persuasively can lead to personal and professional success, effective decision-making, and the ability to influence and shape public opinion. Additionally, it is important for individuals to understand the audience, use evidence and logic, build credibility, use emotional appeals, create a call to action, and reinforce the message to make communication persuasive. Furthermore, it is necessary to practice and rehearse, use nonverbal cues, use clear and simple language, be confident, and adaptable to improve the effectiveness of communication. Emotional intelligence is indeed the most potent weapon which helps boost our self-awareness, self-control, motivation, empathy and social skills, all of which help us to communicate persuasively and effectively. An organization that is emotionally intelligent has employees who are productive, motivated and efficient. They are committed to achieving their goals. They're also happy, confident and likable. Team members are able to work together in the most effective manner, and provide better results for the organization as a whole. As observed, having high emotional intelligence plays an important role in the career, especially if a person is aiming for a leadership position within the organization. It is important to nurture EQ, so that one is able to learn, manage and master his emotions, as well as the emotions of others and attain success at the workplace.

Recommendations

i. Organizations should design and implement regular emotional intelligence training programmes aimed at improving employees' self-awareness, self-regulation, empathy, social skills, and motivation. Such training will strengthen employees' persuasive communication abilities and interpersonal effectiveness.

ii. Human resource managers should include emotional intelligence assessments in recruitment and selection procedures to ensure that prospective employees possess the emotional competencies necessary for effective communication and influence in the workplace.

iii. Organizations should encourage managers and supervisors to cultivate emotional intelligence competencies, as emotionally intelligent leaders are better positioned to persuade, motivate, and inspire employees toward achieving organizational goals.

iv. Management should foster an organizational culture that encourages open communication, empathy, active listening, and mutual respect. Such an environment enables emotionally intelligent interactions and enhances persuasive communication.

v. Leadership development initiatives should include emotional intelligence modules to equip current and future leaders with the skills necessary for effective persuasion, negotiation, and conflict resolution.

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WORK ETHICS, EMOTIONAL INTELLIGENCE AND RESEARCH PRODUCTIVITY IN THE CONTEXT OF NIGERIAN INSTITUTIONS: A THEORETICAL REVIEW

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Abstract
This paper reviewed theoretical bases for work ethics, emotional intelligence and research productivity in the context of Nigerian institutions. The paper reviewed work ethics as key to the ethical behaviour of employees and organizations which could be effective and result into an ethically sound work environment. Furthermore, the paper reviewed emotional intelligence as the ability to identify and understand the emotions in oneself and others, having the dimensions of perceiving and expressing emotions, using emotions, understanding emotions, and regulating emotions. Theoretical reviews include: the Blanded Model of Research Productivity, a framework for understanding research productivity problems, focusing on individual, institutional, and leadership influences, helping to produce high-quality research; Utilitarianism Theory which balances the pursuit of happiness with respect for human dignity, moral development, and justice; and, Emotional Intelligence Theory by Goleman with four dimensions of self-awareness, self-management, social awareness and relationship management. The paper concludes that work ethics and emotional intelligence are germane to academic productivity and recommended that scholars, researchers and organizations study or read wide on theories applicable to constructs or terminologies as the case may be to help in understanding and having the overall picture of what the individual or company is dealing with or what to expect.
Keywords: Emotional Intelligence, Research Productivity, Work Ethics, Nigerian Institutions.

Introduction

Research is considered to be an integral part of an academic environment growth and the importance of research to the academic staff cannot be overlooked. Research involves any creative systematic activity undertaken in order to increase the depth of knowledge and the use of this knowledge to develop new applications for modern living. Infact, research serves as one of the key determinant in ranking of universities to ensure its visibility and reputation hence establishing a competitive edge over other contemporaries (Ladipo, Alegbeleye, Soyemi & Ikonne, 2022). Also, with productivity, it is a measure of efficiency of production which is usually expressed as the ratio of output to inputs used in the production process. When all outputs and inputs are included in the productivity measure it is called total productivity. Outputs and inputs are defined in the total productivity measure as their economic values.

Research is a platform for lecturers and other academic staff to become accomplished scholars through their research productivity. Research productivity is intangible outputs manifested through, editorial duties, obtaining research grants, engaging in public debates and commentaries on public interest issues, supervision of students' dissertations and class projects, teaching, and community service. Higher education institutions regularly conduct an evaluation of lecturer research productivity by assessing a lecturer's potential for career growth and meeting the challenges of the future. Several studies have been conducted on evaluation or assessment of research productivity of lecturers. However, evaluation of lecturer productivity is extremely difficult process which involves multiple variables that could be qualitative or quantitative, and can also be complex, sensitive and subject to imprecise measurement. Therefore, due to complexity in evaluating research productivity, the quantitative approach is often used. Lecturer productivity has been measured by the number of publications, the acquisition of patents, citation of scientific work, or papers presented at the seminars. In general, to recruit new lecturers and as criteria for promotion higher education institutions often assess research capabilities and scientific

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publications. In respect of this, publications are often viewed as the benchmark for assessing lecturers' research abilities and performance (Henry, Ghani, Hamid & Bakar, 2020).

Scholars affirm that research productivity of lectures across disciplines is low and inconsistent in Nigeria. Existing studies have dealt with academics' research productivity with various variables and indicators. However, the concept of institutional support seems to be neglected as factors that could contribute to the low level of research productivity. Researchers in higher institutions all around the world can be supported through selected institutional factors to drive research productivity. Institutional factors refer to elements that affect the productivity of faculty and staff or employees in any organization. Institutional factors can be described as the external and internal environment of an organisation which influences work processes. Institutional factors include elements that may affect the productivity of lectures which the university may adjust or look into. Institutional factors include support programmes that an institution develops for faculty members, practice and standards. Scholars averred that institutional factors like training, staff support, technical support and guidance, resources, awards, workload, research culture, tenure and promotion, financial awards, performance standards, peer and social recognition, and leadership factors like appreciation and orientation can influence lecturers' research productivity (Ani, Ngulube & Onyancha, 2017).

On the other hand, research productivity is determined through time frame in which it is required that an individual indulging in research must finish. This is more visible with those in academics in which it is required by policy that a teaching staff will publish certain amount of literature as their promotion is tied to it. With this, the researcher comes up with methodologies and concepts towards accomplishing the research. It is assumed that the output of research if implemented promotes national development and economic advancement. Studies, had revealed that lecturers research productivity is influenced by individual factors (self-efficacy, affiliation, motivation, commitment, orientation skills, research skills, achievement motivation, community contribution, sense of responsibility, scientific pursuit, autonomy and flexibility, satisfying interest and curiosity (Mantikayan & Abdulgani, 2018).

Institutional factors are elements that affect the productivity of faculty and staff or employees in any institution or organization which may be external and internal. Institutional factors may be regarded as support programmes that are developed for members in the organisation. Scholars averred that institutional factors may be in form of staff development and training, staff support, technical support and guidance, workload, research, promotion, financial rewards, social recognition, and leadership factors like appreciation and orientation which can influence employees such as lecturers' especially as it relates to their research productivity. Institutional factors affect the productivity of lectures if they are on the negative. Institutional factors may be regarded as criteria for identification of external and internal environmental output of an organization as it performs in two different levels. Institutional factors at environmental level could be managed by an organization if proper consideration and attention is given. Institutional factors of at organisational level show reaction of an organisation to business environment and form internal environment of such organization (Ryazanova & Jaskiene, 2022).

There are different factors that determine and influence lecturers research productivity. An institutional factor is operationalised in terms of emphasis. Organisational culture in the areas of institutional research culture, leadership style organisational climate, work process and employee management and work ethics help to know if an employee is productive. Another researcher observed that amongst recognised underlining instructional factors affecting research productivity of lecturers in universities are gender, institutional terminal degree, rank, discipline and work experience. The study therefore opined that paradigm shift in faculty and university policy of performance contracts and self-reported instruments currently in use for lecturer's research productivity, is best option (Gbemi-Ogunleye, 2023).

Despite extensive scholarly inquiry into the individual contributions of work ethics and emotional intelligence to professional efficacy, a significant void persists in collective understanding of the combined, synergistic influence, particularly within specific academic ecosystems and also the role theoretical framework plays on these constructs. Much of the extant literature has, perhaps inadvertently, treated these constructs in isolation, thereby overlooking the profound multiplicative effect that their interplay might exert on research outcomes. This oversight is particularly salient in

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contexts such as Nigerian institutions, where unique socio-economic and infrastructural realities may profoundly modulate these relationships. The documented challenges, including resource scarcity, inadequate training infrastructure, and technological impediments, that contribute to a perceived decline in research output in Nigerian institution settings, underscore the urgent necessity to identify and cultivate every conceivable driver of academic productivity.

Work Ethics

Today's business environment is not only fast-paced, but also highly competitive. In order to keep pace and stay ahead, possession of several key work ethics is a plus for achieving a successful career. Successful careers come in many flavors, but work ethics are a main ingredient in most recipes for success in organisations. Employers who emphasize a positive work ethic must be absolute in maintaining the environment for it to thrive. Individuals with a good work ethic are usually very productive people who work at a faster pace. They regularly accomplish more work, more quickly than those who lack a work ethic. They do not quit until the work that they are tasked is completed. At least in part, this is also because they wish to. Work ethics on the other hand is application of ethics on workplace. It is defined as the set of principles based on hard work and diligence. It is also a belief in the moral benefit of work and its ability to enhance character. A work ethic may include being reliable, having initiative, or pursuing new skills (Training Program on "Work Ethics for Development Professionals) Defines Work ethics as a "set of values centered on importance of work hard. Work ethics is an inherent attitude that an individual possesses that allows him to make decisions and perform his duties with a positive moral value. It comes in form of attitudes that add value to the organization and an individual person as traits such like appearance, attendance, character and teamwork (Mahaputra & Saputra, 2021).

Work ethics is the key to the ethical behaviour of employees and organizations that focus on developing work ethics relevant to the issues faced by employees and enforces the practice of such work ethics is likely to be effective that will result into an ethically sound work environment. Previous studies have measured work ethics with a variety of indicators. The indicators include self-interest, company profit, efficiency, team attention, social responsibility, personal morality, company rules and procedures, laws, codes of conduct; wise and egoist attitudes; communication, training and training duration, codes of ethics; caring, law and ethics, instrumentality, regulatory, autonomy; working as a goal, time utilization and hard work. Work ethics help prevent problems that will be detrimental to the organization and employees (Aldulaimi, 2020).

Work ethics refers to the set of values, principles, and moral beliefs that guide an individual's attitude and behavior in the workplace. It is a reflection of one's sense of responsibility, dedication, discipline, and integrity when it comes to performing professional duties. A strong work ethic is often considered a key driver of both personal and organizational success, as it fosters accountability, consistency, and commitment to quality. Work ethics is broadly defined as "the principle that hard work is intrinsically virtuous or worthy of reward. It encapsulates qualities like diligence, perseverance, reliability, and the intrinsic value of work itself. It also involves the way individuals approach their jobs and responsibilities, reflecting their level of professionalism, commitment, and moral attitude toward work (Aldulaimi, 2020).

Importance of work ethics is enormous as a strong work ethics are crucial for improving individual and organizational productivity. Employees who are diligent, dependable, and professional contribute to higher levels of efficiency and output. They ensure that projects are completed on time and that quality standards are met, which directly impacts organizational success. Work ethics help shape a positive workplace culture. When employees adhere to ethical standards, they contribute to a supportive and respectful work environment. This culture promotes teamwork, reduces conflict, and fosters an atmosphere of mutual respect and collaboration. In a workplace that prioritizes work ethics, trust between employees, supervisors, and clients is stronger. When employees demonstrate honesty, reliability, and fairness, it enhances the reputation of the organization. This trust is key to building long-term relationships with clients and stakeholders. Individuals with strong work ethics are more likely to excel in their careers. Qualities like professionalism, initiative, and integrity are often noticed by supervisors and lead to promotions, salary increases, and professional development opportunities (Husin & Kernain, 2020).

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Several factors have been investigated and found to have influence on work ethics. For instance, Cultural factors play a significant role in shaping work ethics. Different societies have varying expectations regarding hard work, punctuality, and moral responsibility in the workplace. For example, in cultures that emphasize collectivism, teamwork and group success are highly valued, while individualistic cultures may prioritize personal achievement and autonomy. The policies and leadership styles within an organization heavily influence work ethics. Clear ethical guidelines and codes of conduct help employees understand what is expected of them. Moreover, leadership that models ethical behavior encourages a trickle-down effect, fostering a culture of ethical behavior throughout the organization. Personal values, such as integrity, accountability, and respect, play a key role in determining an individual's work ethic. Employees with strong moral beliefs are more likely to adhere to ethical standards in their professional lives, regardless of external pressures (Omisore & Adeleke, 2015).

Emotional Intelligence

Basically, male and females naturally differ on the basis of their physiological and biological characteristics. Regarding emotional differences, these are considered as something natural, hereditary and innate, while in fact they are the result of gender roles, which have been assimilated from pre-school age. Emotions omnipresence in human life have encouraged scientists across various disciplines to investigate their influence on performance and well-being. Historically, the concept of emotional intelligence has been grounded within the two major perspectives of ability and trait. According to these two approaches, the main characteristics of emotional intelligence are that individuals differ in terms of identifying, expressing, understanding, regulating, and using one's and others 'emotions (Mattingly, Victoria & Kurt Kraiger, 2019).

Emotional intelligence is defined as "the ability to identifying and understanding the emotions in oneself and others" while emotional intelligence as "an array of non-cognitive ability, efficiencies, and skills that affect one's ability to be successful in facing environmental claims and stress". Emotional intelligence includes, the ability to monitor one's own and others' feelings and emotions, to discriminate among them and to use this information to guide one's thinking and actions and the capacity to perceive emotions, assimilate emotion-related feelings, understand the information of these emotions, and manage them. The first dimension of emotional intelligence, the perceiving and expressing emotions dimension, describes how quickly and effectively people can express and recognize emotions. People high in this dimension can recognize the emotions that others' experience, can detect authenticity in others' emotions, can appraise their own emotions, and can clearly express their emotions to others. The second dimension of emotional intelligence, the using emotions dimension, describes how effectively people can use their emotions to enhance their cognition. People high on this dimension understand the effect of their emotions on their cognitive processes. They also understand how to use their emotions to enhance their cognitions and to make better decisions (Goleman, Richard & Annie, 2013).

The third dimension of emotional intelligence, the understanding emotions dimension, describes how effectively people can reason about various aspects of emotions. People high on this dimension recognize the relationship between linguistics and emotions and the relationship between particular events and the emotions that these elicit. They also recognize how basic emotions combine to form more complex emotions. The fourth dimension of emotional intelligence, the regulating emotions dimension, describes how effectively people can influence the intensity or duration of their own emotions and the emotions of others. People high on this dimension can discern whether their emotions are optimal in a specific situation and can effectively modify their emotions accordingly. They can also select regulation strategies and effectively implement these strategies (Goleman, Richard & Annie, 2013).

Emotional intelligence is a multifaceted concept. It has occupied and continues to occupy researchers to this day. One of the main reasons that makes it so interesting is the fact that it affects almost every human activity. Emotional intelligence is inextricably linked to the recognition and expression of both the emotions of the person and the people around and with the regulation of emotions, so that the person can adapt to various situations, but also with the use of emotions to resolve problems. It is also linked to the working environment and more specifically to work success, for which self-awareness,

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self-management, cognitive awareness and social relationship management play an important role. Emotional intelligence promotes well-being and help people make the most of their positive emotions. The concept of Emotional Intelligence (EI) combined two separate entities of psychology, which involves the affective (emotion) and the cognitive (intelligence) under one umbrella term'. The ability to integrate emotional information into cognitive activities is fundamental to effective lifelong functioning, and succeed in whatever we do. The construct of Emotional Intelligence (EI) is one of the most frequently researched topics in organizational study. EI has been found to be an important predictor of various enviable organizational outcomes. The most distant roots of Emotional intelligence can be traced back to Darwin's early work on the importance of emotional expression for survival and second adaptation (Szczygieł & Mikolajczak, 2017).

Emotional intelligence plays major role to develop an individual's ability to solve problems. There are four components of emotional intelligence (EI), self-awareness, self-control/self-management, social awareness and social skills that should be considered by everyone to make sure they can manage their level of emotions while they can increase their work performance in an organization. The key dimensions of the ability model of emotional intelligence are generally described as the ability to monitor one's own feeling and others' feelings and emotions that distinguish between those emotional states, and to use this information effectively to guide one's thinking and action (Sánchez, María, Berrocal, Raquel & Alberto, 2022).

Theoretical Framework

Blanded Model of Research Productivity

The Bland Model of Research Productivity developed by Carole J. Bland and colleagues, is a framework for understanding the factors that affect research productivity among academics, particularly in higher education settings. The model focuses on individual, institutional, and leadership influences that contribute to faculty members' ability to produce high-quality research. Individual factors include components such as research experience, research interests, research training, personality traits (such as conscientiousness, openness to experience), and work-life balance. Institutional Characteristics encompasses aspects of the academic environment, which include the research culture, funding opportunities, research support services, departmental resources, and institutional policies while for leadership characteristics, the role of leadership is crucial in shaping research productivity. Leaders can influence the research expectations, resource allocation, mentoring and support and collaboration opportunities among the lecturers (Tuan et al., 2020).

However, in Bland model, the individual characteristics highlights that personal attributes such as motivation, discipline, and resilience play crucial roles in determining research productivity. Researchers with high levels of intrinsic motivation and self-discipline tend to engage more effectively in scholarly activities, producing higher volumes of research output. Furthermore, self-efficacy and the ability to manage time efficiently also positively correlate with individual research productivity. In addition, the institutional support structure is critical in fostering a productive research environment. Bland's model suggests that factors such as access to funding, availability of research assistants, and the presence of a supportive leadership structure are crucial. Likewise, clear policies on research expectations, promotion, and tenure, as well as the availability of professional development opportunities, help create an environment conducive to research productivity (Mantikayan & Abdulgani, 2018).

Bland's model also emphasizes the importance of balancing personal life with professional responsibilities. Academic staff who maintain a healthy work-life balance are often better positioned to focus on research activities. This can include institutional provisions for flexible working hours or support systems that reduce personal stress, allowing researchers to dedicate more time to scholarly activities. Furthermore, collaborative networks and mentorship play an integral role in research productivity, as outlined in the Bland model. Early-career researchers, in particular, benefit significantly from mentorship programs that provide guidance and support. Collaboration with peers both within and across disciplines leads to increased opportunities for co-authorship, funding, and interdisciplinary project (Gbemi-Ogunleye, 2023).

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In Bland view, resources and infrastructure particularly, access to resources such as advanced technology, research databases, and laboratory facilities is a critical component of the Bland model. Institutions that provide robust infrastructure tend to have faculty members with higher research output. The model suggests that underfunded departments or universities without adequate research infrastructure may see diminished productivity levels among their academic staff. Several studies in recent years have applied the Bland model to explore research productivity in various academic contexts. A more recent study explored the application of the Bland model in medical schools, finding that institutions with structured research support systems, including mentoring and access to research resources, saw significantly higher research output from faculty members. This reinforces the model's argument that both individual and environmental factors must be aligned for maximum productivity. In overall, the Bland model of research productivity provides a comprehensive framework for understanding the multifaceted nature of research output in academic settings. By integrating individual attributes with institutional support and collaboration, the model offers insights into how universities can create environments that foster high levels of scholarly productivity (McCormack & Jones, 2020).

Utilitarianism Theory

Utilitarianism by John Stuart Mill remains a landmark in moral philosophy. It provided a more humanistic and refined approach to utilitarian ethics, balancing the pursuit of happiness with respect for human dignity, moral development, and justice. While not without its flaws, the work continues to shape contemporary ethical thought and policy-making frameworks. Compared with Aristotle's Virtue Ethics being one of the foundational theories in moral philosophy, focusing on the development of good character traits, or virtues, as the basis for ethical living. This theory emphasizes moral character and the development of virtues through habitual practice. According to Aristotle, the ultimate goal of human life is to achieve fulfilment, often translated as flourishing or happiness. However, this happiness is not about pleasure or transient satisfaction, but about living a fulfilling and meaningful life. For Aristotle, achieving fulfilment is closely tied to living virtuously, meaning that individuals must cultivate virtues that help them realize their full potential as rational beings. This also translate into a disposition to act in the right way, which is a mean between extremes of deficiency and excess. Thus, living ethically involves identifying and practicing moderation in all aspects of life, a concept Aristotle refers to as the "Golden Mean" (Dobel, 2019; Li, Huang, Hedayati-Mehdiabadi, Wang & Yang, 2020).

Aristotle distinguishes between moral virtues and intellectual virtues. Moral virtues, such as courage, temperance, and generosity, are acquired through practice and habit, while intellectual virtues, like wisdom and understanding, are developed through education and intellectual effort. Both types of virtues are essential for living a virtuous life, with intellectual virtues guiding the proper use of moral virtue. It is not merely theoretical knowledge but involves experience and moral perception. Aristotle's virtue ethics remains a robust and adaptable ethical framework, offering valuable insights into moral character and the pursuit of a good life. Its emphasis on the development of virtues through practice, its holistic view of human flourishing, and its relevance to various fields of modern life such as education, leadership, amongst others makes it a significant theory to reckon with in both classical and contemporary moral philosophy (Meriac & Gorman, 2017; Zúñiga, Garcia, Barroso & Calvo, 2019).

Emotional Intelligence Theory

Based on the review of the literature, we found that the framework developed by Goleman is the most comprehensiveness and it has been used by numerous researchers. It is because of these reasons, this study decided to adopt the framework as the basis for investigating lecturers' emotional intelligence. The Goleman's framework consists of four dimensions which are self-awareness, self-management, social awareness and relationship management. The self-awareness dimension consists of three sub-dimensions while the self-management dimensions comprise of six sub-dimensions. Goleman's Emotional Intelligence (EI) theory is highly relevant to employees service delivery as it emphasizes the importance of empathy, social skills, self-awareness, self-regulation, and motivation in building strong relationships with patrons, understanding their needs, and delivering high-quality services. One key aspect of Goleman's EI theory is empathy, which involves understanding and responding to the feelings and perspectives of others (Mickaël, Laborde, Martinent, Louvet & Nicolas, 2019).

Another aspect of emotional intelligence is social skills, which involve the ability to interact effectively with others, communicate clearly, and build relationships. In a lecturers context, social skills are

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important for lecturers to collaborate with colleagues, work with diverse communities, and develop partnerships with other organizations. For example, lecturers can use their social skills to build relationships with local schools, community groups, and businesses, and develop programming and outreach initiatives that meet the needs of these groups. Self-awareness is another important aspect of emotional intelligence, as it involves understanding one's own emotions, strengths, and weaknesses. In a lecturers context, self-awareness can help lecturers to identify areas for professional development, manage their own emotions, and build resilience in the face of challenges. For example, lecturers can use self-reflection and self-assessment tools to identify areas where they can improve their skills or knowledge, and seek out training or mentorship opportunities to support their growth (Goleman, Richard & Annie, 2013).

Self-regulation is another key aspect of emotional intelligence, as it involves managing one's own emotions and behaviour in response to different situations. In academic context, self-regulation can help lecturers to remain calm and focused in stressful situations, and respond to patrons with empathy and professionalism. For example, lecturers can use mindfulness techniques or other self-regulation strategies to manage their own stress levels, and respond to patrons' needs in a calm and respectful manner. Finally, motivation is an important aspect of emotional intelligence, as it involves the drive and passion to achieve goals and overcome obstacles. In a lecturers context, motivation can help lecturers to stay engaged and committed to their work, and provide high-quality services to patrons. For example, lecturers can use their motivation to develop innovative programs and services, engage with new technologies, and build strong partnerships with other organizations. Conclusively, Goleman's emotional intelligence theory has many applications to employees service delivery, and can help lecturers to develop the skills and competencies they need to provide high-quality services to patrons. By cultivating empathy, social skills, self-awareness, self-regulation, and motivation, lecturers can build strong relationships with patrons, collaborate effectively with colleagues, and make a positive impact on their communities (Mayer, Salovey & Caruso, 2010; Goleman, Richard & Annie, 2013).

In conclusion, this study examined the theoretical review on work ethics, emotional intelligence and research productivity in Nigeria. The paper concludes that work ethics and emotional intelligence are germane to academic productivity. It is therefore recommended that scholars, researchers and organizations study or read wide on theories applicable to constructs or terminologies as the case may be to help in understanding and having the overall picture of what the individual or company is dealing with or what to expect.

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SECRETARIES' AWARENESS AND ROLES IN PREVENTING CYBERSECURITY BREACHES WITHIN OFFICE ENVIRONMENT OF FEDERAL POLYTECHNIC, BALI TARABA STATE

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Abstract
This paper examined secretaries' awareness and roles in preventing cybersecurity breaches within office environment of Federal Polytechnic, Bali Taraba state. The study used descriptive survey research design. 38 secretaries working with Federal Polytechnic Bali, was the targeted population for this study. Census sampling technique was adopted as the entire population were used for the study. Instrument for data collection was a 15-item, 5-point Likert Scale, structured questionnaire, validated by experts. Cronbach Alpha was used to test the consistency of the instrument with a reliability coefficient of 0.75. Arithmetic Mean and Standard Deviation were used in analyzing collected data, with 3.00 mean score set as standard for relevance or otherwise of the research questions raised on the study. The null hypothesis was tested using Pearson Product Moment Correlation (PPMC) at 0.05 level of significance. Findings showed that majority of the secretaries have basic understanding of common cyber threats that may occur within the office environment. The study concluded that secretaries play a very important role in safeguarding organizational information; handle sensitive documents, digital communication and administrative records. The study, recommended among others, that management of Federal Polytechnic Bali should organize regular cyber security training and workshops for secretaries to improve their knowledge of modern cyber threats and preventive practice.
Keywords: Secretaries' Awareness, Roles, Cyber Security Breaches, Office Environment and Prevention

1.0 Introduction

In today' digital work environment, particularly within tertiary institutions there is high level of dependent on digital information management systems for day to day administrative tasks, communication, record keeping, teaching processes and operations management. Many academic institutions in Nigeria, has moved from paper based systems to digital platforms including emails, students information systems and on line services. This shift has improved efficiency and productivity but it has also exposed organizational information to various cyber threats such as phishing, malware, ransomware and unauthorized access to important information (Ojefeso & Abdulkareem, 2025).

Cybersecurity is the practice of protecting networks, computers, programs and data from unauthorized access, attack or damage. It involves information confidentiality, integrity and availability of information. In the environment where digital communication and electronic record keeping, cybersecurity is of necessity in preventing breaches that can compromise sensitive data and disrupt institutional functions (Garba, et al, 2021; Oyefeso, 2025). Cybersecurity is not only a technological problem but a socio technical challenge that involves human users at the other ends as evidence reveals that human behaviour, awareness and practice influence organizational expose to cyber incidents (Oyefeso, 2025).

Cyber security breach refers to an incident in which an information system's security is violated, leading to unauthorized access, leakage, disclosure, modification or destruction of data and computer resources (Chikwendu & Oli, 2023). The authors believed that breaches occur due to inadequate employee awareness and weak proactive practices within the organization system and human factors as central to cybersecurity vulnerability. It involves malicious activities where individuals or automated programs make use of the weakness in hardware, software or human behaviour to compromise the confidentiality, integrity or availability of digital systems and organizational information (Udoinyang et al, 2024). These authors argued that cyber breaches manifest through unauthorized access and disruption of digital assets, with broader implication for organizational stability and for economic performance.

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A role user efforts in preventing cybersecurity breaches is important and should not be based on technical control alone. The behaviour, awareness and knowledge of employees who interact with information systems are major determinant of an institution's cybersecurity posture, especially for non IT professionals such as secretaries, whose daily role places them at the center of information communication streams, document handling, data entry and access to sensitive institutional records (Olatunde, 2022).

Secretaries of the new office environments are positioned as gatekeepers of organizational information flow. Their responsibilities often include preparing and managing correspondence, recording meeting minutes, handling databases and communicating with internal and external stakeholders (Ocholi, et al, 2022). In academic settings like Federal Polytechnic Bali, secretarial duties involve managing students' records, staff file management, examination schedules and publication archives. Positioned at such strategic operational nodes, secretaries frequently encounter sensitive data and system interfaces, making them both valuable assets and potential susceptibilities in cybersecurity defense. For secretaries, cybersecurity awareness is not only about basic familiarity with passwords or antivirus software, it requires comprehensive understanding of how cyber threats manifest, how internal processes can carelessly expose systems to cyber breaches (phishing, weak passwords practices), and the role that every information actor plays in preventing breaches.

Secretaries' awareness of cybersecurity refer to the level of knowledge that secretaries possess regarding cyber threats, security protocol, digital hygiene practices and institutional cybersecurity policies. Awareness encompasses understanding of phishing tactics, passwords best practices, recognition of suspicious email, secure use of networks and knowledge or reporting channels for suspected breaches (Adebayo et al, 2025). There have been many studies on the roles of secretary and information management. Dibbari and Lawrence (2023), on business educators' perception on digital skills required for employability by office technology and management students, emphasized the needs for record management skills in electronic information management. With many studies on information management, there are few studies that discussed on the awareness and roles of secretaries in Taraba state, especially in Federal polytechnic Bali. This study intend to examine the secretaries' awareness and roles in preventing cyber security breaches within office environment in Federal Polytechnic, Bali Taraba State.

The workplace of today has expanded the role of secretary beyond the routine clerical duties to include active participation in data management and information protection. The enactment of Nigerian Data Protection Acts2023, which establishes a detailed legal structure for the protection of personal data and privacy right of individuals has made data protection to be subject of importance to individuals and organizations. The secretary supports compliance implementation of the Data Protection Acts and Administrative compliance structures are essentials for translating statutory data protection principles into every office practice (Okpara & Okpara, 2025).

The secretary serves as a custodian of information in an organization. offices generates and process large volumes of data daily, including employees' records, students records, clients databases, financial documents and correspondences. Secretaries are solely responsible for filling, record keeping, scheduling, correspondence managements, they are strategically located to influence how data is handled. Their actions directly determine whether information remains confidential, accurate and secure (Adewusi & Okiti, 2023). Due to their frequent interaction with organizational records, secretary should be seen as the first line of defense against internal data breaches.

Another key responsibility of secretaries in preventing data breaches is in the of records management. Effective record keeping enhances accountability and traceability. Secretaries maintain both manual and electronic filing systems, ensuring documents are systematically and easily retrievable. In cases where employees or clients request access to data, secretary assist in locating relevant files for review. This aligns with the right of access provided under the data protection laws. Sensitive documents must be properly shredded, while electronic data should be permanently deleted using appropriate procedures (Awhefeada & Ohwomergwa, 2020; Babalola, 2024).

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Emails and communication management also fall under the secretary's responsibilities. In many offices, the secretaries are tasked with official correspondences, which requires vigilance to prevent accidental disclosure of personal through misdirected emails or unauthorized attachments. Secretaries must confirm recipients before sending confidential information and use secure channels when necessary. They must also identify suspicious messages or phishing attempts to ensure the security of organizational data (Ferguson, 2024; Uwadinma, 2025).

Statement of the Problem

Academic institutions in Nigeria, including Federal Polytechnic Bali, maintain digital information systems that contain sensitive financial, administrative and personal data. Despite the adoption of digital platforms, observation still show extensive insufficiency of structured cybersecurity training and awareness programmes tailored for non technical workers like secretaries. This gaps increases the chances of human related security breaches such as falling for phishing scams, sharing confidential credentials carelessly or failing to recognize social engineering tactics that affect data security. Without adequate awareness, secretaries are less likely to implement protective practices, possibly leaving organizational systems exposed to cyber threats which can result to unauthorized disclosure of student or staff data and legal liabilities. Although technologies can reduce many risks, the human factor remain a principal agent to cyber breaches like password mismanagement and clicking malicious links. Existing studies on cybersecurity awareness among office workers in Nigeria are limited in scope and often do not focus on specific professional roles like secretaries especially in polytechnics. Based on this note the study tend to examine secretaries' awareness and their roles in preventing cybersecurity breaches in office environment, with focus on federal polytechnic, Bali, Taraba state

Purpose of the Study

The main purpose of this study is to assess secretaries' awareness and their roles in preventing cybersecurity breaches within the office environment of federal polytechnic, Bali, Taraba state.

Specifically, the study sought to:

i. Determine secretaries' understanding of common cyber threats within office environment in Federal Polytechnic, Bali, Taraba State.
ii. Assess the level of cyber security awareness among secretaries within office environment in Federal Polytechnic Bali, Taraba State.
iii. Find out methods of preventing cyber security threats within office environment in Federal Polytechnic Bali, Taraba State.

Research Questions

1. How do secretaries understand common cyber threats within office environment in federal polytechnic Bali, Taraba?
2. What are the levels of cyber security awareness among secretaries within office environment in federal polytechnic Bali, Taraba State?
3. What are the methods of preventing cyber security threats within office environment in federal polytechnic Bali, Taraba State?

Hypothesis

H_0 There is no significant relationship between secretaries' awareness and prevention of cyber security threats within office environment in federal polytechnic, Bali, Taraba State.

2.0 Literature Review

Chikwendu & Oli (2023) examined cybersecurity practices in public universities in southeast Nigeria. Mixed methods research design was adopted with the sample size of 985 universities staff. The findings from the study shows that password protection is the most common cyber security practice employed by public universities in southeast Nigeria to protect data/information against cyber attack.

Adebayo, et. al. (2025) investigated relationship between cybersecurity awareness and secretaries' job performance at the University of Ibadan. 80 secretaries were used for the study and the findings showed that secretaries possessed high level of job performance and a moderate level of cybersecurity

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awareness among the secretaries. The study concluded that cybersecurity awareness enhances secretaries' effectiveness in handling digital office tasks and preventing cyber threats.

Ugwu et al (2023), examined cybersecurity awareness and cyber hygiene practices among students and employees of the University of Nigeria, Nsukka. 316 participated which include academic and non academic staff. The findings revealed that awareness of cybersecurity threats play a role in improving cyber hygiene practices among the employee, like using strong passwords, avoiding suspicious email and maintaining secure online behaviour. Zwilling et al (2022) examined the cyber security awareness knowledge and behaviour: a comparative study. The study results indicated that cyber security knowledge influences the level of cybersecurity awareness, regardless of gender or country differences and awareness was associated with the adoption of security protection tools like antivirus software and secure passwords.

3.0 Methodology

The study adopted descriptive survey research design, as data were collected directly from the secretaries. Two experts from the department of Office Technology and Management validated the instrument and Cronbach Alpha was used to test the consistency of the instrument while reliability coefficients were reported as (r = .75). The population for the study comprises of 38 secretaries working in federal polytechnic Bali, Taraba state. Census sampling technique was adopted as the population is of a manageable size. The instrument used for data collection was a 15 structured items questionnaire tagged "Common Cyber Security Threats Questionnaire" (CCSTQ), "Level of Cyber Security Awareness Questionnaire" (LCSAQ), and Methods of Preventing Cyber Security Threats Questionnaire" (MPCSTQ). Research question one to three adopted 5 point Likert scale on Strongly Agreed (SA) =5 points with boundary limit of 4.50 – 5.00, Agreed (A) =4 point with boundary limit 4.00-4.49, Undecided (U) =3 with boundary limit of 3.90-3.49, Disagreed (D) =2 points with boundary limit of 3.50-2.99 and Strongly Disagreed (SD) =1 point with boundary limit of 1.50-2.49. Arithmetic Mean and Standard Deviation was used in analyzing collected data. A minimum of 3.00 mean score was set as standard for relevance or otherwise of the research question raised on the study. Any research question scored below the set standard was not rejected. The hypothesis was tested using Pearson Product Moment Correlation (PPMC) at0 0.05 level of significance.

4.0 Results

Research Question 1: How do secretaries understand common cyber threats within office environment in federal polytechnic Bali, Taraba?

Table 1: Mean Rating on Common Cyber Threats within Office Environments

S/N	Items	N=38	Mean	SD	Remarks
1	I understand what phishing emails look like in the office environment	38	4.13	0.74	Agreed
2	I can identify suspicious links or attachments in official emails	38	4.05	0.81	Agreed
3	I am aware that weak passwords can expose office systems to cyber attacks.	38	4.32	0.65	Strongly Agreed
4	I understand the risk of malware or viruses entering the office computer system	38	4.11	0.77	Agreed
5	I know that haring office login credentials can lead to security breaches	38	4.36	0.62	Strongly Agreed

Source: Field Work,2026

The table above showed that all items recorded mean scores above the benchmark of 3.00, with values ranging from 4.05- 4.36. This indicates that the secretaries generally agree that they understand common cyber threats within the office environment. This further confirms a high level of awareness and understanding among the 38 secretaries surveyed in federal polytechnic Bali, Taraba state. The implication is that secretaries possess adequate knowledge and understanding of common cyber threats, which can help in preventing cybersecurity breaches within the office environment.

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Research Question 2: What are the levels of cyber security awareness among secretaries within office environment in federal polytechnic Bali, Taraba State?

Table 2: Mean Rating on Level of Cyber Security Awareness among Secretaries

S/N	Items	N=38	Mean	SD	Remarks
1	I am aware of cybersecurity policies guiding the use of office computers	38	4.12	0.74	Agreed
2	I understand the importance of protecting confidential office information from cyber threats	38	4.34	0.63	Strongly Agreed
3	I regularly update or change passwords used for office systems	38	4.06	0.82	Agreed
4	I am aware of the need to log out of office systems after completing my work.	38	4.10	0.77	Agreed
5	I am aware that cyber criminals may attempt to steal office information through fake emails or websites	38	4.23	0.69	Agreed

Source: Field Work,2026

The result in the table above showed the level of cybersecurity awareness among secretaries within the office environment. Using the decision rule of 3.00 as the accepted benchmark, all the items recorded means scores above the criterion mean ranging from 4.06 to 4.34. This revealed high of cybersecurity awareness within the office environment. It suggested that most of the respondents are knowledgeable about cybersecurity practices and understand the importance of protecting office information from cyber threats. Specifically the respondents strongly agreed that they understand the importance of protecting confidential office information. This showed that the secretaries are highly aware of the risks associated with handling sensitive digital information.

Research Question 3: What are the methods of preventing cyber security threats within office environment in federal polytechnic Bali, Taraba State?

Table 3: Mean Rating on Method of Preventing Cyber Security Threats

S/N	Items	N=38	Mean	SD	Remarks
1	Regularly updating passwords helps prevent unauthorized access to office systems.	38	4.31	0.66	Strongly Agreed
2	Installing and updating antivirus software helps protect office computers from cyber threats.	38	4.24	0.71	Strongly Agreed
3	Avoiding suspicious emails and attachments helps prevent malware attacks	38	4.18	0.75	Agreed
4	Restricting access to confidential information helps prevent cybersecurity breaches.	38	4.30	0.67	Strongly Agreed
5	Regular cybersecurity training for staff can reduce cyber security threats in the office	38	4.27	0.69	Strongly Agreed

Source: Field work, 2026

The result from the above table showed the responses of 38 secretaries on the methods of preventing cybersecurity threats within the office environment. Based on the decision rule of 3.00 all items

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recorded mean scores above the acceptance level ranging from 4.18 to 4.31. This suggests that the secretaries are aware of practical strategies that can help protect office information systems from cyber attacks. Specifically, the respondents strongly agreed that regularly updating passwords and restricting access to confidential information are important measures for preventing cybersecurity breaches.

H0: There is no significant relationship between secretaries' awareness and prevention of cyber security threats within office environment in federal polytechnic, Bali, Taraba State.

Table 4: Correlation for Relationship between secretaries' awareness and prevention of cyber security threats

Variables	N	Mean	Std. Dev.	r-value	p-value	Decision
Secretaries' cybersecurity awareness	38	4.19	0.74			
Prevention of Cybersecurity threats	38	4.23	0.71	0.68	0.001	Rejected

Decision rule

- If p-value < 0.05, reject the null hypothesis (H_0).
- If p-value > 0.05, accept the null hypothesis

Since the p-value (0.001) is less than 0.05, the null hypothesis is rejected
The result of the Pearson Product Moment Correlation analysis revealed that there is a significant positive relationship (p = 0.001) between secretaries' awareness and the preventions of cybersecurity threats within the office environment in federal polytechnic Bali. The correlation coefficient r=0.68 representing 68% indicates a moderately strong positive relationship between the two variables.

Discussion of Findings

Findings from research question one on how do secretaries understand common cyber security threats within the office environment. The study revealed that the majority of the secretaries have basic understanding of common cyber threats that may occur within the office environment, which include phishing emails, malware attacks, passwords thefts an unauthorized access. This finding corroborate with the findings of Zwilling et al (2022) that cyber security knowledge and behaviour influences the level of cybersecurity awareness, regardless of gender or country differences.

Research question two on level of cyber security awareness among secretaries, the respondents showed awareness of basic cyber security practices such as using password to protect systems, avoiding suspicious links and maintaining confidentiality of official information. This is in line with the finding of Zwilling et al (2022) which indicated that cyber security knowledge influences the level of cybersecurity awareness, regardless of gender or country differences. It is also in line with Adebayo, et. al. (2025) who investigated the relationship between cybersecurity awareness and secretaries' job performance at the University of Ibadan and found that secretaries possessed high level of job performance and a moderate level of cybersecurity awareness among the secretaries.

Research question three on the methods of preventing cyber threats, the findings revealed that by maintaining strong password, taking cautious action when opening email attachment, restricting access to confidential information and regular training on cyber security threats prevent breaches in the office environment. This is supported by the findings of Chikwendu & Oli (2023) that password protection is one of the common cyber security practice to protect data/information against cyber attack. It also corroborate Zwilling et al (2022) findings that cyber security knowledge influences the level of cybersecurity awareness, regardless of gender or country differences and awareness was associated with the adoption of security protection tools like antivirus software and secure passwords.

On the hypothesis, the result indicated that there is a significant relationship between secretaries' awareness level and preventions of cyber security threats within the office environment. This suggest that awareness plays an important role in preventing cyber security breaches in the office. As secretaries are often responsible for handling official documents and digitals communication systems,

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their level of awareness directly affects the security of the polytechnic information. Therefore, the null hypothesis stating that there is no significant relationship between secretaries' awareness and prevention of cyber threats is rejected. This corroborates Ugwu et al's (2023) findings that awareness of cybersecurity threats play a role in improving cyber hygiene practices among the employee, like using strong passwords, avoiding suspicious email and maintaining secure online behaviour.

5.0 Conclusion

In conclusion, secretaries play a very important role in safeguarding organizational information because they handle sensitive documents, digital communication and administrative records. The finding shows that their awareness can prevent many exposures of important information from been accessed by an unauthorized individuals. The study further concluded that secretaries' awareness of common cyber security treats prevent security breaches in Federal Polytechnic Bali. Therefore, improving their cyber security awareness and training is essential for strengthening information security within the office environment of Federal Polytechnic Bali. However, the study is limited to Federal Polytechnic Bali, further studies can be extended to both administrative staff and lecturers from the same polytechnic or all polytechnics in Taraba state.

Recommendations

Based on the findings of the study, the following recommendations are made

1. Continuous awareness campaigns such as seminars, orientation programs and information bulletins should be introduced by the management of Federal Polytechnic to educate secretaries on emerging cyber security threats that can affect data security.
2. The management of Federal Polytechnic Bali should organize regular cyber security training and workshops for secretaries to improve their knowledge on modern cyber threats and preventive practices in order to safeguard organization information for cyber crime syndicate.
3. The institution should establish clear cyber security policies and guidelines that secretaries and other staff members must follow when handling digital information and communication systems as this would further enhance better security of data.

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AI APPLICATIONS IN PREDICTIVE ANALYTICS FOR BUSINESS INTELLIGENCE AND RESOURCE MANAGEMENT IN THE DIGITAL ECONOMY

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Abstract
*This study investigates the applications of Artificial Intelligence (AI) in predictive data analytics for enhancing business intelligence and resource management in the digital economy. Three research questions guided the study. Descriptive survey design was adopted for the study. The population of the study consisted of **75 experts** currently practicing in financial institutions and tech firms in Umuahia, Abia state, Nigeria. Data for the study were collected through a structured questionnaire on a four-point Likert scale. Data were presented in tabular form and analyzed using mean rating and standard deviation. The reliability of the instrument was determined by statistical analysis of the data collected from the pilot study with a reliability index of 0.86. Findings from the study revealed among others that predictive analytics improves efficiency, accuracy, strategic planning, and resource allocation while providing valuable insights for risk management and customer engagement. The study concludes that while AI-driven predictive analytics holds transformative potential for organizational growth and competitiveness, addressing the associated challenges is crucial for maximizing its benefits. The study recommends among others that Policymakers and technology providers should encourage flexible adoption strategies such as cloud-based AI solutions to minimize the high costs of implementation and maintenance.*

Keywords: Artificial Intelligence, Predictive Analytics, Business Intelligence, Resource Management, Digital Economy.

1.0 Introduction

The digital economy has reshaped operational landscapes across industries, primarily through the integration of Artificial Intelligence (AI) into business decision-making and management processes. Business Intelligence (BI) involves deriving actionable insights from organizational and marketing data to support strategic decision-making and drive firm growth (Niu, Ying, Yang, Bao,& Sivaparthipan, 2021). BI-related industries are estimated to represent the largest share of global investments in information technology (IT) (Vicario & Coleman, 2020). A central component of BI is predictive analytics, which assists managers in making informed decisions by forecasting future trends based on historical data (Henry, 2021). To facilitate this, various analytic tools and technologies have been developed, encompassing statistical modeling, mathematical computation, simulation of outcomes, and data visualization, all aimed at enhancing expectation forecasting and strategic business planning (Alnoukari, 2022; Shabbir & Gardezi, 2020).

As organizations increasingly generate vast amounts of data from internal and external platforms, big data analytics has emerged as the most promising approach for extracting actionable insights in Business Intelligence (BI). The advent of advanced Artificial Intelligence (AI) technologies has further amplified the effectiveness of BI predictive analytics, offering advantages such as higher efficiency, greater accuracy, and significant time and resource savings (Munim, Dushenko, Jimenze, Shakil, & Imset, 2020). Consequently, AI-driven big data analytics has substantially strengthened the predictive capabilities of BI, enabling more informed and timely decision-making.

Intelligent data analytics powered by artificial intelligence (AI) is transforming how industries leverage vast datasets. By uncovering real-time patterns, correlations, and opportunities, it equips decision-makers with timely, accurate, and actionable insights. (Zong & Guan, 2025). In today's business environment, the integration of Artificial Intelligence (AI) and Data Analytics has fundamentally transformed the paradigm of Business Intelligence (BI). Rather than serving as a mere technological enhancement, this integration represents a strategic shift in how organizations process information and

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make decisions. According to Gad-Elrab (2021), modern BI extends beyond traditional data collection and analysis by incorporating big data analytics and AI to generate substantial data-driven value. This shift enables businesses to move from interpreting historical data toward predicting future trends and making more informed, proactive decisions.

AI in the business context is often synonymous with predictive analytics, intelligent automation, and machine learning. These technologies enable businesses to process vast amounts of data with unprecedented speed and accuracy (Ukala & Iheukwumere, 2025). The synergy between Artificial Intelligence, predictive data analytics, and Business Intelligence has become a conerstone in the modern business environment, driving innovation and efficiency across various sectors. This convergence is not merely a technological advancement but a strategic imperative that reshapes how organizations approach data and decision making (Ebioigbe, Farayola, Olatoye, Nnabugwu, & Daraojimb, 2023). AI-driven predictive analytics allows organizations to forecast market trends, consumer behavior, and optimize resources, thereby ensuring operational resilience and competitiveness.

The synergy between AI,predictive analytics, and Business Intelligence (BI) has democratized access to advanced analytics, allowing businesses of all sizes not just large corporations with extensive resources to harness data for strategic decision-making. This democratization fosters a culture in which data-driven insights permeate all organizational levels, promoting inclusivity in analytical practices. The integration of AI and predictive data analytics into BI marks a significant shift in the business landscape by enhancing the ability of BI systems to process large volumes of structured and unstructured data, deliver predictive insights, and support real-time decision-making. In an increasingly complex digital era, such strategic integration is pivotal for driving innovation, improving efficiency, and sustaining competitive advantage.

Alghamdi and Al-Baity (2022) introduced the concept of Augmented Analytics (AA) as the next stage in the evolution of Business Intelligence (BI). AA integrates traditional BI with AI and machine learning, automating the analytics cycle and improving both the efficiency and effectiveness of predictive business analytics. This approach enables more sophisticated and nuanced analyses, allowing organizations to generate actionable insights from data more quickly and accurately. The shift from traditional BI to AA reflects a broader trend toward intelligent, automated, and context-aware data analysis, positioning businesses to respond proactively to complex and dynamic market environments.

The convergence of AI, predictive analytics, and BI has given rise to several key themes that are reshaping the business landscape. Coltey, Alonso, Vassigh, and Chen (2022) highlight AI's adaptability and responsiveness to market changes, illustrating this through an AI-driven marketplace for small businesses during the COVID-19 pandemic. Their platform leverages AI tools, including Natural Language Processing (NLP), to automate market research and deliver actionable insights, demonstrating how AI can support resilient business models in rapidly changing environments. Sharma, Shishodia, Gunasekaram, Min, and Munim (2022) in another study explored AI applications in supply chain management (SCM), identifying themes such as supply chain network design, supplier selection, inventory and demand planning, and green supply chain management. This study underscores AI's transformative potential in enhancing decision-making and offering innovative solutions to complex business challenges.

Jankovic and Curović (2023) highlighted the strategic role of AI in enhancing data management and human engagement within digital ecosystems, demonstrating how AI-driven solutions optimize data collection, analysis, and utilization to improve decision-making and operational efficiency, particularly in sustainable business practices. Stoykova and Shakev (2023) identified opportunities and challenges in integrating AI into management information systems (MIS), noting trends such as intelligent process automation, predictive analytics, and natural language processing. Their findings emphasized the growing reliance on AI to streamline business processes and extract actionable insights from large datasets, while also underscoring the need for ethical guidelines and frameworks to address data privacy and security concerns. Mishra and Tripathi (2021) further illustrated the AI business model as an integrative approach, showing how AI collaborates with digital systems such as CRM and ERP to provide comprehensive predictive analytics. Collectively, these studies underscore that the integration

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of AI, predictive data analytics, and BI not only enhances operational efficiency and decision-making but also drives innovation, supports sustainable practices, and improves customer experiences.

Integrating Artificial Intelligence (AI) and predictive analytics into business operations provides substantial benefits, including enhanced decision-making, operational efficiency, and improved customer experiences. These technologies allow organizations to process and analyze large datasets to support data-driven decisions, automate routine tasks, and optimize resource allocation, thereby boosting productivity and reducing costs (Davenport & Ronanki, 2018; Manohara, Sharma, Vani, Raj, Jain, & Nijjawan, 2024). Nonetheless, challenges such as poor data quality, workforce skills gaps, employee resistance, ethical concerns, and high implementation costs persist (Hurry, 2024; Katragadda, 2024). Despite these challenges AI and predictive analytics remain critical enablers of competitive advantage, innovation, and business growth by facilitating informed decision-making and deeper customer insights (Rosa, Bento, Pereira, Costa, Dias & Gonçalves 2022; Aagaard & Tucci, 2024).

The convergence of Artificial Intelligence, predictive analytics, and Business Intelligence has become a strategic imperative in the digital economy, offering organizations unprecedented opportunities for data-driven decision-making, operational efficiency, and sustainable competitiveness, while also presenting new challenges that warrant further empirical investigation. Hence, the aim of this work is to examine AI Applications in Predictive Analytics for Business Intelligence and Resource Management in the Digital Economy.

Problem Statement

In the digital economy, businesses are increasingly generating vast amounts of structured and unstructured data from internal and external sources. While Artificial Intelligence (AI) and predictive analytics have demonstrated significant potential in enhancing Business Intelligence (BI) and resource management, many organizations still struggle to fully leverage these technologies for strategic advantage. Studies indicate that AI-driven predictive analytics can improve decision-making, operational efficiency, customer experiences, and competitive positioning (Davenport & Ronanki, 2018; Manoharan et al., 2024). However, challenges such as poor data quality, inadequate workforce skills, employee resistance, ethical concerns, and high implementation costs continue to limit adoption, particularly in emerging markets like Nigeria (Hurry, 2024; Slussareff, 2022; Katragadda, 2024).

Moreover, the integration of AI and predictive analytics into existing BI and resource management systems remains uneven, leading to underutilization of data, missed opportunities for operational optimization, and suboptimal strategic decision-making. While predictive analytics has shown promise in some sectors , there is a lack of comprehensive frameworks and empirical evidence on how organizations can effectively implement AI-driven predictive analytics to maximize both economic performance and resource efficiency. Consequently, businesses risk lagging behind competitors that have successfully harnessed these technologies, limiting their ability to innovate, adapt to market changes, and sustain growth in the increasingly data-driven digital economy. This research seeks to address these gaps by examining the applications of AI in predictive analytics for BI and resource management, identifying critical success factors, challenges, and strategies for effective adoption in digital-era organizations.

Research Questions

1. What is the role of AI-driven predictive analytics in enhancing Business Intelligence and decision-making processes within organizations?
2. How does AI-driven predictive analytics contribute to improved efficiency, accuracy, and strategic planning in organizational decision-making?
3. What challenges affect the adoption and effective integration of AI-based predictive analytics in business operations?

3.0 Methodology

The descriptive survey research design was adopted for the study. The research design allowed the administration of questionnaire for data generation. The study was carried out in Umuahia, Abia state of Nigeria. The population of the study comprised 75 experts currently practicing in various digital-oriented organizations in Umuahia. These experts were randomly selected from financial institutions

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and tech firms in Umuahia, Abia state. Because the population was relatively small and manageable, the entire population was used; hence, a census population approach was adopted without sampling. Data for the study was collected using an 15 item structured questionnaire. The instrument was divided into two sections, A and B. Section A contained items on the respondents' demographic data, while section B contained items addressing the research questions. The respondents were requested to rate the items on a 4-point rating scale of Strongly Disagree - SD, Disagree - D, Agree - A, Strongly Agree – SA. The instrumented was validated by three experts. The reliability of the instrument was determined by statistical analysis of the data collected from the pilot study which was conducted in Ogbonnaya Onu Polytechnic, which is outside the study area. The correlation between data of test-retest was calculated using Pearson Product Moment Correlation (PPMC). The reliability index obtained is 0.86 which shows that the instrument is reliable. The researchers were able to retrieve 62 copies of the questionnaires from the respondents making approximately 83% returns. Mean rating and standard deviation were used as descriptive statistics to analyze the data. Mean score of 3.50 and above was taken to be strongly agreed, between 2.50 and 3.49 as agreed, 2.0 to 2.49 as disagreed, while below 2.0 as strongly disagreed.

4.0 Results

Research Question 1: What is the role of AI-driven predictive analytics in enhancing Business Intelligence and decision-making processes within organizations?

Table 1: Mean ratings of respondents on the role of AI-driven predictive analytics in enhancing Business Intelligence and decision-making processes within organizations.

N =62

S/N	Items	$\bar{X}$	SD	Remarks
1.	AI-driven predictive analytics provides timely insights that improve organizational decision-making	3.96	.204	SA
2.	Predictive analytics strengthens Business Intelligence by uncovering trends and patterns in data	3.66	.479	SA
3.	AI analytics supports managers in making more informed strategic and operational choices	3.85	.360	SA
4.	Predictive analytics enhances customer or client understanding and engagement	3.91	.282	SA
5.	1. AI-driven Business Intelligence contributes to innovation and competitiveness in the organization.	3.79	.414	SA
	Cluster Mean/SD	3.83	.347	SA

The result in table 1 revealed that majority of the respondents were unanimous in agreeing to all the questionnaire items. This agreement is obvious as the mean scores are all aboe the fixed decision value of 2.50; while the standard is between 0.204 to 0.479 which indicates that there is a low variability in the respondents' responses. The average mean and standard deviation of 3.83 and 0.347 respectively are indicators to this fact. This implies that AI-driven predictive analytics plays a significant role in enhancing Business Intelligence and decision-making processes within organizations.

Research Question 2: How does AI-driven predictive analytics contribute to improved efficiency, accuracy, and strategic planning in organizational decision-making?

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Table 2: Mean ratings of respondents on how AI-driven predictive analytics contributes to improved efficiency, accuracy, and strategic planning in organizational decision making.

N =62

S/N	Items	$\bar{X}$	SD	Remarks
1.	Predictive analytics increases the accuracy of organizational forecasts and projections.	3.85	.306	SA
2.	AI-driven tools enhance efficiency by automating data analysis and reporting	3.62	.479	SA
3.	Predictive analytics supports better resource allocation and operational planning	3.96	.204	SA
4.	AI-driven analytics improves accuracy in identifying opportunities and risks	3.79	.414	SA
5.	Predictive analytics strengthens strategic planning by providing data-driven insights	3.91	.282	SA
	Cluster Mean/SD	3.82	.350	SA

Result in table 2 indicates that the respondents agreed with all the questionnaire items with mean ranging from 3.62 to 3.96, and standard deviation range of .282 to .491 as ways AI-driven predictive analytics contribute to improved efficiency, accuracy, and strategic planning in organizational decision making. The cluster aggregate of mean and standard deviation of 3.82 and 0.350 respectively depicts homogenous opinion of the respondents.

Research Question3: What challenges affect the adoption and effective integration of AI-based predictive analytics in business operations?

Table 3: Mean ratings of respondents on challenges affecting the adoption and effective integration of AI-based predictive analytics in business operation.

N =62

S/N	Items	$\bar{X}$	SD	Remarks
1.	High implementation and maintenance costs limit the adoption of predictive analytics	3.96	.204	SA
2.	Data quality and availability issues hinder effective use of AI-driven analytics.	3.94	.247	SA
3.	Lack of skilled personnel poses challenges to adopting predictive analytics	3.89	.312	SA
4.	Resistance to change among staff slows the integration of AI tools	3.66	.479	SA
5.	Concerns about data privacy and security affect the adoption of predictive analytics	3.89	.312	SA
	Cluster Mean/SD	3.86	.310	SA

Table 3 shows a widely held opinion of the respondents in the unanimous response to the questionnaire items. The agreement is obvious as all the mean scores are well above the fixed decision value of 2.50. the standard deviation of 0.214 to 0.479 indicates a low variability in the respondents' responses. The average mean and standard deviation of 3.86 and 0.310 respectively are indicators that all the items are

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challenges affecting the adoption and effective integration of AI-based predictive analytics in business operations.

Discussion of Findings

The result of the findings in table 1 revealed that AI-driven predictive analytics plays a significant role in enhancing Business Intelligence and decision-making processes within organizations. This is in agreement with Manohara et al., 2024 who opined that integrating Artificial Intelligence and predictive analytics into business operations provides substantial benefits, including enhanced decision-making, operational efficiency, and improved customer experiences.

Result in table 2 shows that all items as regards to how AI-driven predictive analytics contribute to improved efficiency, accuracy, and strategic planning in organizational decision-making were all accepted by the respondents. This implies that AI-driven predictive analytics has contributed in improving the accuracy of organizational forecasts and projections, automating data analysis and reporting, resource allocation and operational planning, identifying opportunities and risks as well as strengthening strategic planning by providing data-driven insights. This finding is in agreement with Jankovic and Curović (2023) who highlighted AI-driven solutions optimizing data collection, analysis, and utilization to improve decision-making and operational efficiency, particularly in sustainable business practices.

The result of the findings in table 3 revealed high implementation and maintenance costs, data quality and availability issues, lack of skilled personnel, and data privacy and security as the challenges affecting the adoption and effective integration of AI-based predictive analytics in business operations. This result is in line with Hurry (2024) and Katragadda (2024) who stated that poor data quality, workforce skills gaps, employee resistance, ethical concerns, and high implementation costs persist as some of the challenges facing effective integration of AI-driven predictive analytics in business operations.

5.0 Conclusion

The study concluded that AI-driven predictive analytics has become an essential tool for enhancing Business Intelligence and improving organizational decision-making processes in the digital economy. The findings showed that the adoption of predictive analytics contributes significantly to operational efficiency, accuracy in forecasting, strategic planning, customer engagement, and effective resource management. Through the use of AI technologies, organizations are better positioned to analyze large volumes of data, predict future trends, minimize risks, and gain competitive advantages in rapidly changing business environments.

Despite these benefits, the study also revealed that several challenges continue to hinder the effective adoption and integration of AI-driven predictive analytics in organizations. These challenges include high implementation and maintenance costs, inadequate data quality and management systems, shortage of skilled personnel, resistance to technological change, and concerns relating to data privacy and cybersecurity. If not properly addressed, these barriers may limit the ability of organizations to fully maximize the transformative potential of AI technologies.

Therefore, the study concludes that organizations seeking sustainable growth and improved performance must not only adopt AI-driven predictive analytics tools but also invest in capacity building, robust data governance, secure digital infrastructure, and supportive organizational policies. Addressing these challenges will enhance the effective utilization of predictive analytics and enable organizations to achieve more informed, efficient, and strategic decision-making in the modern business environment.

Recommendations

1. Organizations should integrate AI-driven predictive analytics into their Business Intelligence systems to enhance organizational decision-making, improve forecasting accuracy, and support evidence-based managerial decisions across business operations.

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2. Management of organizations should encourage the adoption and effective utilization of AI-based predictive analytics tools for strategic planning and operational activities in order to improve efficiency, accuracy, productivity, and overall organizational performance.
3. Organizations, policymakers, and technology providers should address the challenges affecting the adoption of AI-driven predictive analytics by investing in staff training, establishing robust data governance and cybersecurity frameworks, promoting flexible and cost-effective AI solutions, and implementing effective change management strategies to reduce resistance to technological integration.

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OPTIMIZING INFORMATION MANAGEMENT PRACTICES TO ENHANCE THE SUSTAINABILITY OF OFFICE TECHNOLOGY AND MANAGEMENT PROGRAMME IN TERTIARY INSTITUTIONS IN NIGERIA

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Abstract
This study investigated the influence of information management (IM) practices on the sustainability of Office Technology and Management (OTM) programmes in Nigerian tertiary institutions, with emphasis on programme quality, technological adaptability, and curriculum relevance. A descriptive survey research design was adopted, involving 62 lecturers and students drawn from Federal Polytechnic, Ado-Ekiti; Ekiti State University (EKSU); Federal University Oye-Ekiti (FUOYE); and Bamidele Olumilua University of Education, Science and Technology (BUESTI), all in Ekiti State. Total enumeration was used due to the small and accessible population. Data were collected using a structured four-point Likert scale questionnaire, validated through expert review. Instrument reliability was confirmed through a pilot study. Cronbach's Alpha value yielded a reliability coefficient of 0.87, indicating strong internal consistency of the instrument. Data analysis involved descriptive statistics (mean and standard deviation) for answering research questions, while Pearson Product Moment Correlation was used to test the hypothesis at a 0.05 level of significance. Findings indicated a strong positive and significant relationship between IM practices and OTM programme sustainability ($r = 0.68$, $p < 0.05$). The study concluded that information management is a key driver of academic quality, innovation, and long-term programme relevance. It recommended increased investment in ICT infrastructure, continuous staff training, and adoption of data-driven decision-making to strengthen sustainability.

Keywords: Information Management Practices, Office Technology and Management, Sustainability, Tertiary Institutions, Digital Information Systems

1.0 Introduction

The dynamic nature of the modern workplace, driven by rapid technological advancement, demands that educational programmes, particularly vocational and technical education programme such as Office Technology and Management (OTM), remain adaptable, efficient, and relevant. Information Management (IM) plays a pivotal role in ensuring that tertiary institutions can deliver high-quality programmes while maintaining operational efficiency and responsiveness to technological innovations. Effective IM encompasses the systematic collection, processing, storage, and dissemination of information, which enables informed decision-making and strategic planning and maintain high-quality programme delivery (Adepoju, 2021; Chukwuemeka & Okafor, 2022).

In the 21st-century educational landscape, the sustainability of academic programmes, particularly in Office Technology and Management, relies heavily on effective information management practices. Tertiary institutions in Nigeria are tasked and are under increasing pressure to produce graduates who possess the digital competencies, communication skills, and information management capabilities required in contemporary work environment. Consequently, the effectiveness of information management practices within these institutions has become a crucial determinant of programme quality and long-term sustainability.

In Nigeria, the Office Technology and Management programme is designed to equip students with competencies in office administration, and the use of modern technological tools for information processing and management. The programme is crucial for preparing graduates to function effectively in a digital work environment. However, the sustainability of the programme depends on the extent to which institutions effectively integrate digital technologies into teaching learning processes. Sustainability of academic programmes such as OTM goes beyond longevity; it involves continuous improvement in curriculum relevance, teaching quality, administrative processes, and alignment with

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industry trends. In the present day reality, for Office Technology and Management programmes in Nigerian tertiary institutions, sustainability indicators include quality of programme delivery, administrative efficiency, adaptability to technological changes, and the continuous relevance of the curriculum. However, limitations such as inadequate infrastructure, weak policy frameworks, insufficient stakeholder competence frequently constrain optimal utilization and resistance to technology adoption have been identified as constraints to achieving these sustainability goals (Okereke & Eze, 2019; Adebayo & Ogunleye, 2020).

Sustainability in academic programmes extends beyond the mere continuation of such programmes but the extent to which institutions successfully integrate information and communication technologies into teaching, learning, administration, and decision-making processes. It encompasses continuous improvement in curriculum relevance, teaching effectiveness, administrative efficiency, innovation, and responsiveness to changes within the professional environment. In the Office Technology and Management, indicators of programme sustainability include the quality of programme delivery, efficient administrative processes, adaptability to emerging technologies, stakeholder satisfaction, and the continued alignment of the curriculum with industry 4.0 expectations. Despite these expectations, several challenges hinder the attainment of these sustainability objectives. Okereke & Eze, (2019); Adebayo & Ogunleye, (2020) identified inadequate technological infrastructure, weak policy implementation frameworks, insufficient staff competencies, limited institutional support, and resistance to technological change as major constraints affecting the effective utilization of information management practices in tertiary institutions.

Optimizing information management practices therefore provides a strategic pathway for enhancing the sustainability of OTM programmes in Nigerian tertiary institutions. Through effective management of information resources, institutions can improve decision-making processes, facilitate efficient programme administration, support innovation in teaching and learning, and ensure that graduates acquire competencies that align with evolving labour market demands. This approach can help guarantee that OTM programmes remain relevant, responsive, and capable of meeting contemporary professional standards while preserving their quality and integrity.

Statement of the Problem

Despite the recognized importance of Office Technology and Management programme in equipping students with essential administrative and technological skills, many tertiary institutions in Nigeria struggle with sustaining programme quality and relevance. With key challenges include limited capacity to integrate emerging technologies into teaching, learning, and administrative processes, curricula that quickly become outdated due to inadequate monitoring of industry trends and technological innovations and insufficient mechanisms for continuous evaluation of programme effectiveness, resulting in misalignment with current professional standards. The OTM programme, which is expected to produce graduates with strong digital and information management competencies, is particularly affected by inadequate ICT infrastructure, insufficient funding, and lack of continuous staff training limit the effective integration of modern information management practices. These gaps highlight the need for research into how effective information management practices can enhance the sustainability of OTM programmes by improving administrative efficiency, programme quality, technological adaptability, and curriculum relevance.

Objectives of the Study

1. To examine the extent to which effective information management practices can impact the quality of OTM programme delivery in Nigerian tertiary institutions.
2. To evaluate the role of information management in facilitating adaptability to technological changes in OTM programmes.
3. To determine the contributions of information management practices to the continuous relevance of OTM curricula in response to industry demands.

Research Questions

1. To what extent has information management practices impacted on the quality of OTM programme delivery in Nigerian tertiary institutions?
2. What are the roles of information management in facilitating adaptability to technological changes in OTM programmes?

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3. What are the contributions of information management practices to the continuous relevance of OTM curricula in response to industry demands?

Hypothesis

$H_0$1: There is no significant relationship between effective information management practices and the sustainability of Office Technology and Management programmes in Nigerian tertiary institutions.

Significance of the Study

The study is of important to institutional administrators, policy-makers, lecturers, students, and researchers by providing empirical evidence on how effective information management practices can enhance the sustainability of Office Technology and Management (OTM) programmes in tertiary institutions. The study is expected to guide policy formulation and decision-making relating to digital infrastructure, information governance, and quality assurance, while assisting lecturers in improving instructional delivery through the adoption of innovative information management practices. It also benefits students' by enhancing the quality of programme delivery and equipping them with relevant competencies required in contemporary workplaces. In addition, the study contributes to existing literature by deepening scholarly understanding of the relationship between information management practices and programme sustainability within the Nigerian tertiary education context, serving as a valuable reference for future researchers. Ultimately, the findings may encourage tertiary institutions to adopt strategic and technology-driven approaches to information management, thereby strengthening the relevance, competitiveness, and long-term sustainability of OTM programmes in preparing graduates for the demands of the modern world of work.

2.0 Literature Review

Theoretical Framework

This study is anchored on the **Information Systems Success Model (ISSM)** developed by William H. DeLone and Ephraim R. McLean (1992) and later updated in 2003. The model posits that the success of information systems depends on the quality of the system, the quality of information generated, and the quality of services provided. These dimensions influence system use, user satisfaction, and ultimately produce positive organizational outcomes.

The relevance of this theory to the present study lies in its emphasis on the effective management and utilization of information systems to achieve institutional effectiveness. In tertiary institutions, information management practices involve the deployment of technologies and procedures that facilitate the generation, storage, dissemination, and utilization of accurate and timely information. When these practices exhibit high levels of information quality, system quality, and service quality, they contribute significantly to improved administrative efficiency, enhanced decision-making, effective programme delivery, and continuous programme improvement.

The Information Systems Success Model therefore provides a suitable framework for explaining how optimized information management practices can influence the sustainability of Office Technology and Management programmes. It suggests that institutions capable of effectively managing information resources are more likely to maintain programme quality, adapt to technological changes, and sustain the relevance of OTM education in an increasingly digital environment.

Information Management Practices and Quality of Programme Delivery

Globally, digital instructional tools and technology integration have been shown to support professional development among faculty, improve teaching practices, and facilitate adaptive learning strategies, thereby enhancing overall programme quality. It is therefore evident that instructional technology integration is positively correlated with teaching effectiveness, student engagement, and achievement of learning objectives. The concept of **quality of programme delivery** entails how effectively an academic programme meets its instructional goals through teaching effectiveness, learning outcomes, and student satisfaction. The adoption of information technologies including Learning Management Systems (LMS) and digital platforms has been linked with enhanced instructional delivery and improved academic outcomes. LMS platforms such as Canvas and Moodle contribute significantly to effective instructional delivery through features like content posting, real-time feedback, and performance tracking.

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In Nigerian tertiary institutions specifically, the integration of technology in instructional delivery remains uneven due to infrastructural limitations, digital literacy challenges, and policy constraints, such practices are associated with quality enhancement in academic programmes such as Office Technology and Management programmes. Akanbi (2021) postulated that the quality of programme delivery is determined by how well an academic programme meets its instructional objectives, including teaching effectiveness, student learning outcomes, and satisfaction. Effective instructional delivery is linked to accessible and well-managed information systems that ensure faculty have timely access to learning resources, assessment data, and instructional feedback mechanisms, The scholar emphasized that digital platforms facilitate synchronous and asynchronous learning, enabling instructors to engage students more effectively, monitor academic progress in real time and coordinate course content delivery which in the long-run improve assessment tracking evidently.

Okeke (2021) and Adebayo & Ogunleye (2020) asserted that sustainability in educational programmes involves maintaining the quality, relevance, and effectiveness of the curriculum over time. It includes the ability to respond to technological changes, adapt curricula to evolving industry needs, and ensure administrative processes support effective programme delivery. These studies showed that programmes with integrated IM systems tend to exhibit higher sustainability because they can track outcomes, monitor resource use, and adjust delivery methods proactively. Also, Onuoha & Udeh (2019) suggested that IM practices directly influence sustainability indicators. For instance, real-time data analytics facilitate continuous curriculum assessment, ensuring programmes remain relevant. IM also supports technological adaptability by providing platforms for integrating e-learning, online assessments, and collaborative digital tools. These practices contribute to higher quality programme delivery and more responsive teaching and learning environments (Oluwaseun, 2020).

Information Management Practices and Adaptability to Technological Changes

Adaptability to technological changes refers to an institution's capacity to integrate new technologies such as e-learning tools, online assessments, and digital collaboration platforms into instructional delivery in OTM. Contemporary education systems are characterized by rapid technological evolution, and institutions that adapt quickly are better positioned to remain competitive and responsive to stakeholders' needs. According to Adeyemi & Fagbemi (2022), institutions that invest in modern information systems and information management practices that support digital literacy, facilitate ongoing training, adopt e-learning, blended learning, mobile learning platforms, and provide reliable data infrastructures report measurable improvements leading to enhanced access and flexibility in programme delivery (Johnson et al., 2020).

Office Technology and Management programme is inherently technological, requiring students to acquire competencies in office automation tools, digital communication systems, and information management software. However, Akanbi & Adesina (2020) and Ololube (2017) opined that many Nigerian tertiary institutions lag in integrating digital instructional tools such as Learning Management Systems (LMS), virtual classrooms, and multimedia teaching resources these studies note that limited access to e-learning platforms impedes experiential learning and reduces students' readiness for digital workplace environments (Okoye & Nwankwo, 2019; Chukwuemeka & Orji, 2022). Deprived of these technologies, instruction in OTM remains mainly traditional and text-based, which diminishes opportunities for active learning and weakens students' acquisition of key competencies needed in modern digital economy (Adebayo, 2020). Consequently, graduates may enter the real-world of work lacking critical practical skills, a gap that negatively affects programme sustainability.

In Nigerian tertiary institutions, adaptability is often constrained by factors such as limited funding, infrastructural gaps, and resistance to change among staff. However, where intentional IMP strategies have been implemented including investment in digital platforms and continuous professional development, institutions report higher readiness and uptake of technological tools, which in turn support the continuity of teaching and learning processes (Madu & Akpan, 2019).

Curriculum Obsolescence and Misalignment with Industry Needs

Curriculum relevance is increasingly critical in a globalized knowledge economy. It refers to the degree to which programme content aligns with current industry trends, equips students with marketable skills, and improves graduates' employability. Effective information management practices provide data from

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internal assessments, labour market trends, employer feedback, and alumni outcomes, which are essential for curriculum review and redesign. A sustainable OTM programme must reflect current industry standards. Though, rapid technological change outpaces curriculum review cycles in many institutions (Nworgu & Nwagbara (2018), Omotayo et al. (2021). Lack of regular revision makes programme content becomes outdated, producing graduates with skills mismatched to global market needs (Bello & Ahmed, 2020). Industry linkages are essential but often weak or absent. In the opinion of Ibrahim & Bello (2022) and Ajayi & Yusuf (2021), when educational bodies and policy makers engage in curriculum review, update and redesign, programme relevance improves significantly Conversely, limited stakeholder engagement perpetuates misalignment between industry expectations and graduate competencies, undermining the sustainability of the programmes.

Curriculum relevance in OTM refers to the alignment of programme content with industry trends, market demands, and requisite skills for employability. Effective information management practices provide data and insights that can inform curriculum review processes, facilitate stakeholder engagement, and support evidence-based curriculum redesign. Technology-based quality assurance systems help monitor curriculum outcomes, track graduate performance, and support data-driven curriculum adjustments to meet evolving industry needs. The integration of curriculum relevance with information management aligns with global calls for educational programmes to be dynamic and responsive to labour market changes. Digital tools and data analytics offer mechanisms for continuous curriculum evaluation and redesign, ensuring that programmes remain current and relevant. Practical learning environments and experience is a cornerstone of OTM education as it enable students to interact with office technologies in controlled settings, building confidence and proficiency. Yet many institutions lack adequate laboratories, simulation software, or internship opportunities necessary for hands-on training (Madu & Akpan, 2019; Obikwelu & Okafor, 2022). Similarly, Ugwu & Eze (2020), posited that the absence of experiential learning and structured internships students often struggle to apply theoretical knowledge to real-world tasks, which weakens students' transition to the workplace and as well diminishes their competitiveness and devalues the programme.

In Nigeria, the push towards digital learning environments has shown that ICT-supported programmes tend to report better student engagement and performance outcomes, even though challenges such as intermittent power supply and limited internet connectivity persist (Oladapo & Ogundele, 2021). IMP enhances teaching effectiveness by providing a reliable evidence base upon which instructional strategies can be designed, evaluated, and refined. The long-term sustainability of Office Technology and Management (OTM) programmes hinges not just on institutional investment, but also on the strength of pedagogical strategies that underpin curriculum delivery, skills development, and relevance to industry. Studies have shown that educators in tertiary institution across Nigeria are reluctant to adopt modern teaching methods despite evidence that student-centered and technology-enhanced pedagogies yield higher engagement and deeper learning (Salawu, 2021), as a result traditional lecture-based approaches still dominate our teaching and learning environment (Akinsanya & Adegbite, 2019; Oyelekan & Olaleye, 2020). According to Onyema et al., (2018), this resistance is often attributed to insufficient professional development, fear of technology use, and institutional inertia. Once lecturers lack training to integrate digital tools, innovation in instruction stagnates, limiting the programme's ability to produce dynamic and adaptable graduates.

OTM programmes lack assessment systems that reflect both theoretical understanding and practical proficiency as well as robust digital assessment tools capable of tracking competency development over time. Fapohunda, (2019) and Adeoye & Falola, (2021), emphasize that without reliable tools for evaluating real-world skills, instructors cannot accurately measure learning gaps or guide student improvements. Moreso, Osadebe & Emunemu, (2020) postulate that traditional paper-based evaluations fail to capture competencies in digital environments, resulting in inflated theoretical scores but weak practical performance and stress that the absence of effective practical proficiency assessment and feedback produce students who graduate without mastering essential skills, thereby jeopardizing the programme's reputation and sustainability.

On the other hand, pedagogical effectiveness is also constrained by infrastructural and financial limitations. Scholars such as Igbokwe et al., (2018), and Afolabi & Ogunyemi, (2020), identify resource scarcity like inadequate funding, insufficient ICT infrastructure, and large class sizes among

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others as barriers to quality instruction. These limitations restrict access to necessary teaching aids and prevent personalized instruction. Large class sizes dilute instructional quality and limit individual mentoring, especially in practicum settings where students require hands-on guidance (Adewumi & Oladipo, 2021). Thus, pedagogical challenges are not only instructional but also systemic, requiring strategic resource allocation. Hence, OTM programmes will continue to struggle to produce graduates with competencies aligned to industry demands. Addressing these challenges is critical to strengthening the pedagogical foundation of OTM and ensuring its long-term sustainability.

3.0 Methodology

This study adopted a descriptive survey research design to examine the relationship between information management (IM) practices and the sustainability of Office Technology and Management (OTM) programmes in selected public tertiary institutions in Ekiti State, Nigeria. The population comprised sixty-two (62) academic staff and graduating students from the Departments of Office Technology and Management in Federal Polytechnic, Ado-Ekiti; Ekiti State University (EKSU), Ado-Ekiti; Federal University Oye-Ekiti (FUOYE); and Bamidele Olumilua University of Education, Science and Technology (BUESTI), Ikere-Ekiti. Given the manageable population size, total enumeration was employed. Data were collected using a researcher-developed structured questionnaire comprising demographic items and statements on information management practices and programme sustainability indicators, including quality of programme delivery, administrative efficiency, adaptability to technological changes, and curriculum relevance. The questionnaire utilized a four-point Likert scale ranging from Strongly Agree to Strongly Disagree. Face and content validity were established through expert review, while a pilot study conducted outside the study area was used to determine reliability using Cronbach's Alpha with a coefficient of 0.87. Ethical standards were upheld through institutional approval, informed consent, voluntary participation, and assurances of confidentiality and anonymity. Data obtained were analyzed using the Statistical Package for the Social Sciences (SPSS). Mean and standard deviation were used to answer the research questions, while Pearson Product Moment Correlation (PPMC) was employed to test the hypothesis at a 0.05 level of significance to determine the relationship between IM practices and the sustainability of OTM programmes.

4.0 Resuslts

Research Question 1: To what extent has information management practices impacted on the quality of OTM programme delivery in Nigerian tertiary institutions?

Table 1: Impact of Information Management Practices on Quality of OTM Programme Delivery

S/N	Statement	X	SD
1	Digital records of teaching and learning materials are accurately maintained in my institution to improve the quality of OTM programme delivery.	2.87	1.02
2	The OTM programme relies on effective database management for monitoring students' progress and accurate tracking of their performance.	2.95	0.98
3	Communication platforms (email, intranet, messaging apps) are efficiently used to disseminate information relevant to teaching and learning.	2.89	1.01
4	Information relevant to OTM programme delivery is readily accessible to staff and students.	3.00	0.95
5	Effective information management practices enhance teaching effectiveness in the OTM programme.	3.05	0.93
6	Reliable information systems contribute to improved student learning outcomes in OTM programme.	3.02	3.96
7	Information management practices significantly impact overall student satisfaction and efficiency of OTM programme delivery.	2.91	1.04

Mean Threshold: If the mean is 0.000-1.499 = Strongly Disagree (SD), 1.500-2.499 = Disagree (D), 2.500-3.499 = Agree (A) and 3.500-4.449 = Strongly Agree (SA).

The table presents perceptions of how information management practices has impacted on the quality of OTM programme delivery. The mean scores range from 2.87 to 3.05, while the standard deviations

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range from 0.93 to 1.04. This shows a consensus that effective information management practices positively enhance teaching, learning, and administrative processes within the OTM programme. It was revealed in the results that digital records of teaching and learning materials are accurately maintained to improve programme delivery with mean (2.87) and SD (1.02), suggesting that record-keeping systems play a supportive role in instructional quality. Likewise, the use of effective database management for monitoring student progress and performance tracking was affirmed with mean (2.95), SD (0.98), representing that data systems are essential for academic monitoring and evaluation.

In the same vein, mean (2.89) and SD (1.01) acknowledged communication platforms such as email, intranet, and messaging applications as effective tools for information dissemination. This reflects their role in ensuring timely academic communication. Besides, information relevant to programme delivery is readily accessible to both staff and students scored mean and SD (3.00, 0.95) respectively, showing improved information availability as a key benefit of structured systems. In addition, effective information management practices were found to enhance teaching effectiveness (mean 3.05, SD 0.93), which characterizes the peak mean score, indicating a strong perceived impact on instructional delivery. Reliable information systems were also reported to improve student learning outcomes (mean = 3.02, SD = 0.96), reinforcing the link between data systems and academic performance. The results highlighted that information management practices positively influence student satisfaction and the efficiency of programme delivery (mean = 2.91; SD = 1.04). The findings reveal that structured information management practices significantly improve the quality of OTM programme delivery by enhancing teaching effectiveness, supporting student monitoring, improving communication flow, and increasing accessibility of academic information.

Research Question 2: What are the roles of information management in facilitating adaptability to technological changes in OTM programmes?

Table 2: Roles of Information Management in Facilitating Adaptability to Technological Changes

S/N	Statement	X	SD
1	The use of digital tools in OTM programmes is supported by the institution's information management practices.	2.88	1.06
2	Information management systems facilitate the adoption of e-learning platforms for OTM students.	2.84	1.09
3	Online assessment tools are efficiently integrated into the OTM programme through proper information management.	2.80	1.12
4	Staff and students adapt more easily to technological changes due to organized information management practices.	2.93	1.00
5	Communication platforms improve staff and student responsiveness to technological changes.	2.96	0.98
6	Information management practices reduce challenges when adopting new OTM technologies.	2.85	1.05
7	The institution's information systems encourage continuous adaptation to emerging digital trends.	2.90	1.02

Mean Threshold: If the mean is 0.000-1.499 = Strongly Disagree (SD), 1.500-2.499 = Disagree (D), 2.500-3.499 = Agree (A) and 3.500-4.449 = Strongly Agree (SA).

The results show that information management practices play a significant role in facilitating adaptability to technological changes in OTM programmes. The mean scores range from 2.80 to 2.96, with standard deviations between 0.98 and 1.12. This specifies a relatively consistent perception that information systems support technological adjustment processes within the academic environment. The result reflected that institutional information management practices support the use of digital tools in OTM programmes with mean and standard deviation range (2.88, 1.06), representing that ICT integration is enabled by structured systems. Similarly, information management systems were perceived to facilitate the adoption of e-learning platforms with mean 2.84 and SD 1.09), suggesting that digital learning environments are strengthened by effective data handling systems.

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On the other hand, online assessment tools were also reported to be integrated through proper information management showing mean (2.80), SD (1.12), although this represents the least mean score, signifying challenges may still exist in fully optimizing assessment technologies. Nevertheless, the outcomes agreed with mean (2.93) and SD (1.00) that staff and students adapt more easily to technological changes due to organized systems, reflecting improved adaptability. Communication platforms were found to enhance responsiveness to technological changes (mean 2.96, SD 0.98), which is the maximum mean score, emphasizing the importance of communication efficiency in adaptation processes. Furthermore, information management practices were seen to reduce challenges in adopting new technologies (mean = 2.85, SD 1.05), while institutional systems were found to encourage continuous adaptation to emerging digital trends (mean 2.90, SD 1.02). Conclusively, the results advocate that information management systems play a crucial role in supporting technological adaptability by enhancing communication, facilitating e-learning adoption, and promoting continuous digital adjustment within OTM programmes.

Research Question 3: What are the contributions of information management practices to the continuous relevance of OTM curricula in response to industry demands?

Table 3: Contributions of Information Management Practices to Curriculum Relevance

S/N	Statement	X	SD
1	Information management practices support alignment and regular updates of the OTM curriculum with current industry trends.	2.94	1.01
2	Data collected and stored effectively through information systems informs curriculum improvements that enhance skill development.	2.97	0.99
3	Information management practices ensure that the OTM programme remains meet and aligned with employability demands of graduates.	2.92	1.03
4	Organized information contributes to maintaining the relevance and competitiveness of the OTM programme.	2.96	0.97
5	Information management practices help identify gaps in the OTM curriculum for continuous improvement.	2.89	1.04
6	Feedback from industry stakeholders is effectively captured and utilized through information management to maintain curriculum relevance.	2.86	1.08
7	Proper database management allows timely updates to course content based on industry feedback.	2.93	1.00
8	Communication systems enable effective consultation with industry stakeholders on curriculum design.	2.90	1.03

Mean Threshold: If the mean is 0.000-1.499 = Strongly Disagree (SD), 1.500-2.499 = Disagree (D), 2.500-3.499 = Agree (A) and 3.500-4.449 = Strongly Agree (SA).

The table reveals that information management practices contribute significantly to the continuous relevance of OTM curricula in line with industry demands. The mean scores range from 2.86 to 2.97, all within the "Agree" category, while standard deviations range from 0.97 to 1.08. This indicates a consistent perception that information systems support curriculum development and industry alignment processes. Correspondently, the result reveal that information management practices support alignment and regular updates of the OTM curriculum with industry trends with mean (2.94), SD (1.01), highlighting the importance of structured systems in curriculum review processes. The study also reported to inform curriculum improvements and skill development with mean (2.97), SD (0.99), which represents the highest mean score, indicating strong agreement on the role of data in curriculum enhancement.

Moreover, it was indicated that information management ensures curriculum alignment with employability demands, while organized information contributes to maintaining programme relevance and competitiveness with 2.92, 2.96 mean and 1.03, 0.97 SD respectively. This suggests that data-driven systems support academic quality and labour market alignment. In addition, information management practices were found to help identify curriculum gaps for continuous improvement (Mean = 2.89; SD = 1.04), whereas feedback from industry stakeholders is effectively captured and utilized (Mean = 2.86; SD = 1.08), although this is the lowest mean, indicating room for improvement in stakeholder engagement processes. Proper database management was also stated to allow timely

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curriculum updates based on industry feedback with mean (2.93) and SD (1.00), and communication systems were found to facilitate consultation with industry stakeholders (Mean = 2.90; SD = 1.02). The findings therefore indicate that information management practices significantly contribute to curriculum relevance by enabling data-driven updates, strengthening industry collaboration, identifying curriculum gaps, and ensuring alignment with employability requirements.

Testing of Hypothesis

H_o1: There is no significant relationship between effective information management practices and the sustainability of Office Technology and Management (OTM) programmes in Nigerian tertiary institutions.

Table 4: Correlation analysis showing the relationship between information management practices and sustainability of OTM programmes.

Variables	Information Management Practices	Sustainability of OTM Programmes
Information Management Practices	1.00	0.68**
Sustainability of OTM Programmes	0.68**	1.00
N	62	62

Correlation is significant at 0.01 level (2-tailed)

The Pearson Product Moment Correlation analysis revealed a statistically significant positive relationship between effective information management practices and the sustainability of OTM programmes in Nigerian tertiary institutions ($r = 0.68$, $df = 60$, $p = 0.000$). The degrees of freedom were obtained using the formula, ($df = n - 2$), where ($n = 62$), resulting in ($df = 60$). Since the calculated p-value (0.000) is less than the 0.05 level of significance, the null hypothesis was rejected. This indicates that improvements in information management practices, such as effective digital record keeping, efficient communication systems, database management, and the integration of ICT tools, are significantly associated with enhanced sustainability of OTM programmes. For the purpose of this study, sustainability of OTM programmes was operationally defined as the programme's capacity to maintain its quality, relevance, responsiveness, and effectiveness in meeting evolving educational and workplace demands. The construct was measured using composite scores derived from four indicators identified in Research Questions 1–3: quality of programme delivery (effective teaching, learning outcomes, accessibility of information, and student satisfaction); adaptability to technological changes (adoption of digital tools, e-learning platforms, online assessments, and responsiveness to emerging technologies); curriculum relevance (alignment with industry requirements, identification of curriculum gaps, and utilization of stakeholder feedback); and administrative efficiency (effective communication, database management, and information accessibility). Higher composite scores represented stronger perceptions that OTM programmes possessed the ability to remain relevant, competitive, technologically responsive, and capable of producing graduates whose competencies align with contemporary labour market expectations.

Based on the result, the null hypothesis (H_o1) is rejected. Therefore, there is a significant positive relationship between effective information management practices and the sustainability of Office Technology and Management programmes in Nigerian tertiary institutions.

Discussion of Findings

The study further revealed that information management practices facilitate adaptability to technological changes within OTM programmes. This finding indicates that organized information systems create enabling conditions that support the adoption of digital tools, e-learning platforms, and emerging educational technologies. In an era characterized by rapid technological disruption, the ability of institutions to adapt has become a critical determinant of programme sustainability. The findings align with the Unified Theory of Acceptance and Use of Technology (UTAUT), which identifies facilitating conditions as important predictors of technology acceptance and use. Similarly, Bond et al. (2024) observed that institutions with robust information management systems demonstrate greater resilience and adaptability during periods of technological transition. Nevertheless, contrary findings have been reported by Al-Fraihat et al. (2020), who found that technological adaptability is often constrained by organizational culture, resistance to change, and inadequate digital literacy, even

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when technological infrastructure is available. The relatively lower ratings obtained for online assessment tools and e-learning adoption in this study appear to support this argument. Therefore, beyond investing in digital infrastructure, institutional managers should prioritize change management initiatives, digital literacy programmes, and stakeholder engagement strategies that encourage acceptance and effective utilization of technological innovations.

Another important finding of the study is that information management practices contribute significantly to maintaining the relevance of OTM curricula in response to changing industry demands. This suggests that information generated through institutional databases, stakeholder feedback mechanisms, and communication systems provides valuable insights for curriculum review and continuous improvement. As labour market expectations continue to evolve due to automation, artificial intelligence, and digital transformation, curriculum responsiveness has become indispensable for graduate employability. This finding corroborates UNESCO (2023) and the World Economic Forum (2025), which advocate the use of labour market intelligence and data-driven planning in curriculum development. It also supports recent Nigerian studies emphasizing the importance of industry partnerships in promoting skills alignment and graduate competitiveness. However, divergent evidence exists. For example, Chigbu and Onyia (2022) observed that although institutions recognize the value of stakeholder engagement, bureaucratic processes and rigid regulatory frameworks often delay curriculum revisions, thereby limiting responsiveness to industry changes. The lower ratings relating to the utilization of industry feedback in this study may reflect these practical constraints. Consequently, tertiary institutions should institutionalize periodic curriculum reviews, strengthen partnerships with employers and professional bodies, and establish efficient feedback systems that facilitate timely updates of OTM course content.

The significant positive relationship found between information management practices and the sustainability of OTM programmes underscores the strategic importance of information management in contemporary tertiary education. Sustainability, operationalized in this study as quality programme delivery, technological adaptability, administrative efficiency, and curriculum relevance, appears to depend substantially on the institution's capacity to manage information effectively. This finding suggests that information management should no longer be viewed merely as an administrative function but as a strategic mechanism for achieving programme continuity, innovation, and competitiveness. The practical implication is that institutional leaders and policymakers should integrate information management into strategic planning, allocate adequate resources for digital infrastructure, and formulate policies that promote data-driven decision-making. Such interventions would not only enhance the sustainability of OTM programmes but also strengthen their ability to prepare graduates with competencies relevant to the evolving world of work.

Overall, the findings demonstrate that effective information management practices represent an indispensable foundation for sustaining Office Technology and Management programmes in Nigerian tertiary institutions. However, realizing their full potential requires a holistic approach that combines technological investment with human capacity development, supportive policies, organizational readiness, and stronger collaboration with industry stakeholders. Addressing these factors will enable institutions to translate information management capabilities into improved educational outcomes, increased programme relevance, and long-term sustainability.

5.0 Conclusion

The study concludes that effective information management practices are central to the sustainability of Office Technology and Management (OTM) programmes in Nigerian tertiary institutions, as they significantly enhance programme delivery, strengthen teaching effectiveness, improve student monitoring, and ensure efficient communication and access to academic information. The findings further establish that well-structured information systems support adaptability to technological changes by enabling the integration of digital tools, e-learning platforms, and online assessments, although their effectiveness is influenced by factors such as digital literacy, institutional readiness, and organizational culture. In addition, information management practices were found to promote curriculum relevance by facilitating data-driven decision-making, stakeholder feedback utilization, and alignment with industry needs, despite challenges posed by regulatory and institutional constraints. Overall, the study demonstrates a significant positive relationship between information management practices and OTM

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programme sustainability, indicating that sustainability is strengthened not merely by technology availability but by strategic management, capacity building, and institutional commitment to continuous improvement and innovation.

Recommendations

1. Government and institutional authorities should formulate and implement comprehensive policies that ensure adequate and sustainable funding for ICT infrastructure, promote innovation in teaching and learning, and support efficient programme delivery. The full integration of information management technologies such as Learning Management Systems (LMS), student information systems, and digital assessment tools is also recommended to improve teaching effectiveness, student monitoring, communication flow, and overall academic service delivery.
2. Institutions should prioritize continuous capacity-building programmes aimed at equipping staff and students with relevant digital skills needed for effective adaptation to emerging technologies. Furthermore, institutional leadership should promote change management strategies that encourage acceptance and effective utilization of technological innovations, thereby reducing resistance to change and enhancing institutional readiness for digital transformation in OTM programmes.
3. Curriculum development and review processes should be strictly evidence-based, drawing on data from institutional information systems such as labour market intelligence, employer feedback, graduate performance records, and student achievement data. Institutions should also establish and strengthen partnerships with industry stakeholders to facilitate collaborative curriculum design, internship placements, and experiential learning opportunities.

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DETERMINANTS OF STUDENTS' SPECIALIZATION CHOICES IN BUSINESS EDUCATION: A STUDY ON THE LOW ENROLMENT IN OFFICE TECHNOLOGY AND MANAGEMENT EDUCATION (OTME)

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Abstract
This study examined the determinants of students' specialization choices in Business education, focusing on the low enrolment in Office Technology and Management Education option (OTME) in Colleges of Education in Ondo State. Specifically, the study examined the influence of students' perception, career prospects, peer and parental influence and institutional factors on enrolment decisions, in comparison with other business education programmes such as Accounting, Entrepreneurship and Marketing options. A descriptive survey research design was employed for the study. The population comprised 80 Part III undergraduate Business Education students at the point of choosing their specialization. There was no need for sampling hence a census. A structured questionnaire was used for data collection, validated by experts. The internal consistency of the instrument was determined using Cronbach alpha with a correlation coefficient of 0.85. Data collected were analyzed using mean and standard deviation. Findings revealed that career prospects, negative perception of OTME, peer influence, societal and parental influence and institutional factors contribute to its low enrolment and significantly affects specialization choices. The study concludes that students' specialization in business education is influenced by a combinations of career prospect, students perception and awareness levels. It was recommended among others that OTM lecturers should promote the relevance and career opportunities associated with OTME, institutions should upgrade ICT facilities.
Keywords: Business Education, Enrolment, OTM, Specialization Choice.

1.0 Introduction

Business education is one of the major components of vocational education. In Nigeria, business education is offered at both the secondary and tertiary levels of education. Business Education is one of the basic foundations upon which the students build an awareness and understanding of business concept.

Business education is a programme of study, which provides individuals with learning experiences in specific knowledge and skills in identified business areas as well as general education, thus equipping them with competencies for the business world. (Okon, 2020) Business Education prepares beneficiaries for gainful employment and sustainable livelihood. It is generally seen as education for and about business. It is an education that provides knowledge and understanding of the economic, financial, marketing, accounting, management system and other branches of business endeavours. Hence, education about business prepares students to function intelligently as consumers and citizens in a business economy.

There are four different options in the field of business education as practiced in Nigeria. They are accounting education, entrepreneurship education, marketing/distributive education and office technology and management education (OTM) formerly known as secretarial studies. Generally, the ultimate aim of business education, as an integral part of technical and vocational education and training programme (TVET) is to provide graduates with the appropriate skills that will enable them to be versatile in their business endeavor to meet the economic needs through engagement in the world of work as employees as well as self employed. Thus, the national policy on education in Famiwole and Akindula (2016) defined vocational education as a comprehensive term referring to those aspects of the educational process involving, in addition to general education, the study of technology and related sciences and the acquisition of practical skills, attitudes, understanding and knowledge relating to occupations in various sectors of economic and social life.

Furthermore, Osuala (2004) defined business education as a programme of instruction, which consists of two parts, office education which is a vocational programme for office workers and general

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education which is a programme that provided information and competencies needed for managing business. Business Education (of which OTM is part) prepares individuals for teaching business subjects as well as provide them with the knowledge skills and attitudes needed for successful business. In the realization of this, business education programme was designed in a way that all business education students offered all the core courses in the first two years to have general knowledge of the content of business education before specialization on one of the options where they are trained in the related skills. This is to achieve the objectives of National Commission on Colleges of Education (2020) which states that business education graduates are to be equipped with the right skills that will enable them to engage in the world of work as well as for self-employment. In order to achieve this objective, there are some skill and core courses that must be offered by OTM students. These include keyboarding, shorthand, computer appreciation and application, office management, small business, office practice and entrepreneurship education in business education among others. The technological development in information communication technology has increased the array of opportunities available for people who possess adequate mastery of the knowledge of keyboarding and other ICT skills. By this, keyboarding skills have become one of the important skills required in the world of work as the use of computer has tended to dominate today's business environments.

The choice of specialization is influenced by multiple factors including career prospects, personal interest, peer influence, societal perception, and parental expectations. Students often prefer disciplines perceived to offer better employment opportunities and social recognition. Unfortunately, OTM is sometimes viewed as less prestigious, which may discourage students from selecting it.

This study therefore investigates the determinants of students' specialization choices in Business Education, with particular attention to the factors responsible for the low enrolment in OTM.

Statement of the Problem

The field of Office Technology and Management Education (OTME) option is designed to equip students with diverse competencies in areas such as office administration, information technology, records management, and communication systems. As the discipline evolves in response to technological advancements and labor market demands, students are often required to choose areas of specialization that align with their interests and career aspirations. However, it has been observed by the researcher that for the past five sessions (2020-2025), students' specialization choices in OTM were not always guided by informed decision-making; instead, these choices may be influenced by factors such as peer pressure, parental expectations, limited awareness of career opportunities, academic performance, or perceived ease of certain specializations, and in some cases, institutional constraints such as inadequate facilities, irregular power supply to power computer laboratory, or course offerings also play a significant role. This situation raises concerns because inappropriate or poorly informed specialization choices can lead to low academic motivation, poor performance, skill mismatch, and reduced employability after graduation. Therefore, there is a need to systematically investigate the determinants of students' specialization choices in Office Technology and Management Education (OTME).

Purpose of the Study

The main purpose of this study was to investigate the factors that determine low students' enrolment into office technology and management education (OTME) in Colleges of Education in Ondo State. Specifically, the study seeks to:

1. examine how students' perceive office technology and management education in colleges of education in Ondo state.
2. determine the influence of career and employment factors on students' choice of office technology and management education in colleges of education in Ondo state.
3. find out how parental expectations and peer group opinion influence their choice of office technology and management education in colleges of education in Ondo state.
4. find out how the society perceive office technology and management education in colleges of education in Ondo state.
5. identify how institutional factors affecting enrolment of students' in office technology and management education in colleges of education in Ondo state.
6. assess the level of awareness and career guidance influence on students' choice of office technology and management education in colleges of education in Ondo state.

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Research Questions

1. How do students perceive office technology and management education option compare to other business education specialization?
2. How does the career and employment factors influence students decisions to specialize in office technology and management education option.
3. How do parental expectations and peer impact students' enrolment in office technology and management education option?
4. How do societal perceptions of certain business specialization influence students' decision to enroll in office technology and management education?
5. How do the resources available at the institution (such as standard computer laboratories, regular supply of electricity and industry connection) influence students' choices to enroll in office technology and management education?
6. Does lack of awareness about the scope and potential of office technology and management education contribute to students' low enrolment?

2.0 Literature Review

Concept of Specialization Choice

Specialization choice refers to the process by which students select a particular field of study within a broader academic program. In business education, students often choose from specializations such as accounting, marketing, entrepreneurship, and Office Technology and Management Education (Nwaiwu, 2016). This decision is typically made after exposure to foundational courses and is influenced by a combination of personal preferences, academic strengths, and perceived career opportunities.

The process of specialization choice is critical because it shapes students' future career paths and professional identities. A well-informed choice leads to greater academic satisfaction and improved performance, while a poorly informed choice may result in dissatisfaction, low motivation, or career mismatch. Therefore, understanding the factors that influence specialization choice is essential for educators and policymakers.

Concept of Office Management and Technology Education

Office Technology and Management (OTM) programme in Nigeria according to Fadare (2020) was design to replace the Secretarial Studies programme. Office technology and management education is a subset of business education programme that is designed to prepare students who are interested in developing careers in keyboarding operation, stenography, office management, establishment of business training school, computer centres, data processing, small or medium business enterprises and teaching through the acquisition of appropriate skills, knowledge, abilities and attitude that will make them enter and progress in their economic endeavor (Aina, 2019). It is a component of Business Education that provides knowledge and skills for would-be office managers/secretaries to perform efficiently and effectively in the world of work. It also involves acquisition of skills, knowledge and competencies that make the recipient proficient in secretarial profession. At the undergraduate level, students are typically required to specialize in areas such as Accounting, Marketing, Entrepreneurship, and Office Technology and Management (OTM).

Despite the importance of all specializations, there has been a noticeable imbalance in students' choices. While Accounting, Marketing, and Entrepreneurship attract a large proportion of students, OTM consistently records low enrollment. This trend is of concern given the relevance of OTM in modern organizations where office automation, information management, and digital communication play vital roles. The choice of specialization is influenced by multiple factors including career prospects, personal interest, peer influence, societal perception, and parental expectations (Ibrahim & Magaji, 2014). Students often prefer disciplines perceived to offer better employment opportunities and social recognition. Unfortunately, OTM is sometimes viewed as less prestigious, which may discourage students from selecting it.

The specialization is designed to meet the needs of contemporary organizations that rely heavily on digital tools and efficient information management systems. Ogbusuo (2016) further explained that OTM is a course of study which focuses on the use of computer system, software and network for processing and distribution of data and communicating information in the organization, in the planning,

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organizing and administering activities in an office. Thus, graduates of Office Management and Technology Education are expected to function as administrative assistants, office managers, secretaries, and support staff in both public and private sectors.

Objectives of Office Technology and Management (OTM)

The objectives of office technology and management (OTM) are to equip students with the knowledge, skills and competencies required to function effectively in modern workplace. According to Wesley University proposed prospectus for office and information management programme (WEPPOIMP, 2024), at the end of the programme, the students should be able to:

a. perform administrative positions in the public and private sectors;
b. demonstrate relevant computer skills in the office in any organization and be versatile in the use of information communication technology (ICT) office applications;
c. apply communication skills in inter-personal interactions or relationships;
d. demonstrate professional traits and corporate ethics in behavior and carry out daily routines and activities and to fully develop professional techniques necessary for lifelong future advancement;
e. acclimatize to the professional office environment having acquired fundamental components of discipline, confidence and competent skills to compete and excel in the global market place;
f. role-play thus making impact as impact members of the management team in both the public and private sectors of the nation's economy, the legal and medical profession, communication media and other areas of contemporary society;
g. apply the best office administration and technological practices and procedures as demanded by the office of the twenty-first century; and
h. actively participate in the opportunity to acquire practical knowledge in problem solving and have real-life work experience through Industrial Attachment Scheme.

Despite its relevance in today's technology-driven workplaces, the specialization often experiences low enrolment compared to other business education fields. This trend may be linked to misconceptions about the nature of the programme, limited awareness of career opportunities, and societal undervaluation of administrative roles.

Determinants of Students' Specialization Choices

Several factors influence students' decisions when selecting a specialization. The following are noticeable:

Personal Interest and Aptitude: Personal interest is one of the strongest determinants of specialization choice. Students are more likely to choose fields that align with their passions, strengths, and academic abilities. When students have a natural inclination toward a subject, they tend to perform better and remain more engaged. Students who choose a study programme according to their interest have higher fighting power and effort, which has an impact on learning outcomes (Hasanah, 2023). Aptitude also plays a role, as students often select specializations in which they feel confident in their ability to succeed. Choosing a study programme that is not in line with student interest will result in decreased fighting power and unpreparedness for the pressure to complete the assignments given by the lecturer. If students like the study programme of their choice, their attitude will be very positive and they are likely to be successful in that study programme (Emawati et al, 2022). Yuliawan and Hardini (2022) stated that interest greatly influenced decision making in choosing a study programme. It can be concluded that if students choose careers according to their interests and aptitude, they become more active and diligent in contrast to choices that are not in their interest, which pressurise them to stop in the middle of the road or change majors (Leri, Santi, & Rosita, 2022).

Career Prospects and Employability: Perceived career opportunities significantly influence students' decisions as they tend to prefer specializations that are associated with high employability, job security, and attractive remuneration. If a field is perceived to have limited job prospects, students may avoid it regardless of its relevance. According to Wust and Simic, (2017), career decision were strongly influenced by the prestige statuses associated with particular occupations. The youth's selection regarding their career was also influenced by the availability of jobs. Career decisions made by students are also significantly influenced by aspects relating to employment. Students' opinion of various occupation are greatly influenced by the characteristics of the labour market, which include options for career growth, earnings potential and the need for particular talents (Tampoe, 2016). Students frequently give serious thought to factors like employment stability, work balance life and

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opportunities for professional development while deciding on their future career prospects (Thomas et al, 2024).

Parental and Peer Influence: Parents often play a major role in shaping their children's educational and career choices through guidance, expectations, and advice. The role of parents in educating is so important because it is through this family that a person's life is formed (Wuldandari, Wijayanti and Saliman, 2019); Islam, Rahman, and Nibir, 2021). Students interaction with peers play a central role in how students think about themselves (Yi-Hui, 2016). Students interactions with peers of diversified interest and backgrounds have the potential to stimulate reflection, knowledge and beliefs which may lead to new ways of thinking about the world, other peer and eventually themselves. A study by Okiror and Otabong (2015) further found that peer interactions influence students in choosing programme.

Societal Perception: Societal perception significantly influences students' specialization choices, as OTM is often perceived as less prestigious compared to other courses. This is how a particular field of study is viewed by the general public. Business education is a segment of technical and vocational education, encompassing accounting, entrepreneurship, marketing and office technology and management. TVET is perceived in Nigeria as the form of education for the average or disadvantaged students, regarded as a career path for the less academically endowed learners. The practice of referring or recommending average students to attend TVET institutions is a big challenge to the sector. The society is assuming that the TVET institutions is not for the bright students and in some cases has led to low enrolment compared to other courses. TVET is yet to be recognized by the general public as means to secure suitable employment with higher income than white collar employment. It is thus yet to be accorded the dignity that will attract talented and brilliant learners to consider TVE (Oviawe, 2018).

Institutional Factors: Institutional factors such as availability of qualified lecturers, teaching facilities, equipment, and learning resources also influence specialization choices. Institutions that are well-equipped and offer quality instruction tend to attract more students to their programmes. Conversely, inadequate infrastructure and limited exposure to practical training may discourage students from selecting certain specializations. The present or lack of adequate practical laboratory equipment and modern ICT tools influence students choice of OTM. Pimpa (2017) study revealed that the facilities provided on campus influenced students' decision to choose a particular option, showing that availability of computers, printers and internet access is important to students as it enhances their learning. de Jager and du Plooy (2017) study found that learning materials are important for students since most of the students do not have personal computers or laptop to use.

Awareness and Career Guidance: Awareness of available specializations and their associated career opportunities is essential in guiding students' choices. Career guidance and counseling services in educational institutions help students make informed decisions based on accurate information. Lack of adequate guidance may result in misconceptions and poor decision-making, contributing to low enrolment in certain fields such as Office Management and Technology Education. Alutu and Aluede (2017) highlight the fact that many Nigeria students select their courses based more parental influence than on their own potential which results in a lack of motivation and job disorientation after graduation. Ipaye (2018) emphasized that effective career guidance is essential for helping students make informed career decisions in Nigeria.

Theoretical Framework

The theoretical frame work for this study is based on four theories namely: social cognitive career theory (SCCT), theory of career choice, expectancy value theory and rational choice theory. Social cognitive career theory was propounded by Lent, Brown and Hackett (1996), which explains that career choices are influenced by self-efficacy, outcome expectation, and personal goals influence career decisions. SCCT posits that individuals pursue careers where they feel confident in their abilities. It was also supported by Holland's Theory of Career Choice (2011), which suggest that individuals select careers that align with their personalities and interests. According to this theory, career satisfaction and success are achieved when there is a match between an individual's personality and the work environment. Holland identified six personality types: realistic, investigative, artistic, social, enterprising, and conventional. Also supported by Expectancy Value Theory propounded by Atkinson (1950), it highlights that both individual perceptions of ability and the value attributed to a career play crucial roles in career decision making. Rational Choice Theory propounded by Coleman (1990) provides a framework for understanding how individuals make rational decisions based on self interest, and how those decisions aggregate to larger social outcomes.

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Office Management and Technology Education aligns closely with the conventional personality type, which emphasizes organizational skills, attention to detail, and structured environments. When students' personalities align with the characteristics of this specialization, they are more likely to choose it. However, mismatches between personality and perceived job characteristics may contribute to low enrolment.

3.0 Methodology

Descriptive survey research design was adopted for the study. The population for the study consisted of Eighty (80) Part III full time and Part-time business education students in Adeyemi College of Education, Ondo now Adeyemi Federal University of Education, Ondo, Ondo State. Although the sample size of 80 is 66 (Krejcie & Morgan 1970), the study used the entire population to have a robust result that is fully representative". The instrument for data collection was a self-structured questionnaire, with a 4-point Likert rating scale, ranging from Strongly Agree (SD), Agree (A), Disagree (D) and Strongly Disagree (SD). It consisted of 30 items on determinants of students' specialization choices in business education . The instrument was validated by two experts from the Department of Business Education, Adeyemi Federal University of Education, Ondo. Cronbach Alpha statistics tool was used to determine its level of reliability which yielded an alpha value of 0.85. Out of the 80 questionnaire distributed, 75 were retrieved in good condition and was used for data analysis. Data collected were analyzed using mean and standard deviation. Mean and standard deviation were used to answer the research questions. Any items with a mean score of 2.50 or higher was regarded as agree, while any item with a mean score below 2.50 was regarded as disagree.

4.0 Results

Research Question I: How do personal interest and aptitude influence students' choice of OTM?

Table I: Respondents' Mean Ratings on the influence of personal interest and aptitude on choice of OTM.

S/N	Items	Mean	SD	Decision
1	I have a strong personal interest in OTM	2.68	0.84	Agree
2	My academic strength influenced my choice	2.55	0.91	Agree
3	OTM courses are interesting	2.47	0.88	Disagree
4	I have the aptitude to succeed in OTM	2.60	0.79	Agree
5	Lack of interest discourages students	2.82	0.76	Agree
	Grand Weighted Mean	2.62		

The result in table 1 indicated that the mean rating of the 4 out of 5 items in the table ranged from 2.55 to 2.82 which are greater than the cut off point value of 2.50 on the four point rating scale. This showed that the 4 identified items indicated that personal interest and aptitude influence students' choice of OTM. Item 3 in the table 'OTM courses are interesting having mean value of 2.47 which is less that the cut-off point showed that the item does not influence students' choice of OTM

Research Question 2: How does the career and employment factors influence students decisions to specialize in office technology and management education option.

Table 2: Respondents' Mean Ratings on influence of career and employment factors on students decision to specialize in OTM.

S/N	Items	Mean	SD	Decision
6	OTM offers good job opportunities	2.40	0.95	Disagree
7	Students avoid OTM due to limited prospects	2.85	0.72	Agree
8	OTM graduates are employable	2.52	0.89	Agree
9	Expected salary discourages students	2.78	0.81	Agree
10	Career growth influences my choice	2.69	0.77	Agree
	Grand Weighted Mean	2.65		

The result in table 2 showed that the mean rating of the 4 out 5 items in the table ranged from 2.52 to 2.85 which are greater than the cut-off point value of 2.50 on the four point rating scale. This indicated that the four identified items shows the influence of career and employment factors on students

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decision to specialize in OTM. Item 6 in the table shows that OTM does not offer good job opportunities. Career prospects and employability play a major role in students' specialization choice, particularly negative perceptions about job opportunities.

Research Question 3: How do parental expectations and peer impact on students' enrolment in office technology and management education option?

Table 3: Mean responses on the influence of parental expectations and peer impact on students' enrolment in OTM.

S/N	Items	Mean	SD	Decision
11	My parents influence my specialization choice	2.90	0.70	Agree
12	Parents dislike OTM	2.75	0.82	Agree
13	Friends influenced my choice	2.66	0.88	Agree
14	Advice from family influenced my decision	2.58	0.93	Agree
15	Lack of parental support affects enrolment	2.81	0.79	Agree
	Grand Weighted Mean	2.74		

Table 3 reveal that the respondents rated all items 11-15 as agreed with mean ratings ranging between 2.58 to 2.90 as the influence of Parental and peer influence strongly affect students' decisions regarding OTM specialization.

Research Question 4: How do societal perceptions of certain business specialization influence students' decision to enrol in office technology and management education?

Table 4: Mean responses on societal perception of certain business specialization on students' decision to enrol in OTM.

S/N	Items	Mean	SD	Decision
16	Society places low value on OTM	2.88	0.75	Agree
17	OTM is less prestigious	2.92	0.71	Agree
18	Negative perception discourage students	2.85	0.74	Agree
19	OTM is for weak students	2.60	0.90	Agree
20	Public opinion affect my choice	2.77	0.80	Agree
	Grand Weighted Mean	2.80		

Data obtained in table 4 reveal that all the 5 items had mean ratings ranging from 2.60 to 2.92 with grand mean of 2.80, indicating that societal perception significantly contributes to the low enrolment in OTM.

Research Question 5: How do the resources available at the institution (such as standard computer laboratories, regular supply of electricity and industry connection) influence students' choices to enroll in office technology and management education?

Table 5: Responses on influence of resources available at the institution on students choices to enroll in OTM.

S/N	Items	Mean	SD	Decision
21	Availability of modern office equipment influences students choice of OTM	2.83	0.76	Agree
22	Lack of functional computers discourages students from enrolling in OTM	2.71	0.82	Agree
23	Irregular electricity power supply discourages students from choosing OTM	2.79	0.78	Agree
24	Availability of alternative power (for example generators/inverters) improve learning in OTM.	2.65	0.85	Agree
25	Insufficient time for practical lessons discourages students from choosing OTM	2.88	0.73	Agree
	Grand Weighted Mean	2.77		

Data in table 5 revealed that all items listed had mean ranging from 2.65 to 2.88. This indicates that students agreed that institutional factors are key determinants of students' specialization choice.

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Research Question 6: Does lack of awareness about the scope and potential of office technology and management education contribute to students' low enrolment?

Table 6 : Mean responses and standard deviation on lack of awareness about the scope and potential of OTM on students' low enrolment.

S/N	Item	Mean	SD	Decision
26	Students are well informed about OTM	2.30	0.94	Disagree
27	Lack of awareness affects enrolment in OTM education	2.91	0.70	Agree
28	Career guidance influences choice	2.75	0.83	Agree
29	Schools provide adequate counseling	2.28	0.97	Disagree
30	Orientation helps understanding OTM scope and potential	2.69	0.81	Agree
	Grand Weighted Mean	2.59		

Table 6 indicates that respondents agreed with 3 items and disagreed with 2 items on the influence of lack of awareness about the scope and potential of OTM on students' low enrolment. Also with the grand mean score of 2.59 above the benchmark of 2.50, it can be concluded that lack of awareness about the scope and potential influence students' low enrolment in OTM.

Discussion of Findings

The study was conducted to investigate the determinants of students' specialization choices in business education: a study on the low enrolment in office technology and management education (OTME). The findings of the study revealed that personal interest and aptitude significantly influence students' choice of OTM. Students are more likely to choose specializations that align with their abilities, skills, and interests. The finding corroborates with Ezeani and Oladele (2020), who found that students in Nigerian tertiary institutions prefer courses that match their personal interest and perceived competence. Similarly, Okoye, Ezenwafor, and Nwoye (2021) reported that lack of interest and low self-efficacy significantly reduce students' willingness to enroll in business education programmes such as OTM. Furthermore, Ugwuanyi (2022) emphasized that students' academic self-concept and confidence play a crucial role in determining their specialization choice in Nigerian

universities. The implication is that when students lack interest or feel incompetent in OTM-related skills, they tend to avoid the programme, thereby contributing to low enrolment.

Secondly, the findings of the study showed that career prospects and employability significantly influence students' choice of specialization. Many students perceive OTM as having limited job opportunities and low financial rewards. This finding is consistent with Akinwale and George (2020), who found that employability prospects strongly influence students' choice of courses in Nigerian universities. Similarly, Oviawe (2021) reported that students avoid Business Education programmes due to perceived poor job opportunities and low societal demand. In addition, Ogunleye and Olamide (2023) observed that Nigerian students prioritize courses with clear career paths, higher income potential, and job security. This suggests that negative perceptions about the labour market value of OTM significantly contribute to its low enrolment in Nigerian institutions.

The third findings indicated that parental and peer influence significantly affect students' choice of specialization. Students often depend on parents and peers for guidance when making academic decisions. This aligns with Salami (2019), who found that parental expectations significantly influence students' career choices in Nigeria. Similarly, Ogunyemi and Adeyemi (2021) reported that peer group influence plays a vital role in shaping students' academic preferences and decisions. So also, Ajayi and Adebayo (2022) noted that many Nigerian students choose courses based on family pressure or societal expectations rather than personal interest. The implication is that lack of parental support or negative peer perception can discourage students from choosing OTM.

Furthermore, the findings of the study revealed that societal perception significantly influences students' specialization choices, as OTM is often perceived as less prestigious compared to other courses. This finding agrees with Oviawe (2021), who reported that Business Education programmes in Nigeria suffer from poor public image and low societal recognition. Similarly, Okeke and Eze (2020) found that societal attitudes toward certain professions influence students' career aspirations. Furthermore,

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Nwosu (2022) observed that courses perceived as "non-professional" or less prestigious tend to experience low enrolment in Nigerian universities.Thus, negative societal perception contributes significantly to the declining enrolment in OTM.

Also, the findings of the study showed that institutional factors such as inadequate facilities, poor teaching methods, and lack of qualified lecturers influence students' choice of OTM. This is supported by Ezeani (2020), who reported that inadequate instructional facilities and obsolete equipment negatively affect students' interest in Business Education programmes. Similarly, Oviawe and Uwameiye (2019) found that poor teaching methods and lack of practical exposure reduce students' motivation and enrolment. In addition, Afolabi (2023) emphasized that availability of modern facilities and competent lecturers enhances students' engagement and programme attractiveness. The implication is that poor institutional support discourages students from enrolling in OTM.

Furthermore, the findings revealed that lack of awareness and inadequate career guidance significantly contribute to low enrolment in OTM. This finding is consistent with Ipaye (2018), who emphasized that effective career guidance is essential for helping students make informed career decisions in Nigeria. Similarly, Ogunyemi (2022) found that inadequate career counseling services in schools lead to poor awareness of available programmes and career opportunities. Furthermore, Eze and Nwankwo (2023) reported that many students in Nigerian institutions lack adequate information about Business Education specializations, including OTM. Therefore, insufficient awareness and weak guidance systems contribute to students' reluctance to choose OTM.

Conclusion

The study was conducted to investigate the determinants of students' specialization choices in business education: a study on the low enrolment in office technology and management education (OTME). The findings revealed that personal interest and aptitude influence students' choice of OTM; career and employment factors influence students decision to specialize in OTM; parental and peer influence strongly affect students' decisions regarding OTM; societal perception significantly contributes to the low enrolment in OTM; institutional factors are key determinants of students' specialization choice; and lack of awareness about the scope and potential of OTM influence students' low enrolment in OTM. The study concludes that the low enrolment in Office Technology and Management is influenced by multiple factors. Addressing these challenges requires collaborative efforts from students, parents, educational institutions, and government agencies to improve the attractiveness and relevance of OTM programmes in Nigeria.

Recommendations

In view of the findings of the study and the conclusion drawn, the study recommends that educational institutions should organize orientation programmes, workshops, and practical sessions to stimulate students' interest in Office Technology and Management (OTM) to help students develop relevant skills and confidence in the programme; Universities and colleges should provide adequate information on the career opportunities available in OTM through career talks, alumni interactions, and industry linkages to correct negative perceptions about employability; parents and peers should be sensitized on the importance and career opportunities in OTM through seminars and awareness campaigns to help reduce negative influence and encourage informed decision-making among students. Furthermore, government and educational stakeholders should work towards improving the public image of OTM by highlighting its relevance in modern workplaces, especially in digital and administrative sectors; institutions should provide modern facilities, equipment, and conducive learning environments to enhance effective teaching and learning in OTM; and, lecturers should provide students with accurate and up-to-date information about OTM education and other specializations.

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BALANCING TECHNOLOGY ADOPTION WITH DATA SECURITY AND EMPLOYEE PRIVACY FOR ACHIEVING ORGANISATIONAL EFFECTIVENESS IN TERTIARY INSTITUTIONS

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Abstract
This paper reviewed relevant literature, offering suggestions on how organisations can balance technology adoption with data security and employee privacy in order to ensure organisational effectiveness of tertiary institutions. The paper was reviewed by examining organisational effectiveness, data security, employee privacy and suggesting strategies for achieving organisational effectiveness. Challenges and strategies of balancing technology adoption with data security and employee privacy in achieving organisational effectiveness were also reviewed. The paper concluded that organisations are saddled with the responsibility of ensuring that technology adoption is in line with data protection regulations and employee rights are protected in order to avoid sanctions and achieve organisational effectiveness. It was recommneded, among others, that tertiary institutions should be ready and willing to adopt technology tools for work processes, dedicate adequate sum of money to invest in procurement of technologies, and be willing to put in place technological tools that will ensure that data is well secured, safe from theft, loss or unauthorized access.
Keywords: Technology Adoption, Data Security, Employee Privacy, Organizational Effectiveness, Balance.

Introduction

The goal of every right-thinking management of any organization is to ensure effectiveness and efficiency at all levels of the organization. Various researches have shown that the strategic adoption and integration of appropriate technologies can significantly increase organizational productivity and performance in various industries when implemented effectively (Christopher, Moses, Muhindo, & Komunda, 2022). In today's organisations, data has become the "new oil" fueling innovation, commerce and governance (Adedumade 2025). This is by way of adoption of technologies in work operations, without which it will be difficult to achieve organizational objectives and effectiveness.

Technology adoption in organizations is increasingly intertwined with data security, as advancements like AI, cloud computing, and IoT create both opportunities for growth and heightened vulnerability to cyber threats (Kaziro & Tukamuhembwa 2024). Several studies have noted that while technology enhances operational efficiency, it simultaneously necessitates robust security measures to protect data integrity, confidentiality, and availability. Choudaraju, Valivarth & Shukla (2024) found that while addressing the emotional intelligence, trust-building, and ethical considerations in technology adoption, data privacy security should not be neglected.

Data security is the process of safeguarding digital information throughout its entire life cycle, from creation to destruction. It protects digital information from corruption, theft, or unauthorized access and loss. It covers hardware, software, storage devices, and user devices; access and administrative controls; and organizations' policies and procedures. It uses tools and technologies that enhance visibility of a company's data and how it is being used. Some of the processes employed to ensure data security include data masking, security training, access control, data backup and resiliency, encryption, monitoring and auditing, surveillance systems, intuition detection systems (Scribid 2025). The process also helps organizations streamline their auditing procedures and comply with increasingly stringent data protection regulations.

An effective data security management and strategy process enables an organization to protect its information against cyberattacks, helps to minimize the risk of human error and insider threats, which continue to be the cause of many data breaches. Data breaches common in Nigeria like phishing and

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insider threats has caused grave effects like huge financial losses, damaging reputation of organizations, disrupting of operations and eroding customer trust. These are very major threats to organizational effectiveness that must be checked and avoided as much as possible. Various data security measures are adopted by organizations to ensure the safety of their information. Meta-analyses suggest cultural and mental readiness, comprehensive end-user training, and customized implementations in line with mainstream work practices most strongly facilitate the widespread adoption necessary to realize organizational effectiveness (Paul & Kazaara, 2023).

Employee privacy refers to an employee's right to maintain personal life and communication confidentiality in the work place, balancing worker dignity against legitimate employer surveillance and operational needs. It refers to the protections employers must provide when collecting, storing and using an employee's personal information. This includes social security numbers, medical data, personnel files, financial records, background checks, disciplinary records and digital activity generated at work. O.I.D. Legal Consult (2026) stressed that in today's data-driven workplace, the handling of employee data has become a fundamental aspect of business operations but it also raises serious legal concerns about employee privacy. The Nigerian Data Protection Act (NDPA) 2023, along with Section 37 of the 1999 Constitution of the Federal Republic of Nigeria (as amended), lays the groundwork for respecting and enforcing the privacy rights of employees such as right to information, right to withdraw consent (Section 35), right to object (section 36), right to security and breach notification (Sections 39–41), and right to cross-border data protection (Section 41). Employees' personal data includes full names, BVNs, contact details, health information, tax data, next-of-kin info., among others.

While organizations have obvious compelling reasons to monitor employee activities such as the need to maintain a productive workplace, quality control of employee work, maintaining the security of confidential information, preventing employee theft and misconduct among others, employers must also consider the potential negative effects of strict monitoring and surveillance such as loss of employee trust and morale, violation of federal laws, fear of personal information falling into wrong hands, etc. (Peterson, 2026). These considerations should make any forward-thinking organization to understand that it has become necessary to establish employee privacy policy as it is crucial to the efficiency of institutions of higher learning and every organization.

It is no longer news that technology adoption has permeated every organization for effectiveness in their operations. Technology adoption has contributed significantly to organizational growth and so are indispensable. However, over-reliance and uncontrolled activities of employees is observed to have led to data breaches, cybre attacks, which also lead to vulnerabilities in employee privacy and consequently, can lead to financial losses, damage to the reputation of the organisation and reduce employee trust. The need to ensure that data is well secured and employees enjoy their privacy in order to achieve organizational effectiveness becomes paramount. This study therefore sought to provide suggestions that would balance technology adoption with data security and employee privacy to achieve organizational effectiveness in organizations.

Literature Review

Organizational Effectiveness

Myriad of researches have shown that the strategic adoption and integration of appropriate technologies can significantly increase organizational productivity and performance in various industries when implemented effectively (Christopher, Moses, Muhindo, & Komunda, 2022). Specifically within higher education institutions, studies have shown that technology tools enabling better collaboration, streamlined workflows and data-driven decision making correlate with improvements in key metrics such as student retention, faculty satisfaction and administrative efficiency when linked to core business processes (Christopher, Komunda et al., 2022).

Looking at the opportunities and challenges that technology adoption (artificial intelligence (AI)) presents for tertiary institutions, Fasae and Obadare (2024) stressed that artificial intelligence (AI) technologies like machine learning, natural language processing, and data analytics are transforming educational settings by way of enhancing student-teacher engagement, increasing administrative

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efficiency, and facilitating international research connections. However, drawbacks to integrating AI include ethical implications, decision-making, faculty and student adaptation, data security and student privacy, implementation costs and resource requirements, others includes, need for technical expertise and training and cultural and institutional barriers.

Adebayo (2025) pointed out the critical importance of digital solutions in forms of contemporary organizational capability development and sustainable improvement. This evidence has emphasized that technology training and technology literacy are essential to help in issues with the implementation of tactics and championing of innovation culture for sustainable development in the traditional sectors. It therefore behooves on management of educational institutions to adopt modern technologies that will drive effective service delivery.

Data Security and Organizational Effectiveness

Data plays a crucial role in the success of organizations in today's economic world. However, due to their significance, organizations confront many security concerns that necessitate the implementation of security measures to prevent unauthorized use, loss, or leakage. Security is the ability to prevent unauthorized access to data or loss (Fasae, 2024). Data security is important to organizations in all industries all over the world, including educational institutions. Organizations are legally obliged to safeguard customer and user data from being lost or stolen and ending up in the wrong hands. Sensitive data in an educational institution includes: information regarding results, payment information, hospital records, and identification information, among others. With a data security program created to meet the specific needs of the institution, this information stays safe and secure. Other records regarding employees (academic and non-academic), management decisions, contracts and agreements must be properly secured as unauthorized access, disruption, theft or loss could cause grave consequences. It helps organizations to keep their reputation clean. Customers and clients entrust sensitive information to organizations as they carry out business transactions, and a data security strategy enables organizations to provide the protection of their clients need. Your reward? A stellar reputation among clients, partners, and the business world in general.

eLegal 2025) see data privacy (or personal data protection) as ensuring that such personal data is accessed only by authorized parties and used solely for legitimate purposes. It involves safeguarding data against unauthorized access, disclosure, or misuse, and processing it in a way that respects employees' rights. In simple terms, data privacy is about keeping personal information secure and confidential and it is the organization's responsibility to implement policies, procedures and technical measures so that employee data 'is only used for the purposes for which it was collected'. Good data privacy practices enhance an employer's reputation and build trust, while poor practices can quickly lead to distrust or financial losses due to fraud. KPMG International (2023) explained that cyber resilience is vital to maintain business operational capabilities, safeguard customer trust, and reduce the impact of future attacks. According to the KPMG Global Tech report (2023), 71 percent of businesses say they have to become more proactive at integrating trust, security, privacy and resilience into technology rollouts. Across the world, regulators are increasingly focused on cyber resilience, whether it be the EU Digital Operational Resilience Act (DORA) and updated Network and Information System Directive or the recent US Securities and Exchanges Commission (SEC) cyber regulations. Organizations are obliged to be more transparent about their ability to respond to breaches before, during and after an incident. In some critical sectors — such as financial services — regulators demand service restoration within specific time periods, while others require a focus on protecting customers and clients from the harm that results. However, in order to protect this information from cyberattacks, it is now imperative to implement strong and advanced data security measures for the benefit of employees and HR teams.

Data security enables continued and easy flow of operations, fosters customers/clients trust in an increasingly digitalized society, increase organizations market share as such institutions will attract lots of patronage from young people in this generation, giving the institution a competitive edge. Data security drives innovation, enhances employee productivity and decision making, and creates a safe digital space for the smooth running of modern organizations (Adedunmade, 2025). A data breach refers to a security violation in which sensitive, protected or confidential data is copied, transmitted, viewed, stolen, or used by an unauthorized individual (The Vasion Venture Glossary, 2025). Nigeria's

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Data Protection Act (NDPA) (2023) defines a data breach (personal data breach) as a breach of security of a data controller or data processor that leads to or is likely to lead to the accidental or unlawful destruction, loss, alteration, unauthorized disclosure of, or access to personal data that is transmitted, stored, or otherwise processed. Such breaches can be intentional (e.g., cyberattacks, hacking, or ransomware) or accidental (e.g., employee negligence, misdirected emails, or unsecured systems). Common forms include: unauthorized access (hacking, phishing, social engineering); insider misuse (employees leaking or exploiting data); accidental disclosure (sending sensitive data to wrong recipients); and cyber extortion (ransomware attacks). The types of data typically compromised in breaches include personally identifiable information (PII), financial records, health data, and corporate trade secrets all of which are legally protected under Nigerian law.

Employee Privacy and Organizational Effectiveness

Protecting employee personal information is now a strategic imperative for Nigerian organizations. Employee data such as names and contact details, bank and health records, is increasingly processed across Human Resources systems, payrol platforms, and cloud services. This sensitive data must be guarded with the same rigour as any business asset. In Nigeria alone, where millions of workers' records are handled daily, a strong data protection framework helps maintain employee trust and guard against fraud or identity theft. Indeed, the Nigerian constitution recognized privacy as a fundamental right, so employers must treat employee data with care (eLegal (2025).

A well-established employee privacy policy is crucial to the efficiency of institutions of higher learning and every organization. It sets up appropriate social boundaries and allows for employee freedom to decide what share and who they authorize to have access to their personal information and the organization's data under their control. (Employee Productivity Hub, 2021). Data privacy is one important issue as large datasets are frequently necessary to operate efficiently, which raises concerns regarding the gathering, storing, and usage of personal data. Strong data protection to preserve people's privacy and stop information misuse is imperative (Afolabi, 2024). According to eLegal, (2025), employee personal data refers to any information that identifies an employee or could be used to identify them such as obvious identifiers (name, address, photograph, ID number); contact details (email, phone); financial records (bank account, tax ID); biometric or health data, social media posts and any unique code or online identifier. The Nigeria Data Protection Act (NDPA) defines personal data broadly as any information relating to an individual who can be identified by reference to an identifier. In practice for employers, this means all human resources, payroll, and related records that pertain to an employees' identity, background, or activities.

In today's modern world there are many ways that employers can and do monitor employee activities such as computer use, phone calls, texts and instant messaging. The primary question employers should answer is whether they should monitor employees. Employers should consider whether and to what extent they have a legitimate business interest in keeping tabs on employees, that outweighs the employee right to privacy and any negative impact on employee morale that may result from monitoring.

While organizations have obvious compelling reasons to monitor employee activities such as the need to maintain a productive workplace, quality control of employee work, protecting relationships with clients and customers, maintaining the security of trade secrets and confidential information, protecting employer computers, property and equipment, preventing employee theft and misconduct amongst others, employers must also consider the potential negative effects of strict monitoring and surveillance which could lead to loss of employee trust and morale, violation of federal laws, fear of personal information falling into wrong hands, among others (Peterson 2026).

Employee privacy is not just a constitutional guarantee—it's a strategic necessity. As employers collect more personal data than ever before, aligning business operations with the provisions of the Nigerian Data Protection Act, 2023 is essential. Organizations that embrace data privacy as a core compliance and HR issue will not only avoid legal pitfalls but will also build trust and loyalty among their workforce (O.I.D. Legal Consult (2026).

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Technology Adoption, Data Security, Employee Privacy and Organizational Effectiveness

The paradigm shift to digital learning during and after the COVID-19 pandemic has led to widespread adoption of educational technologies (EdTech) in higher education, in developing countries, including Nigeria. This trend, while improving access and flexibility, raises serious concerns about the security and privacy of sensitive administrative and students' data. In Nigeria's context, these concerns are compounded by nascent legal frameworks and varying awareness among stakeholders (Binitie, Onyemenem & Okoh 2024). Effective adoption requires robust information security policies, staff training on cyber security, and adherence to the Nigeria Data Protection Regulation (NDPR). Scientific studies in recent times have shown that it is the level of integration of technology within organizations that determines the resulting impacts on productivity and efficiency rather than simply investing in hardware or software (Paul & Kazaara, 2023). Nigerian institutions of higher learning must regard this as a crucial and inevitable necessity. Adedunmade (2025) observed that in today's digital economy, data has become the "new oil," fueling innovation, commerce, and governance. While the increasing reliance on digital platforms, cloud computing and interconnected technologies has no doubt,created vast opportunities for efficiency and growth, it has equally exposed individuals, corporations, and states to significant cybersecurity risks, among which "*data breaches"* pose some of the gravest concern. A data breach whether through hacking, insider threats, or accidental disclosure, undermines not only consumer's trust but also the legal obligations of organizations that process personal and corporate information.

According to the 2025 Africa Cyberthreat Assessment Report, Nigeria ranked among the top 10 countries most affected by cyberattacks in Africa (Adepetun, 2025). This reality raises urgent questions about cybersecurity readiness and the adequacy of legal and regulatory frameworks as cybercrime continues to outpace the legal system designed to stop it. *O.I.D. (*2026) reiterate the legal grounds for which personal data can be processed to be lawful only when based on: performance of employment contract, compliance with tax, pension, and labor laws, legitimate business interest (with safeguards) and consent from the employee (Section 25).

Challenges of Balancing Technology Adoption with Data Security and Employee Privacy to Achieve Organizational Effectiveness

Technology adoption in Nigerian higher institutions is accelerating administrative and academic functions, yet it faces significant challenges. Changes and innovations will always come The technological changes that pervades modern organizations which clearly requires the adoption of modern technologies are not without its attendant challenges. While paying particular attention to data security and employee privacy organizations are facing some notable challenges ranging from willingness to adopt, organizational readiness, knowledge and expertise, communication processes, organizational awareness, and top management support. Other obvious challenges include external pressure, fear of exposure, and also the battle to cope with laws and regulations, high infrastructure costs, resistance to change, and critical data security risks (Wilma and Klara 2023). The following are other challenges that organizations could face in an attempt to balance technology adoption with data security and employee privacy in achieving organizational effectiveness in tertiary institutions.

Data Security and Students' Privacy: The security and privacy of students' data are major concerns raised by the incorporation of technological tools in educational settings. Technology systems frequently need access to large volumes of personal data in order to operate properly, hence, protecting sensitive information from breaches and misuse is crucial (Roberts & Hernandez, 2021). Maintaining trust and adhering to legal rules necessitate the implementation of strong data protection procedures (Smith, Jones & Williams, 2020 in Fasae & Obadare (2024)).

Costs and Resource Requirements: For many educational institutions, the upfront expenditures of deploying technologies can be unafordable. These expenses cover both the required infrastructure upgrades and the procurement of technology tools and software (Johnson & Brown, 2020). Furthermore, substantial financial resources are needed for continuous upkeep and updates, which puts a pressure on constrained school budgets (Thompson, 2021). Katyal **(**2020) noted that high installation costs is needed to deploy technology tools 24/7 to handle a large volume of queries simultaneously.

Expertise and Training: A certain degree of technical proficiency is necessary for educators and administrators to apply technological tools in education effectively. Employees must have sufficient training in order for them to be able to use tools efficiently (Williams, 2020). The successful

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integration of technology may be significantly hampered by this requirement for specific knowledge and abilities (Taylor & Smith, 2021).

Regulatory and Legal Compliance: Adedunmade (2025) stated that in the Constitution of the Federal Republic of Nigeria 1999, as amended, privacy remains one of the most cherished values in modern democratic society, serving as a cornerstone for the protection of individual autonomy, dignity, and freedom. In an era of mass surveillance, digital platforms, and expansive data collection, the right to privacy has gained renewed importance not only as a fundamental right recognized under international law but also as a constitutional guarantee entrenched within the Nigerian legal system. Section 37 of the 1999 Constitution (as amended), which forms the bedrock for the protection of personal liberty, dignity, and autonomy provides that: "The privacy of citizens, their homes, correspondence, telephone conversations and telegraphic communications is hereby guaranteed and protected." O.I.D (2026) established that failure to comply with the NDPA may result in hefty regulatory fines, civil suits for breach of privacy, loss of trust and reputational damage.

Lack of Human Context: Technologies respond to humans only to an extent they have been trained. If a query is beyond what the machine has been trained for, it cannot understand or respond, which can be frustrating. Also, machines lack emotions so they cannot empathize with a customer who may be feeling low, angry, or frustrated. Human agents can understand and relate to the sentiment of the customer, but this is not the case with machines. Therefore, technologies cannot establish a connection with the customers, which often goes a long way in business growth.

Furthermore, Walz (2024) in Fasae and Adeyeye (2024), on challenges facing the use of technology in modern office noted that its adoption in the workplace highlights insufficient high-quality data, bias and fairness leading to unfair or discriminatory outcomes, wrong interpretation of data and lack of transparency, among others.

Strategies to Balancing Technology Adoption with Data Security and Employee Privacy to Achieve Organizational Effectiveness

Top managers have a great responsibility to ensure that investment in security systems is sufficient to stay competitive and trustworthy. Information Technology managers are expected to handle security concerns that the organization may be confronted by. The following are suggested strategies to overcome the challenges:

Staff Training and Awareness: Waltz (2024) stated that one of the primary challenges is the shortage of skilled professionals and insufficient understanding and awareness of the problems concerning information security in organizations, there is therefore an urgent need to create awareness among employees to positively affect their willingness to adopt and use modern technologies with particular interest in data security. (eLegal, 2025) established that all employees (especially human resource, information technology, and management) should be educated about data privacy responsibilities, explaining why protecting personal data matters and what procedures to follow. The NDPA explicitly requires organisations to implement an "organisational schedule for internal sensitisation and training on privacy". Personal data may be used to evaluate and develop employees: e.g., gathering data for performance reviews, setting individual goals, providing feedback, or identifying training needs. These activities support legitimate business interests in workforce development.

Provision of essential Technology Tools - Provide with appropriate technical measures such as firewalls, secure authentication, access controls (so only authorised HR or payroll staff can view sensitive fields), regular backups, and encryption of data-at-rest and in-transit. The NDPA (2023) mandates that controllers and processors to implement security and confidentiality measures against accidental or unlawful loss, misuse or disclosure. Smart digital tools form the backbone of modern workplace and employees need seamless access to resources that help them excel. This gives teams the power to work smarter with integrated solutions that reduce friction and spark innovation, bring together essential applications, ensuring everyone stays connected, whether they're at their desk or on the move (Herman, 2006).

Integrating technologies into existing workflows and systems. This can be achieved through process mapping which will help identify areas where technology can add value and align solutions with existing workflows. This will help ensure seamless data flow between technology systems and other enterprise systems. Also communicate the benefits of technology adoption and providing training to help employees adapt to new technology-driven workflows in line with regulations (Waltz, 2024).

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Role Clarification - When employees have proper understanding of what their roles are, it helps to control unnecessary data management. Kumar (2024) intones that when people know their duties, each person knows what to share and when, thereby improving accountability and task ownership.

Employee Privacy Policies: To enhance organizational effectiveness, organizations should establish employee privacy policies to win the trust and commitment of their professionals, build trust and enhance employees' retention, boost employee morale and productivity, encourage innovation and creativity, ensure legal compliance and present the organization in a good light boosting the organization's reputation, consequently ensuring data security and risk prevention. eLegal (2025) emphasized that employers should be aware of any industry-specific rules that require protecting personal information (for instance, Central Bank or NCC guidelines) but noted, however, that in all cases, the NDPA (2023) is the overarching law which sets out key data protection principles such as lawfulness, transparency, purpose limitation, and data minimization, and requires organizations to justify any processing under a legal basis (consent, contract necessity, legal obligation, vital or public interest, or legitimate business interest).

Focus on Human Development: Fasae (2024) averred that effective management of humans and technology is indispensable in order to ensure protection to data. Humans are the primary and indispensable asset of an organization. Their temperament, attitude, willingness, perception, and behaviour play a crucial role in determining the security of data, making them the most significant threat to data security. Jun, Rafsanjani, Aslam & Behjati (2025) asserted that the lack of a comprehensive understanding and effective countermeasures addressing human factors has allowed attackers to execute successful social engineering attacks worldwide, leading to severe security breaches. Impersonation and business e-mail compromise are among the costliest attacks compared to other forms of cybercrimes, with both leading to the loss of 2.9 billion dollars and 1.3 billion dollars Internet Crime Report 2023).

Implications of Technology Adoption, Data Security and Employee Privacy to Organizations

Technology adoption, data security and employee privacy create the necessary need for organizations to much carefulness. In view of huge amounts of data to be processed, organizations should adopt technological tools that will improve efficiency, at the same time, securing data and ensuring employee privacy. Obasi and Benson (2025) affirmed that a complex, interdependent environment is created where digital tools improve efficiency and data-driven decisions, but simultaneously increase risks of data breaches, employee distrust, and legal liabilities, demanding a balance of robust security, transparent policies, and ethical oversight.

Ability of organizations to adopt new technologies will increase their productivity and efficiency and make for better decision making. The presence of huge amounts of data can attract security risks and cyber threats, requiring strong encryption and security infrastructure. Hence organizations should take proactive steps in protecting data by adopting more complex technologies that will help in protecting their data. This is because data breaches can result in high financial losses and reputational damage. Organisations must implement rigorous ethical data governance to leverage technology without sacrificing worker trust or legal compliance (Garg and Kumar (2025).

Employees' privacy is another concern that has implication for organizations. Employers tracking employees' activities, thereby infiltrating into employee privacy, can cause stress, distrust and decrease employees' engagement, thereby increasing turnover. Organizations must comply with varied strict data protection laws. (e.g. DPR) while navigating ethical dilemas, such as obtaining consent for monitoring. According to eLegal (2025), the Nigeria Data Protection Commission (NDPC) has the authority to impose penalties for non-compliance. Effective technologies adoption requires a balance between innovation and privacy. Clear communication of surveillance practices and transparency in data usage help maintain employee trust and foster a positive workplace culture (Ogba-Amauugo, 2024).

Furthermore, Adedunmade (2025) outlined liabilities for data breaches in Nigeria to inclide criminal liability, civil liability, reputational and commercial liability, and regulatory liability.

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Conclusion

The proliferation of technological tools for work process are inevitable in every organization whatever the size. Adopting technologies is associated with difference risks such as data breathes, hacking, theft, unauthorized access, among others. It is imperative for organizations to, while adopting technologies for work process, initiate plans for robust security checks to prevent threats, theft and loss of important and confidential data. Monitoring employee activities should be done with care in order to prevent infringing on their privacy which could result in regulatory sanctions for the organization.

Suggestions

It is suggested that:

1. Tertiary institutions should be ready and willing to adopt technology tools for work processes which will help them to achieve efficiency and effectiveness.
2. Tertiary institutions should dedicate adequate sum of money to invest in procurement of technologies that will help in the performance of their tasks.
3. Tertiary institutions should be willing to put in place technological tools that will ensure that data is well secured, safe from theft, loss or unauthorized access.
4. Tertiary institutions should ensure that they adhere to government regulations on data privacy by adhering to the NDPA, by following the best practices outlined.
5. Tertiary institutions should beware of excessive monitoring of employee activities in order to avoid sanctions. A breach of employee data privacy can have serious consequences for an organization.
6. Employees should be trained on the need to keep organization data private and consequences should be communicated for breach of agreement.
7. The benefits of organizational effectiveness for both employees and employers should be communicated to employees in order to align their personal goals with those of the organization.

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OFFICE TECHNOLOGY AND MANAGEMENT LECTURERS' SELF-EVALUATION ON DESKTOP PUBLISHING PROFICIENCY FOR EFFECTIVE TEACHING IN NORTH-WEST NIGERIA POLYTECHNICS

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Abstract
The purpose of this study was to evaluate the Office Technology and Management Lecturers' ability in teaching desktop publishing applications at the polytechnics in Northwest Nigeria. The study was guided by two null hypotheses and one research question. The research design used in the study was a descriptive survey. 136 OTM lecturers made up the population and sample size. A 17-item, five-point structured questionnaire was used as the data gathering tool. With a Pearson Product-Moment Correlation Coefficient Value of 0.77, the split-half approach was used to determine the instrument's dependability. Data was analysed using the mean and standard deviation. The t-test was used to assess the null hypotheses at the 0.05 level of significance. The results showed that OTM instructors were reasonably skilled at instructing students in desktop publishing software. The survey also discovered that respondents' mean ratings of their ability to teach desktop publishing applications effectively varied significantly depending on their gender and the ownership of the institution (State and Federal). According to the study's findings, OTM instructors were fairly proficient in the use of desktop publishing skills to instruct their pupils. It was suggested that OTM instructors pursue self-improvement in order to reach the anticipated level of competence in instructing desktop publishing programs based on the research findings.
Keywords: Self-rating, Proficiency, Desktop publishing, OTM lecturers, Effective teaching

1.0 Introduction

One of the tertiary educational levels offered is polytechnic education. This kind of education is one of the two-tier programs that include a National Diploma (ND) and a Higher National Diploma (HND). One of the requirements for admission to the HND program is one year of work experience. Polytechnics are owned by federal, state, and private entities. The national policy on education 2004, cited in Okoro (2021) The goals of polytechnic education are to: provide full-time courses of training and instruction in engineering, other technologies, applied sciences, business, and management that result in the production of trained manpower; and provide the technical knowledge and skills required for Nigeria's occupational development as well as the training and impact required for the production of skilled personnel who will be enterprising. According to Aliyu (2019), the National Board for Technical Education is in charge of both approving Office Technology and Management (OTM) programs and overseeing quality control in Nigerian polytechnic education. They offer minimal requirements for personnel, finance, management, physical infrastructure, and equipment.

Office technology and management programme is a computer-based design to accommodate modern office technology. The objectives of office technology and management programme as designed by (NBTE 2004) is aimed at equipping students with office/secretarial skills for employment in various fields of endeavor. Along with gaining vocational skills in office technology and administration, students also acquire effective work competencies and socio-psychological work abilities, which are critical in daily interactions with people.

The OTM programme will aim at providing the business world with highly skilled knowledge workers who will manage information efficiently, equipped with a comprehensive range of skills including managerial, technological and communication skills (Adelakin, 2009). Apart from the above objectives, Nwana (2020) added that the programme will be aimed at preparing students for entrepreneurial competencies. The OTM programme curriculum was structured in four semesters to include classroom, laboratory and workshop activities. It is designed to consist of 15 weeks of instruction (including teaching, practical activities, tests, and quizzes) and 2 weeks of registration and examination.

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Apart from other courses, the curriculum contents include office applications such as Information and Communication Technology I (ICT I) for word processing, ICT II for spreadsheet, Database management and Desktop publishing and webpage design. NBTE (2004) stipulates 75 percent practical and 25 percent theory as assessment criteria at the end of the semesters. The facilities for the OTM programme must be up to date and adequate. This is in line with Aliyu's proposition, (2006), that for a polytechnic to give its student a thorough training, it must be equipped with adequate appliances on which it intends to give instruction and such equipment should relate to what is in use in modern office. This paper is set to dwell specifically on desktop publishing since it is among the courses offered.

Office Technology and Management lecturer is a person who possess the relevant qualities and qualification for effective teaching of OTM courses. OTM lecturer is expected to have multidimensional skills that range from teaching skills, entrepreneurial skills, information processing skills, keyboarding and interpersonal skills. Nonye and Nnenna (2019) reported that, apart from teaching computer courses, records keeping, peoples' communication skills, office practice and professional ethics. The OTM lecturers also mentor students on cloud computing and electronic office procedures (Nwana, 2020). They often combine academic activities, administrative activities and practical experience to make sure that their students are prepared for modern office work. Okoye (2021) claimed that, lecturers of OTM provide support in graduating competent office managers by emphasizing productivity and efficiency ahead of real work situations.

The effectiveness of office technology and management (OTM) teachers is vital for students to succeed and relies on several important factors. According to Abubakar and Ibrahim (2019), proficient teachers have strong knowledge of their subjects, engage students with interactive teaching methods and focus on applying concepts in real-life situations. Again, Aliyu (2019) asserted that lecturers use technology wisely, create meaningful assessments, and give helpful feedback. From the understanding of Garba (2015), OTM lecturers are becoming adaptable and innovative in keeping up with the fast-changing nature in their field. This is to say that their success shows in student results, like grades and job readiness. From the view of Adeyemi (2019), even with challenges in technology, OTM teachers can find ways to innovate and improve, helping students thrive in technology careers. Schools should support their growth to ensure high-quality teaching.

Proficiency is the ability to use office applications such as desktop publishing to demonstrate how to create, modify, save or print pamphlets, cards calendars and posters. Proficiency, as mentioned by Popham (2001) is measured by the lecturers' ability to master, solve, comprehend and compose all the basic elements in the use of office application. These abilities are measured within a specified time and under a specified condition monitored by lecturers' head of departments or quality assurance assessors. Proficiency, according to Knox (1980) is the capacity of an individual to perform a task in a satisfactory manner if given the opportunity to do so. This translated to mean that when lecturers are assigned to teach desktop publishing application, they are expected to deliver proficiently.

The proficiency of Office Technology and Management (OTM) lecturers in teaching desktop publishing application software is pivotal for equipping students with the necessary skills to thrive in modern office environments. Brown (2018) described desktop publishing (DTP) as the use of specialized software to combine text and graphics, creating professional documents such as brochures, newsletters, and manuals. For OTM lecturers, mastery of these applications is essential to effectively impart relevant knowledge and competencies to their students (Gude, 2020).

The National Board for Technical Education (2004) buttressed the need to incorporate desktop publishing into the OTM curriculum as essential due to the increasing reliance on digital content creation in various industries. Aliyu (2019) reported that polytechnic educational system has recognized the need to integrated DTP courses into the OTM programs for inculcating the necessary skills and values to the students so as to fit competently into the position of modern secretaries.

Gude (2015) viewed Desktop publisher as an application which allows one to create artistic documents such as brochures, flyers and newsletters. He investigated self-rating on database management system and desktop publishing proficiency by office technology and management students in North-West

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Nigeria Polytechnics and found that lecturers' proficiency is mandatory because students' expected knowledge of the subject will enhance creativity. It was concluded that many of the commands and toolbars in publisher are similar to Microsoft word which allow users with opportunity to find text for editing or formatting. A substantial variation was found further in the mean rating of OTM students' responses about the desktop publishing sub-skill in Northwest Nigeria Polytechnics.

However, publisher is much more flexible in the text, graphics and even tables since all are independent elements. It is precisely the maneuvering and positioning of these elements that enable complicated layout to be achieved in a professional manner (Louviauille, 2011). This suggests that, with publisher skills, the lecturer will have requisite proficiency to demonstrate text, graphics, images and tables in various ways, depending for learners to assimilate.

Roy 2020 in Garba (2020) stated that OTM instructors can use publisher to teach sophisticated publication using a mixture of graphics and text. Whereas Microsoft (2010) affirmed that some publishing documents such as brochures, bookmarks greeting cards, programs, business cards, certificates, receipts, invoices, postcards, ledger, diaries are easy to design. In this regard, the proficiency of lecturers can enable students to learn with interest.
Publisher is therefore included in the more expensive version of Microsoft Office, which reflects Microsoft's emphasis on the program as a user-friendly and affordable substitute with a focus on the small business market where companies lack dedicated design professionals to create marketing materials and other documents (Publisher basic 2021). By this statement, lecturers' exposure to desktop publisher could make such a task simple and cost effective.

Haro (2017) investigated supervisors' rating of competencies possessed by OTM graduate workers in public organisations in Katsina State and found that lecturers' incompetence in teaching desktop publisher made supervisors in public organization in Katsina State to rate OTM graduate workers at a low extent.

Okoye (2021), emphasised that the publisher has provided methods for packing relevant files into an application that can expand on its own. In earlier iterations, a number of advanced capabilities, such as transparency, object shadowing, slugs, text on path, and integrated PDF output, were either unavailable or not entirely functioning. The author added that the recent versions have greater capabilities concerning colour separation and proper process coloring output. Gude (2020) investigated administrative supervisors' rating of desktop publishing competencies possessed by Office Technology and Management graduate workers in North-West Nigeria Polytechnics and found that the new publisher program has the potential to produce PDFs of commercial press quality with embedded fonts. He concluded that when it comes to multiple-user electronic editing or dissemination, publishers are usually acknowledged to have limited capabilities. It supports numerous other files formats on windows platforms (Publisher Viewer, 2010). Patience and Ile (2018) investigated office competencies required of business education graduates for effective performance in modern offices in Imo State and found that OTM graduates' knowledge on desktop publishing is worrisome in Imo State modern offices.

With introduction of desktop publisher, the OTM lecturers' proficiency could maximally be used in teaching process to enhance students' productivity with speed and thus save cost and minimize waste. In addition, competitions in these areas have increased because the level of professionalism in manipulating desktop publishing determines the organisation's strength. Therefore, creativity, innovation and fashion are gained through desktop publishing.

Statement of the Problem

The curriculum for Office Technology and Management (OTM) is created to adhere to information and communication technology nomenclature. The curriculum elements of the National Board for Technical Education (NBTE, 2004) state that the OTM products should have computer competencies and work-related abilities upon completion of training. However, from the observations of employers, the products of polytechnics who serve as secretaries do not possess the relevant desktop publishing skills to perform the office work. This made the employers to suspect the proficiency of OTM lectures

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on computer applications for effective teaching. Garba (2020) stressed that today, polytechnic lecturers employed to teach in private and public tertiary institutions are expected to demonstrate proficiency in desktop publishing and knowledge of computer applications to enable effective teaching.

It seems there is a gap between the employers' expectations and the lecturers' proficiency in training the potential secretaries to work competently in the modern office. The implication could be that the curriculum objectives could not be met, which could translate to graduating incompetent graduate secretaries. To effectively teach desktop publishing software at North-West Nigerian polytechnics, the researcher begins a study of the self-ratings of Office Technology and Management lecturers.

Research Question

1. How do OTM lecturers in the North-West Nigerian polytechnics rate their proficiency in desktop publishing?

Null Hypotheses

The following two null hypotheses were tested at the 0.05 level of significance.

1. OTM lecturers in North-West Nigerian polytechnics do not differ significantly in their mean self-rating of their proficiency in desktop publishing as a result of their gender.
2. OTM lecturers in state and federal in North-West Nigerian polytechnics do not differ significantly in their mean self-rating of their proficiency in desktop publishing.

3.0 Methodology

The study employed a descriptive survey research design. Seven states in Northwest Nigeria included the region. The study's population consisted of 136 lecturers from the heads of the management and office technology departments at all the polytechnics that provided OTM programs. Although the sample size of 136 is 103 (Krejcie & Morgan 1970), the study used the entire population to have a robust result that is fully representative of the population. The "OTM lecturers' Proficiency on desktop publishing applications questionnaire" (OLPODPAQ) was a structured questionnaire used to collect data. It has section A and B. Section A contains demographic data of the respondents while Section B contain 17 items respectively with a 5-point Likert type rating scale of very proficient (VP) with 5 points; Proficient (P) with 4 points; fairly proficient (FP) with 3 points; barely proficient (BP) with 2 points and not proficient (NP) with 1 point. Three experts—two academics in the field of office technology and management and one specialist in measurement and evaluation from Federal College of Education Kano - validated the instrument. The split half method with Pearson Product-Moment Correlation was used to assess the instrument's reliability. The coefficient yielded a 0.77 result. The researcher in person with help from polytechnic assistants administered the test. Of the 136 copies of the instrument distributed, 127 (or 93%) were found and analysed. To respond to the study question and determine how close the respondents' mean evaluation was, the data was examined using the mean and standard deviation. The null hypotheses were tested at the 0.05 level of significance using the inferential statistic of the t-test. The reason for adopting the t-test was to ascertain if there is a statistically significant difference between the mean scores of the respondents. When the t-calculated was larger than the t-critical, the null hypothesis was rejected; when the t-calculated was less than the t-critical, it was not rejected.

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4.0 Results

Table 1: Respondents' mean rating of their proficiency on Desktop publishing activities

N =127

S/N	Items	$\bar{X}$	SD	Remarks
1.	Show students how to load (open) desktop publishing software	3.77	0.22	Proficient
2.	Display how to use master page and templates	3.54	0.33	Proficient
3.	Demonstrate how to set page size and margins	2.53	0.25	Fairly proficient
4.	Teach students how object can be imported	3.43	0.29	Fairly proficient
5.	Demonstrate how to select and differentiate between sans and sans serif	2.66	0.33	Fairly proficient
6.	Illustrate how text files and images can be exported	2.05	0.21	Barely proficient
7.	Illustrate the basic capabilities of DTP software.	2.50	0.25	Fairly proficient
8.	Demonstrate how to use line boarder to separate text	2.56	0.32	Fairly proficient
9.	Show the use of left center alignment and full justification in a Desktop Publication	3.58	0.41	Proficient
10.	Teach students how to use common DTP conventions like first line indents	2.49	0.24	Barely proficient
11.	Show students how to manipulate, move and resize images	2.71	0.43	Fairly proficient
12.	Direct students how to insert and adjust column.	2.73	0.19	Fairly proficient
13.	Demonstrate on the documents management techniques for the chosen DTP software.	2.35	0.37	Barely proficient
14.	Show students how to edit image and text	3.54	0.31	Proficient
15	Guide students to work with generic document terms	2.44	0.28	Barely proficient
16.	Demonstrate how to create an image	2.47	0.48	Barely proficient
17	Show how to manipulate picture image	3.51	0.43	Proficient
	Grand mean	2.87		Fairly proficient

Source: Field study, 2025.

The information contains in Table 1, presents the mean and standard deviation with respect to research question 1. The responses for items 1, 2, 9, 14 and 17 have the mean ratings of 3.77, 3.54, 3.58, 3.54 and 3.51, which implies that OTM lecturers are proficient in five desktop publishing activities. Meanwhile, they are fairly proficient in seven items based on the means that range from 3.43 – 2.50. But items number 6, 10, 13, 15 and 16 reveal the mean ratings from 2.05 – 2. 49 meaning that OTM lecturers are barely proficient in the five items on desktop publishing activities. The grand mean of 2.87 falls within the real limit of fairly proficient. The standard deviations for all the items are closely related. Therefore, it could be inferred that OTM lecturers in North-west Nigeria Polytechnics are fairly proficient in teaching desktop publishing activities.

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Table 2: **A summary of the t-test study of the average proficiency ratings for desktop publishing tasks among male and female lecturers.**

Gender	N	Mean	SD	Df	Std Error	t-cal	L/S	t-crit	Decision
Male	86	4.59	3.11						
				125	0.62	2.45	0.05	1.96	Not rejected
Female	41	3.07	341						

According to Table 2 above, the computed t-value is 2.45 at the 0.05 level of significance and 125 degrees of freedom (df). The null hypothesis is rejected since the t-table of 1.96 is smaller than the t-cal of 2.45. This indicates that the mean self-evaluation of desktop publishing competency by male and female OTM instructors at North-West Nigerian polytechnics differs significantly due to their gender.

Table 3: An analysis of the t-test study of the average performance ratings for desktop publishing tasks among federal and state lecturers.

Institution	N	Mean	SD	Df	Std Error	t-cal	L/S	t-crit	Decision
State	76	3.83	2.13						
				125	0.37	2.21	0.05	1.96	Rejected
Federal	51	3.01	1.97						

Table 3 illustrates that at 125 degrees of freedom and the 0.05 threshold of significance, the t-calculated value of 2.21 is higher than the t-critical of 1.96. This implies that the null hypothesis is disproved. This indicates that the mean self-rating of desktop publishing proficiency by State and Federal OTM Teachers in Northwest Nigerian Polytechnics varies considerably due to the nature of these schools.

Discussion

The descriptive statistics in Table 1 highlight desktop publishing proficiency among the OTM lecturers at North-West Nigeria Polytechnics. The results show that the they are fairly proficient in teaching desktop publishing tasks to their students. This pattern suggests that while the respondents are fairly proficient, Students lack the requisite competency in demonstrating desktop publishing skills. This finding corroborates with Gude (2015) who reported that lecturers find it challenging in working with Desktop publisher environment. This was justified by Haro (2017) that lecturers' incompetence in teaching desktop publisher made supervisors in public organization in Katsina State to rate OTM graduate workers at a low extent. In confirmation of the above, Patience and Ile (2018) narrated that OTM graduates' knowledge on desktop publishing is worrisome in Imo State modern offices. Therefore, lectures proficiency on this course is highly required if curriculum objectives of OTM is to be achieved.

The results of the tested hypothesis also show that the mean response of respondents is significantly influenced by gender and the type of institution. The implications could be as result of teaching techniques or availability of instructional facilities. The result is in contrast to the findings of Haro (2017), who found that supervisors of public organisations in Katsina State did not significantly differ in their mean assessments of OTM graduate workers' proficiency with desktop publishing software. The results, however, are consistent with Gude's (2015) observation that there is a substantial variation in the mean rating of OTM students' responses about the desktop publishing sub-skill in Northwest Nigeria Polytechnics.

Conclusion

The study examined OTM lecturers' self-evaluation of desktop publishing skills for effective teaching. The results showed that OTM lecturers in North-West Nigeria Polytechnics possessed little desktop publishing skills for effective teaching, suggesting that their skill may not be adequate to effectively teach desktop publishing. Gender and the type of institution influenced the respondents' self-

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evaluations which the resultant effect could either be the diversity of teaching method or instructional materials. It is therefore concluded that there is the need for the lecturers to consolidate on seeking more knowledge on desktop publishing through training and personal development.

Recommendations

1. To get the required level of competence in teaching desktop publishing applications, OTM instructors in North-West Nigeria Polytechnics should pursue self-improvement.
2. In order to facilitate an efficient teaching and learning process, the management of the institutions included in the study should make sure that the OTM departments have sufficient instructional resources.
3. OTM lecturers and students should endeavour to possess personal computers and desktop publishing tutorial to augment deficiencies for effective leaning process.

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DATA SECURITY RISK MANAGEMENT IN THE OFFICE ENVIRONMENT OF PUBLIC ORGANIZATIONS IN OYO STATE

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Abstract
This study deemed it fit to investigate the ethics, data privacy and security in office environment of organisations. The study only considered the review of journals, books and other literatures to accumulate results and observations. Findings revealed that data privacy and security is essential for individuals to maintain control over their information and to protect privacy rights. Without privacy, individuals may be at risk of identity theft, harassment, or other forms of harm. The study recommended that Individuals must be fully informed about how their personal/organisational information is being used and be able to give or refuse consent to use it. Consent must be freely given and informed without coercion or manipulation. Organizations must be transparent about how they collect, use, and disclose personal/organisational information. Organizations must take steps to protect personal/organisational information from unauthorized access, use, or disclosure. Organizations must take steps to ensure the security of personal/organisation information, including protection against cyber-attacks, data breaches, and other security threats. Finally, as our lives become increasingly digitized, it is essential that we continue to prioritize privacy and security of data to protect personal and organisational information in office environment.
Keywords: Office Environment, Ethics, Data Privacy and Security.

Introduction

In today's world, security is much needed because of incremental growth in technology and ease of access to that technology. Security is the protection from any danger, threat, harm etc. Every valuable asset needs to be secure. Confidential data must be secure from unauthorized users. Data must be made available to right person at the right time and in right format without any ambiguity. Security protects information system from data loss, misuse or damage to the hardware and software. Security gives protection against network attacks, code injection, intentional or accidental attacks etc. Security services such as confidentiality, integrity and availability, provides us adequate security (Coles, 2020). There are many people who try to break into network or computer to steal valuable data and information or damage the system. This act is known as information security breach. Several categories of people who conduct information security breach are generally known as hackers, cracker, cyber terrorist, cyber extortionist, unethical employee, script kiddies, corporate spy etc.

Privacy is a fundamental human right that is vital in the context of office ethics. Privacy refers to the ability of individuals to control their personal information and to prevent unwanted intrusion or exploitation. In the digital age, privacy has become a critical issue due to the vast amount of personal information that is being collected, stored, and analyzed by organizations around the world (Rothchild, 2018). As a result, office ethics has developed a range of ethical principles and guidelines to ensure that information privacy rights are respected. The concept of privacy has existed since the inception of computer technologies. However, with the massive growth of internet technology in the 1980s, the threat of information privacy became eminent once more due to the development of technologies such as cookies, web beacons, and tracking software, which made it easy for corporations to steal data (Soe, 2020). To enhance information privacy, technologies like encryption, pseudonymization, and anonymization were developed to counter the threat to information privacy.

Nonetheless, the 21st century saw an amplification of information privacy concerns because of the increase in social media use (Soe, 2020). Big tech giants like Google and Facebook have continually violated privacy concerns which has led to public outrage and a spike in information privacy concerns. Privacy is a multifaceted and intricate concept in office ethics. Several scholars have researched this topic to gain an understanding of various issues related to the concept. In 2019, the University of Pennsylvania conducted a study on information privacy and noted that a staggering 91% of information consumers in the United States believed that they didn't have autonomy over their personal data which

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has led to breaches in organisation (office environment) information (Jørgensen, 2019). Purposeful work situation in an anticipatory style are needed by most organizations to accomplish the desired level of data security, ethics and privacy.

The ability of employees within an organization to have a positive overall attitude towards the job throughout a system depends on the conditions of their environment. The environment is man's immediate surrounding which they manipulate for their existence. Negative manipulation introduces hazards that makes the environment unsafe and impede for organisation data security and privacy. The workplace entails an environment in which the employee performs his/her work assignments while an effective workplace is an environment where results can be achieved as expected by management. However, many organizations do not fully leverage their work environment to enable increase collaboration, innovation and improve work effectiveness. Employees tend to be more productive in a well-facilitated work environment (University of Pennsylvania, 2021). More so, the quality of comfort derivable from office environment determines the level of satisfaction and performance of workers.

In other words, how well organizations ensures a well-facilitated office environment, obviously, determines the well-being of all the stakeholders including the precious data of the organisation. A workplace environment can also be identified as the place that one works, which means the milieus around a person. It is the social and professional environment in which a person is supposed to interact with a number of people. It is supposed to include a friendly, well-designed, safe physical space, good equipment and effective communication, which will enhance data security and privacy. Information technology driven offices and work areas make significant differences to how people feel about their work. Working environment can give some depressing messages about how much the organization value employees and the standards it expects from them (Center, 2019). Furthermore, the ability to share knowledge throughout organizations depends on how the office environment is designed to enable organizations to utilize office environment as if it were an asset. This helps organizations to improve effectiveness and allow employees to benefit from collective knowledge". In addition, a work environment designed to suit employee's satisfaction and free flow of exchange of data is a better medium of motivating employees towards higher productivity. The work environment are composed of two basic components which are the physical component as well as the behavioral component. It is said that the physical environment consists of elements which is related to the connectivity of the user with their office environment. Meanwhile, the behavioral environment consists of elements which is related to the connectivity between users in the same office environment as well as the impact of working environment on the user's behaviour (Duniya, 2019).

Office environment is a place where administration that is, the management and handling of information takes place. Office tools/equipment, office technologies and nature of secretarial work are factors to be consider in measuring work environment (Ponemon, 2019). Office tools are the application software that help secretaries perform office related tasks easily and efficiently. Therefore, these tools help to create, manage and manipulate large amounts of data and documents both manually and automatically. Office technology is hardware and software that empower information management and academic development such as photocopiers, printers, VolP printers, servers and wide format printers. Therefore the work environment of the secretaries is expected to be automated so as to enhance their duties and make the work conducive for them. Therefore, this research therefore investigates ethics, data privacy and security in office environment.

Literature Review

Office Environment

To succeed with an office environment concept based on flexibility and openness requires a new and different way of looking at offices. The office must be regarded more as a tool, like any computer or telephone system, with the main purpose of supporting the business tasks. The organization of computer-based tasks has proven to have an essential impact on the comfort of the user. The environmental factors in the office also play an important role in ensuring comfort and efficiency in task performance. Reflections in video display terminal screens, high indoor temperature, and disturbing noise levels are factors that could occur in cases of bad office planning. The negative impact of those factors must not be overlooked. Even though the computer hardware is designed according to the latest ergonomic findings, extensive keyboard input work could still cause muscular problem such as repetitive strain injury. Flexibility in work practices and work positions is essential to minimize

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health and safety risks. This paper presents a review of the effects of business process analysis approach to office environment, office environmental ergonomics, and workstation design tools (Dargahi, 2017).

Extended work with computers can lead to muscular fatigue and discomfort, usually in the back, arms, shoulders and neck. As well, if the computer is used for prolonged periods in awkward postures, there is a risk of musculoskeletal injury (MSI). This risk increases as the intensity of computer work increases. Frequently, the source of muscular fatigue and discomfort is the operator's posture while working at the terminal, and this posture is due in turn to the layout of the computer workstation and the furniture provided. The specific tasks and the intensity of the work are also factors. Computer operators may experience visual as well as muscular fatigue and discomfort. Symptoms include eyestrain, burning eyes, blurred vision and headaches. The layout of the computer workstation can increase the visual demands on operators, as can lighting levels and glare (Dargahi, 2017). Office environment is the science of making the workstation essentially fit, comfortable, safe, secure and efficient for the workers so that they enjoy giving more productive output to the organization they belong to. In general, the purpose of technology driven work environment is to fit the task to the individual and not the individual to the task. Chronic addiction to gadgets, handheld devices now-a-days increase chances of many musculoskeletal disorders which cannot be neglected. Many researchers' claims that prolonged working on these gadgets results in faulty postures with a high risk of developing injuries (Union, 2021).

The human environment can be interpreted as the network of formal and informal interaction among colleagues; teams as well as boss-subordinate relationship that exist within the framework of organizations. Such interaction, especially the informal interaction, presumably, provides avenue for dissemination of information and knowledge as well as cross-fertilization of ideas among employees. Furthermore, it has been established in several studies that workers' interpersonal relations at workplace tend to influence their morale (Deora, 2021). Hypothetically, whatever affects morale on the job is likely to affect job commitment. Accordingly, the third type of office environment, organizational environment includes systems, procedures, practices, values and philosophies which operate under the control of management. In other words, organizational environment refers to the immediate task and national environment where an organization draws its inputs, processes it and returns the outputs in form of products or services for public consumption (Duniya, 2019).

These three types of environments can further be categorized into two basic types, based on the influence they exert on the employees at work. A lot of studies have posited that employee personality profile is not static. It is dynamic and changes with the working experiences in the organization environment. Hence, the work environment can be classified into conducive and toxic environments (Dawes, 1984). Conducive workplace environments give pleasurable experiences to the employees and help them actualize in the dimensions of personality profile while toxic workplace environments give painful experiences and de-actualize employees' behaviour. It is believed that irresponsible or uncommitted employees can change to be responsible and be more committed to job in conducive office environment because such environments reinforce the self-actualizing traits in them.

The social and psychological climate can also be a metric to use when distinguishing between different types of office environment. Some workplaces have very rigid chains of command, while others may be more flexible and egalitarian. Employees may be encouraged to participate, offer feedback, and shape their environment, or could be expected to focus on tasks without criticizing their employers or supervisors. Some workplace climates can become hostile because of a tolerance for harassment or ferocious competition, while others are more friendly and relaxed. Another researcher classify office environment as physical environment and social environment and administrative environment. The Physical Environment includes Work Load, Technology/Equipment, Availability of material supply, Shift timings, Working hours and etc (Norton, 2021). The Social Environment also consist of Interpersonal Relations, Multiple teams, Management Style/Support, Status at work, Autonomy, Decision Making, Culture and Climate. The last one which is Administrative Environment comprises Organizational Structure, Organizational Goals, Policies for Promotion, Leave, Transfer and Performance Evaluation.

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Physical Environment: The ability of the physical workplace environment to influence behaviours and to create an image is particularly apparent for any organization. The physical environment includes components of the tangible workplace environment that comprise spatial layout and functionality of the surroundings. Spatial layout refers to the ways in which machinery, equipment, and furnishings are arranged, the size and shape of those items, and the spatial relationships among them. The spatial layout of furniture was found to influence the amount and nature of conversation between individuals. Functionality refers to the ability of the same items to facilitate performance and the accomplishment of goals. How performance is achieved will be affected by how well people fit with their physical workspace and physical work environment. In a broader perspective, the physical workplace environment; include but not limited to the comfort level, ventilation, heating, natural lighting and artificial lighting (Al Horr, 2016).

Accordingly, these features assist on the functional and aesthetic side, the décor, and design of the office environment that ultimately helps improve the employees experience and necessitate better performance. This emphasizes that services offered in organization must base on the utility and the role of environmental information, facilitating employees' engagement with better space management, and the automation of certain tasks. Similarly, if the tasks to be performed are very complex, efficiency of layout and functionality will be more important than when the tasks are mundane or simple. Office layout and design impressions suggest that certain dimension serves a symbolic function by connoting meanings and images about organizations and further how their employees are to be engaged. Based on these affordances, it is suggested that employees will tend to identify more with these features which enhance performance. Informal seating arrangements, such as chairs placed at a right angle facilitate social interaction, whereas formal seating arrangements, such as chairs placed back-to-back discourage social interaction. This also helps explain how style of furnishings and other physical symbols may come to serve a symbolic function.

Psychosocial Environment: The psychosocial factor of office environment is generally considered to be one of the most important issues in contemporary and future societies. They refer to the interactions between the environment and working conditions, organizational conditions, functions and content of the work, effort, workers' individual characteristics and those of members of their families (Assaf, 2017). Therefore, the nature of the psychosocial factors is complex, covering issues relating to the workers, general environment and work. Employee workplace welfare can be described in terms of six key areas: a manageable workload; some personal control over the job; support from colleagues and supervisors; positive relationships at work; a reasonably clear role; and a sense of control or involvement in changes at the workplace. Individual association with the working environment are important as they impact upon the ability of the individual to take control of their work and the level of stress they experience within the workplace. The behavioural factors that may affect the performance of employees at work place are the exclusive nature and function of job satisfaction change, or systematic development or weakening in job satisfaction over spell. There are lots of other aspects that may enhance or lower the employees' performance some of which include role congruity, supervisor support and leadership styles in organizational rank among the factors that may individually and collectively effect on the performance of employees.

Job Aids Environment: Job aid simply means a written tool or document which provide guidance where employees can learn on their job by themselves. It can be in the form of job steps or procedure where it has instructions on how to complete a task in its best way. On another note. Job aid actually minimizes the error rate and this could be achieved by providing guidance, procedures, templates and checklists to assist the employees. Apart from reducing errors, job aid ought to be providing satisfaction to the employees by providing an easier way or process to complete a task. It was concluded in his study that a good employee would not be able to perform even though they are productive if the required job aid is not provided during the specific time (Ali, 2013).

Data Security Risk Management

Security can be defined as the protection offered to an automated information system in order to attain the applicable objectives of preserving the confidentiality, integrity and availability of information system resources (includes hardware, software, firmware, information/data and telecommunication) (Utz, 2019). Security mainly consists of confidentiality, integrity and availability and they are referred as security attributes, properties, goals, basic building blocks etc. Ethics can be defined as rules and regulations that have been formed to allow an individual to work in accordance to moral principles. Activities done by individuals are governed by ethics. In every organization there are some ethics

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which must be followed by every user. By acting in accordance to the ethical code, there will be less disruption in an organization. If the employees of an organization do not follow the ethics, then there will be adverse effect on both organization and on employees. The behavior of individual depends on the moral values and ethical practices followed by them. It also enables them to distinguish between rights and wrong (Lovan, 2021). The English word ethics is derived from an ancient Greek word ethikos, which means "relating to one's character". This adjective is derived from another Greek word, ethos meaning "character, disposition" (Taylor, 2017). Doing whatever society accepts does not mean we are ethical. Sometimes the whole society can become unethical and corrupted. However, if being ethical were doing "whatever society accepts," then one would find out what society accepts, instead of what is ethical.

Data Security Ethics

As technology progresses, data breach is also found on the increase. Network and data became more prone to attacks. Network and data must be protected from attack, data loss, misuse theft etc. Data security risk is any action that could cause loss of information to software, data, processing incompatibilities or damage to computer hardware. A branch of data security is known as cybercrime. An illegal act based on internet is known as cybercrime. Several categories of people that carry on cybercrimes are hackers, crackers, cyber terrorist, cyber extortionist, unethical employee, script kiddies, corporate spy etc. These categories are described below (Vaccaro, 2006):

- A hacker is defined as a person who unlawfully uses computer to gain unauthorized access to computer or computer network. Hackers often claim that they do hacking in order to find out loopholes in a network.
- Cracker is a person, who intentionally access computer or computer network. Their intentions are not good. They try to steal or destroy the information. Crackers and hackers have advanced network skills.
- Cyber terrorist is a person who uses the computer network or internet for political reasons to destroy the computer system. It requires highly skilled persons, lot of money to implement and years of planning.
- Cyber extortionist is a person who uses email as an offensive force. They threaten a company by sending a threatening email stating that they will attack company's security or release confidential information of company. They demand a certain amount of money in exchange for not launching an attack.
- An unethical employee is a person who unlawfully accesses the company's network, so that he could steal top secret information of the company or want to take revenge.
- Script kiddies are similar to crackers because they might want to do harm, but they lack the technical skills. They use prewritten cracking programs.
- A corporate spy is a person who has great computer and network skills and they are hired so that they can break into a computer or computer network to steal or delete data.
- Hacking is often taken in negative sense but there are many people who hack into the system legally to identify the potential threats in the network. These people are known as ethical hackers. Ethical hacking and Ethical hacker are terms used to describe hacking performed by an individual or company to identify potential threats on a computer or network. An ethical hacker searches for the weak points that could be used by malicious hackers. The organizations use this information to improve the system security, in order to eliminate any potential attacks. People believe that there is no such thing as an ethical hacker/ethical hacking. Hackers are referred to as computer criminals or cyber criminals. The work done by ethical hacker, may improve the security of any organization.

Ethical Considerations Dealing with Data in Office Environment

When dealing with personal/organisation information in office environment, there are several ethical considerations that must be considered. These considerations revolve around issues of consent, transparency, and data protection. This widespread collection and use of personal data by companies and organizations have raised concerns about the potential misuse and exploitation of this information and has led to the development of ethical guidelines and principles to ensure that individuals' privacy rights are respected. One of the most important ethical considerations when dealing with personal information in digital spaces is the issue of consent. Informed consent requires that individuals be fully informed about the purposes for which their personal data is being collected and used. They have the right to control how their personal data is used. Consent is particularly important

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when dealing with sensitive personal data (Calzada, 2019). Transparency is another key ethical consideration when dealing with sensitive personal data in office environment. Transparency requires that companies and organizations be open and also honest about their data collection and use practices and that they provide individuals with clear and accessible information about how their data is being used. This includes providing individuals with clear and concise privacy policies and ensuring that individuals have the ability to access and correct their personal data if it is necessary.

Data protection is another important ethical consideration when dealing with personal/organisation data in office environment. Data protection requires that companies and organizations take appropriate measures to safeguard personal/organisation data from unauthorized access, use, or disclosure. This includes implementing strong security measures, such as encryption and firewalls, and ensuring that employees are trained to handle personal/organisation data in a responsible and ethical manner (Tan, 2019). The overall ethical considerations surrounding personal information in the digital space are complex. To ensure that individual privacy rights are respected, it is essential that companies and organizations adopt a proactive approach to data protection and transparency. They make a concerted effort to obtain informed consent from individuals before collecting and using their personal/organisation data.

One of the ethical considerations when dealing with personal/organisation information in office environment is the issue of informed consent. Informed consent is the principle that individuals should have the right to make informed decisions about how their personal/organisation information is collected, used, and shared. In the context of digital spaces, informed consent is particularly important, as personal/organisation data is often collected and used without individuals' knowledge or explicit consent. One of the main challenges with informed consent in digital spaces is the complexity and opacity of data collection and analysis processes. Many individuals are concerned about the extent to which their personal/organisation data is being used and may not trust that organizations or corporations will handle their data while adhering to computer ethics (Mantelero, 2021). The prevalence of the general public's distrust towards those who handle their data can make it difficult to promote overall transparency and culpability around information collection and analysis practices. To address this challenge, it is crucial for organizations to enhance transparency in their data collection and analysis practices in order to gain the trust of individuals. This could include measures such as the use of independent third-party auditors to verify compliance with privacy regulations and also regular audits of data practices.

Additionally, another challenge with promoting informed consent in digital spaces is the legal and technical language used in privacy policies and terms of service agreements. Concisely, organizations often employ language with uncommon terminologies which may not be understood by many people. The use of such terminologies may lead to people giving consent about the use of their personal/organisation information unintentionally, leading to extreme violations of privacy rights to innocent individuals. To mitigate this issue, the language used in terms of service should be clear and simple to ensure that all people, regardless of their educational backgrounds, have a clear understanding of the terms of service that they are consenting to. Another challenge with promoting informed consent in digital spaces is that, even when individuals are aware of the collection and use of their personal/organisation data, they may not have the ability to make informed decisions about how this data is used. In many cases, individuals may be required to agree to data collection and analysis practices in order to use certain services or access certain information (Herrle, 2019). This creates a situation in which individuals may feel that they have no choice but to agree to these practices, even if they do not fully understand or agree with them. To address this issue, regulations should be in place to ensure that all decisions regarding privacy consent are on the consumer. Organizations must not acquire personal/organisation information from individuals who do not want to offer their personal/organisation information or data.

Overall, it is essential to promote greater transparency and clarity around data collection and analysis practices. This may involve simplifying privacy policies and terms of service agreements, as well as providing individuals with more accessible and understandable information about how their personal/organisation data is being used. Additionally, it is important to provide individuals with greater control over their personal/organisation data by giving them the ability to opt out of certain data collection and analysis practices or to request that their data be deleted. An example of an ethical

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framework for promoting information consent in office environment is the concept of "data autonomy." Data autonomy is a framework that seeks to promote individuals' right to make informed decisions about how their personal/organisation data is collected, used, and shared (Klemovitch, 2021). Data autonomy emphasizes the need for individuals to have greater control over their personal/organisation data, as well as greater transparency and accountability from companies and organizations that collect and use this data. Another example of an ethical framework for promoting informed consent in office environment is the concept of "data sovereignty." Data sovereignty is a framework that seeks to promote individuals' right to control their personal/organisation data by giving them ownership and control over this data. Data sovereignty emphasizes the need for individuals to have greater control over the use and sharing of their personal data as well as greater transparency and accountability from companies and organizations that collect and use this data. Concisely adhering to these ethical frameworks will aid in promoting information autonomy and consequently reduce data violation concerns.

Influence of Ethical issue on Technology application in the Office Environment

As technology increases, it poses a threat on the privacy of people. The impact of the use of technology on the privacy of people demonstrates itself in a variety of areas. These areas are described as below (Kashid, 2021):

1. The electronic monitoring of the people in the workplace: This is done by CCTV camera. According to justification of companies they use this technology in order to increase the productivity. But it threatens the privacy of the people and such technology can lead a feeling of fear or being watched by all the time.
2. Interception and reading of e-mail messages: It poses an ethical problem relating to the private communication of an individual. Companies justify it by saying that they check the e-mail to see resources belong to the company and not to the individual and to check whether employees use the facility for right purpose or not.
3. Merging of databases which contain personal information: It is also known as data banking. Merging of personal/organisation data is done in one central database from different databases. Here the individual is not aware of personal/organisation information being integrated into a central database and for what reason or by whom and the information is accurate or not.
4. Hackers and crackers: They are a threat to privacy because they break into the networks and computer systems and to steal important and personal/organisation data. They can even destroy the system.

Challenges Associated with Protecting Data Privacy and Security in Office Environment

Ethical consideration when dealing with personal/organisation information in office environment is the issue of data security. Data security refers to the measures that companies and organizations take to protect personal/organisation information from unauthorized access, use, or disclosure. Data breaches and other forms of cyber-attacks can have significant consequences for individuals, including identity theft, financial fraud, and reputational damage (Lee, 2018). In addition to these harms, data breaches can also undermine trust in the institutions and organizations that collect and use personal/organisation information. One of the main challenges with data security in office environment is the constant evolving nature of cyber threats. Cyber threats refer to any malicious activities that aim to compromise or damage digital systems, networks, or devices. The challenge arises because hackers and other malicious actors are constantly developing new methods and strategies for gaining unauthorized access to personal/organisation data, making it extremely difficult for companies to keep up with them (Ponemon, 2019). Additionally, the pace at which cyber threats evolve is incredibly fast. Concisely, a security measure that is hack-proof today may not be effective against cyber threats tomorrow.

Another challenge that is associated with protecting privacy in an office environment is that companies and organizations collect and store vast amount of personal data. The problem arises because the more personal/organisation information an organization collects, the more it must be protected (Norton, 2021). Managing such vast amount of data is a daunting task, especially with the wide range of ways in which this data can be stored and shared across various platforms, devices, and systems. Additionally, some companies rely on third-party vendors and service providers to store personal/organisation data. In some instances, these service providers may be located in countries with different data protection laws, which may make it difficult for organizations to guarantee the security of their consumer's data across different jurisdictions.

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Overcoming Challenges Associated with Data Privacy and Security Protection

Various potential solutions that can be explored include regular updates to measure security, effective data encryption, multi-factor authentication, and ultimately privacy by design. Organizations and companies need to constantly update their security measures to keep pace with the ever evolving cyber threats. Some of the ways this can be achieved are through implementing the latest security software and also regularly patching the existing vulnerabilities (Lovan, 2021). The use of data encryption can be a crucial measure to protect personal/organisation data in the office environment especially organizations with vast data storage. This is a form of guarantee that their consumer's data is safe both during transit and rest (Deora, 2021). Multi-factor authentication also, is an essential feature that is very effective in protecting against unauthorized access to personal data. With extra layers of verification and identification, such as passwords, fingerprints, and scans, companies can guarantee the safety of their client's personal/organisation data (Deora, 2021). Ultimately, Privacy by Design is a framework that seeks to integrate privacy and data security considerations into the design and development of digital systems and products. Privacy by Design emphasizes the need to prioritize data security and privacy from the outset of the design process rather than treating these issues as an afterthought. Another example is the concept of "Privacy Engineering." Privacy Engineering is a framework that seeks to apply engineering principles and methodologies to the designs and development of privacy enhancements technologies and systems (Taylor, 2017). Privacy engineering emphasizes the need for rigorous testing and evaluation of data security measures, as well as the need for ongoing monitoring and updates to ensure that these measures remain effective over time.

Conclusion

In conclusion, the concept of ethics, data privacy and security in the office environment has become increasingly important as our lives become more interconnected with information technology. The ethical and data privacy factors considered in this essay provide a framework for ensuring that organisaiton information is handled in a way that is ethical, responsible, and respectful of individuals' rights and privacy. Data privacy and security is essential for individuals to maintain control over their information and to protect privacy rights. Without privacy, individuals may be at risk of identity theft, harassment, or other forms of harm. Individuals must be fully informed about how their personal/organisation information is being used and be able to give or refuse consent to use it. Consent must be freely given and informed without coercion or manipulation.

Organizations must be transparent about how they collect, use, and disclose personal/organisation information. Transparency helps to build trust between organizations and individuals and ensures that individuals have the information they need to make informed decisions about their personal/organisation information. Organizations must take steps to protect personal/organisation information from unauthorized access, use, or disclosure. Data protection measures may include encryption, access controls, and secure storage and disposal of personal/organisation information. Organizations must take steps to ensure the security of personal/organisation information, which includes protection against cyber-attacks, data breaches, and other security threats. Data security measures may include network security, anti-malware software, and regular security audits. In summary, the five ethical considerations related to privacy in computer ethics provide a comprehensive framework for promoting the responsible and ethical use of personal/organisation information in the digital space. By prioritizing privacy, consent, transparency, data protection, and data security, organizations can help to ensure that personal/organisation information is treated in a way that is consistent with ethical principles and respect for individuals' rights and privacy. As our lives become increasingly digitized, it is essential that we continue to prioritize privacy and security of data to protect personal/organisation information in office environment.

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IMPLICATION OF DIGITAL ECONOMY ON CURRICULUM OF OFFICE TECHNOLOGY AND MANAGEMENT (OTM) PROGRAMME IN TERTIARY INSTITUTIONS IN NIGERIA

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Abstract
This paper examines the implications of digital economy on the curriculum of Office Technology and Management (OTM) programme in tertiary institutions in Nigeria. The global transition from traditional industrial to digitally driven economies has significantly transformed the nature of work and organizational operations, creating the need for curricular redesign in educational institutions to meet modern labour market requirements and global technological demands. The implication is that OTM curricula must be restructured to emphasize digital literacy including the use of modern office suites, email management, cloud-based collaboration, and digital content creation. The paper reviewed relevant literature on the concept of digital economy, overview of OTM curriculum, need for digital skills in OTM curriculum, key digital skills for integration, updating OTM course contents to meet digital economy demands, challenges of digital economy on the curriculum of OTM, strategies for digitalizing the OTM curriculum and implications of the digital economy on the curriculum of OTM. In conclusion, to remain relevant and competitive, OTM programmes must undergo comprehensive curricular reforms that are both proactive and responsive to global digital needs to bridge the gap between educational outcomes and industry expectations. It was suggested among others that there is urgent need for a comprehensive curriculum review and digital realignment to ensure current digital workplace demands.

Keywords: Digital Economy, Curriculum, Office Technology and Management, Implications.

Introduction

The global transition from traditional industrial economies to digitally driven economies has significantly transformed the nature of work, education, communication, and organizational operations. The digital economy is an economic system that is primarily driven by digital technologies such as the internet, artificial intelligence, cloud computing, e-commerce, big data, mobile applications, and information and communication technology (ICT). These technologies have altered business practices and increased the demand for digitally skilled manpower capable of functioning effectively in technology-driven workplaces. The emergence of the digital economy has therefore created the need for educational institutions to redesign their curricular to meet modern labour market requirements and global technological trends. (Adedeji, 2021).

Digital economy refers to an economy that is based on digital communication networks (the internet, intranets, and private value-added networks), computers, software, and other related information technologies using digital platforms. The curriculum of office technology and management prepares students for roles such as office managers, executive assistants, administrative officers, records managers, ICT support staff, and digital office administrators in both public and private sectors. The implication is that OTM curricula must be restructured to emphasize digital literacy, including the use of modern office suites, email management, cloud-based collaboration, and digital content creation.

In Nigeria, the increasing adoption of ICT and digital innovations in both public and private sectors has changed the operations of offices and administrative systems. Many organizations now rely on electronic communication, virtual meetings, digital record management systems, cloud storage, online collaboration tools, and automated office technologies for effective service delivery. According to National Board for Technical Education (2004) office professionals are expected to possess competencies in digital communication, information management, database applications, data analysis, cybersecurity awareness, and the use of modern office technologies. The relevance of digital skills has become more pronounced as organizations continue to embrace digital transformation and electronic business operations.

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Office Technology and Management (OTM) is a professional and vocational programme offered in tertiary institutions to prepare students for careers in office administration, secretarial studies, information management, and related administrative occupations. The programme is designed to equip students with practical and managerial skills required for efficient office operations. Traditionally, OTM programmes emphasized shorthand, typewriting, filing, office practice, and administrative procedures. However, the realities of the digital economy have transformed office functions beyond manual and conventional operations to technological-based systems requiring digital competence and innovation skills. (Oyedele and Fadara 2018).

Despite the growing importance of digital technologies, many tertiary institutions in Nigeria still operate OTM curricular that inadequately reflect current digital workplace realities. Studies have observed that the teaching and learning of Office Technology and Management in Nigerian tertiary institutions face challenges such as inadequate ICT facilities, poor internet connectivity, epileptic power supply, insufficient funding, outdated instructional materials, and inadequate exposure of students to modern office technologies (Okoro, Ejeka & Ebenezer, 2020). Obunadike and Okoli (2020) observed prevalent gaps to include: limited coverage of digital communication and collaboration tools, inadequate training on cyber security data privacy, absence of modules on cloud computing and remote work, minimal exposure to data management, analytics, and business intelligence tools, among others.

These limitations have contributed to a mismatch between the competencies possessed by graduates and the digital skills demanded by employers in contemporary organizations and raise concerns about the employability and competitiveness of OTM graduates in the global labour market.

The National Board for Technical Education (NBTE 2004) and other educational stakeholders have continuously emphasized the need for curriculum review in vocational and business education programmes to align with technological developments and societal needs. Nonetheless, the pace of curriculum innovation in many Nigeria tertiary institutions remains relatively slow compared to the rapid evolution of digital technologies in workplaces. Oyedele and Fadare (2018). Consequently, there is a growing need to examine the implications of the digital economy on the curriculum of Office Technology and Management programmes in tertiary institutions in Nigeria. This paper therefore review relevant literature to help identify areas where curriculum reforms are required to ensure that graduates acquire relevant digital competencies needed for productivity, employability, and sustainable participation in the modern digital workplace.

Concept of Digital Economy

The digital economy refers to an economy that is based on digital communication networks (the internet, intranets, and private value-added networks), computers, software, and other related information technologies. It involves the production, distribution, and consumption of goods and services using digital platforms. According to OECD (2020), the digital economy encompasses all economic activities that use digitized information and knowledge as key factors of production, modern information networks as a platform, and information and communication technology (ICT) to boost productivity and market reach.

Tapscott (2016), one of the early scholars in this area, defined the digital economy as "the age of networked intelligence, where economic activity is largely driven by digital networks, the internet, and e-commerce platforms. The digital economy refers to economic activities that result from billions of daily online connections, among people, businesses, devices, data and processes. It is driven by the use of digital technologies such as the internet, artificial intelligence (AI), cloud computing, big data, and mobile devices.

Bukht and Heeks (2018) asserted that digital economy comprises all economic processes that are enabled by digital technologies, including digital infrastructure, digital platforms, and digital services. In this context, digital literacy, data management, and technological adaptability have become key competencies in today's workforce. UNCTAD (2019) highlighted six (6) key components of digital economy to include: digital infrastructure (broadband networks, data centers, cloud computing, and telecommunications systems); digital platforms (like Amazon, Google, Facebook, and Alibaba serve as intermediaries between producers and consumers and provide marketplaces, search engines, payment

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gateways, and social networks); e-commerce and online Services (all forms of buying and selling of goods and services through digital platforms, which includes B2B, B2C, and C2C transactions); digital payments and crypto-currencies (Financial technologies - Fin Tech - such as mobile money, e-wallets, and block chain-based crypto-currencies facilitate digital transactions); digital skills and human capital (the ability of the workforce to use digital tools and systems is essential for productivity in the digital economy); and data and artificial intelligence (AI) (Big data analytics and AI play a crucial role in decisions-making, personalization, and efficiency improvements).

The six (6) characteristics of digital economy as highlighted by (World Bank 2021) are: global reach - digital technologies eliminate geographical boundaries and enable cross border trade; speed and efficiency - transactions and communications happen in real-time; network effects - the value of a product or service increases as more people use it (e.g., social media platforms); disintermediation - removes traditional intermediaries, enabling direct producer-to consumer interactions; data-driven - decisions, marketing and innovations are increasingly based on data analytics; and innovation-Intensive - new digital products and services are constantly emerging, driven by technology. All these also have implications on the curriculum of OTM and call for updating.

An Overview of Office Technology and Management (OTM) Curriculum

Office Technology and Management (OTM) is a multidisciplinary academic programme designed to equip students with the technological, administrative, managerial, and communication skills required to function efficiently in modern, ICT-driven office environments. The programme blends office administration, information technology, and business communication with a strong emphasis on professional ethics and workplace efficiency. The curriculum prepares students for roles such as office managers, executive assistants, administrative officers, records managers, ICT support staff, and digital office administrators in both public and private sectors.

The primary objectives of the OTM curriculum according to NBTE (2004) were to:

- Train students in modern office technologies and procedures.
- Equip students with digital skills for handling data, information systems, and communication tools.
- Foster managerial and interpersonal skills for administrative roles.
- Develop students' capacity for critical thinking, decision-making, and professionalism in workplace settings.
- Promote entrepreneurship, digital competence, and adaptability to changing technological trends.

The OTM structure of the curriculum spans through National Diploma (ND) and Higher National Diploma (HND) levels in Nigeria and is often offered as a Bachelor's degree (B.Sc or B.Tech.) in universities. It includes theoretical, practical and industrial training components. The core areas of study according to Olaniyi (2018) in office technology and management curriculum are presented in the table below:

Category	Sample Courses
Office Practice and Management	Office Practice, Office Administration, Executive Secretarial Duties, Records Management.
ICT and Digital Tools	Information and communication technology, word processing, spreadsheet applications, database management, web design.
Communication and Language	Business Communication, English Language, Report Writing, French for Business (Optional).
Management and Entrepreneurship	Principles of Management, Office Supervision, Entrepreneurship Development, Business Ethics
Accounting and Business	Business, Law, Office Accounting, Financial Management, Business Environment.
Practical Training	Industrial work experience scheme (SIWES), computer laboratory practice, project/thesis
Emerging Areas	E-Government, Digital Office Systems, Cyber security awareness, data analytics, virtual assistance.

Source: NBTE, 2004

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Key skills developed through the curriculum according to Olaniyi, (2018) are:

- **Technical Proficiency**: use of digital office tools (Microsoft Office Suite, email systems, scheduling software).
- **Information Management**: filing, archiving, records retention, database management.
- **Digital communication:** Email etiquette, virtual meeting platforms (Zoom, Teams), social media management.
- **Managerial Competence**: Leadership, supervision, time management, problem-solving.
- **Entrepreneurship and Innovation**: Starting and managing tech-driven business support services.

However, curriculum relevance in the digital age is very vital; with the rise of the digital economy, OTM programmes have increasingly integrated the following according UNESCO (2021): Cloud-based office applications, Remote work tools, Virtual administrative roles, Digital customer relationship management(CRM) systems, and Online collaboration platforms. This transformation aims to align graduates with 21st century work demands, especially in smart offices, digital governance, and tech startups.

Need for Digital Skills in Office Technology and Management Programme Curriculum

The global shift towards digital transformation has significantly impacted educational curricula across disciplines, especially in office technology and management (OTM). As the workplace evolves to embrace digital tools and practices, there is a growing need to align OTM programmes with digital skills that meet industry demands. This integration ensures that graduates are well-equipped for the modern office environment; characterized by digital communication, data analytics, cloud computing, cyber security, and remote collaboration tools.

The integration of digital skills into the OTM curriculum is no longer optional; it is essential for producing graduates who are relevant in the 21st century workplace. Institutions must strategically revise their curricula, invest in digital infrastructure, and foster partnerships that will empower both educators and learners. Only then can OTM graduates thrive in the ever-evolving digital office environment.

The rationale for integrating digital skills into OTM curricula according to Obunadike and Okoli, (2020) are:

Changing Office Dynamics: The modern office environment is increasingly automated and digitalized. Administrative and clerical roles now require familiarity with cloud storage, digital filing systems, and virtual meeting platforms.

Industry Demand: Employers seek graduates who can adapt to digital tools and processes. The World Economic Forum lists digital skills among the top ten (10) future job skills.

Global Competitiveness: Integrating digital literacy enables students to compete globally and work across different digital environments.

Bridging the Skills Gap: Many graduates face underemployment due to lack of digital competencies. Updating the OTIM curriculum helps close the gap.

Key Digital Skills for Integration

Digital skills include basic ICT skills, information literacy, communication tools usage, digital collaboration, cyber security awareness, data management, and advanced digital competencies like programming, automation, and data analysis.

According to the European Commission (2019), digital competence involves confident and critical use of information society technology (IST) for work, leisure, and communication. In the OTM context, these spans from proficiency in Microsoft Office Suite to more complex digital processes involving enterprise systems like ERP, CRM software, and cloud-based collaborative platforms like Microsoft Teams and Google Workspace.

The key digital skills for OTM Curriculum according to Adeboye, Afolabi and Akinyemi (2020) are:

Digital Communication and Collaboration Tools: Email etiquette, video conferencing, shared document editing (Zoom, Slack, Google Workspace).

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Data Management and Analytics: Use of spreadsheets, database tools (MS Acce, SQL), and data visualization (Tableau, Power BI).
Cybersecurity Awareness: Password protection, secure data handling phishing prevention.
Digital Project Management: Familiarity with tools like Trello, Asana, or Microsoft Project.
Cloud Computing: Usage of Google Drive, Dropbox, and other cloud storage solutions.
Artificial Intelligence and Automation Tools: Introduction to chatbots, scheduling tools, and RPA (Robotic Process Automation) applications.
Social Media Management: Basic of digital marketing content scheduling and analytics.

Updating Office Technology and Management Course Content to Meet Digital Economy Demands

The digital economy has fundamentally altered how businesses operate and how professionals work, particularly in the realm of office technology and management (OTM). According to the Organization for Economic Co-operation and Development (OECD 2020), the digital economy includes digital infrastructure, platforms, content, and applications that facilitate economic and social activity. To align the OTM curriculum with the demands of the digital economy, Omodan, and Okere (2021) recommended the following updates:

Integration of Digital Communication and Collaboration Tools: Courses should include practical training on platforms such as Microsoft Teams, Zoom, Slack and Google Meet and emphasis on digital etiquette, remote communication, and real-time document editing.
Cyber Security and Data Protection: New modules should cover digital ethics, cyber threats, password management, phishing prevention, and data backup systems and training on relevant data protection regulations like GDPR and Nigeria Data Protection Act (NDPA)
Cloud Computing and Document Management: Courses should introduce the use of One Drive, Dropbox, and Google Drive. Emphasis on cloud-based workflow, access control, and version history.
Business Intelligence and Data Analytics: Introduction to Microsoft Excel's advanced features (Pivot Tables, Power Query). Tableau, and Power BI for office reporting and teaching data collection, interpretation and visualization for management decisions.
Artificial Intelligence and Automation: Exposure to AI tools such as ChatGPT for drafting emails, reports and scheduling tasks. And use of Robotic process automation (RPA) tools to automate repetitive administrative tasks.
Digital Project Management Tools: Training in Trello, Asana, Monday.com, and Microsoft project to manage office tasks and team productivity.
E-Commerce and Digital Marketing Basics: Understanding online customer service, e-business tools, social media management, and CRM software.
Digital literacy and soft skills: Focus on critical thinking, adaptability, problem-solving, and lifelong learning in a digital context.

Challenges of Digital Economy on the Curriculum of Office Technology and Management (OTM) Programmes.

The digital economy –driven by technological innovation, internet connectivity, cloud computing, big data, and artificial intelligence – has transformed traditional business and administrative functions. For Office Technology and management (OTM) programmes, this transformation presents both opportunities and significant challenges. Expectations for office professionals evolve, placing increasing pressure on educational institutions to align curricular with these new demands. However, as Omodan and Okere (2021) noted, adapting OTM curricular to meet the requirements of the digital economy is complex and fraught with challenges that must be addressed for effective reform. The following are highlighted by Okoye et al (2022) as challenges affecting digitalizing the curriculum of OTM programmes:

Rapid Technological Advancement: Emerging technologies like artificial intelligence (AI), blockchain, robotic process automation (RP|A), and cloud-based enterprise systems evolve faster than curricular can adapt. Many institutions review their curricula only every 4 – 5 years, making the content outdated by the time of implementation. Educators often lack exposure to current technologies, creating a lag between industry practices and academic instruction. The curriculum becomes obsolete quickly, leaving graduates underprepared for the digital office environment.
Inadequate Infrastructure and ICT Facilities: Many tertiary institutions, particularly in developing countries like Nigeria, face insufficient ICT infrastructure, including unreliable electricity, internet

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connectivity, and access to modern computing devices. OTM programmes in Polytechnics and Colleges often lack access to updated software (e.g., Microsoft 365, ERP systems), making it difficult to teach current office tools. Computer-to-student rations remain low, hindering hands-on-training students do not get adequate exposure to the digital tools required in modern workplaces.

Lack of Qualified and Digitally Literate Instructors: Educators are at the core of curriculum delivery, but many OTM lecturers and instructors lack up-to-date digital competencies. Many OTM instructors are trained in analog systems and may resist or struggle to teach new digital tools. Opportunities for staff retraining and certification are limited, especially in public institutions. The gap between digital curriculum content and instructional capacity widens, leading to poor implementation.

Rigid Bureaucratic Curriculum Review Process: In many Nigerian and African tertiary institutions, the process of curriculum revision is centralized and bureaucratic, often involving regulatory bodies like the National Board for Technical Education (NBTE). Approval and implementation timelines can stretch for years, even when curriculum updates are urgent. This slow process limits the agility of OTM programmes to adapt to emerging digital trends. Institutions cannot respond swiftly to the evolving skills demanded by the digital economy.

Limited Industry-Academic Collaboration: Effective curriculum reform in the digital age requires strong partnerships between academia and industry. However, collaboration remains weak in most OTM departments. Employers and digital industry leaders are rarely consulted during curriculum development. Internship placements and exposure to live digital work environments are often insufficient. OTM graduates may acquire theoretical knowledge without understanding how to apply digital tools in real-world scenarios.

Digital Divide and Student Inequality: The digital economy has widened the gap between students with access to digital tools and those without. Many OTM students in rural or low-income background; cannot afford laptops or smart phones for online learning. They have limited digital literacy before entering tertiary institutions. Equity in digital education becomes a challenge, with some students left behind in acquiring necessary digital competencies.

Curriculum Content Still Focused on Traditional Skills: Despite the global shift to digital, many OTM curricula are yet to meet up with digital skills. These skills are rapidly being replaced with AI transcription tools, cloud-based document management, and voice recognition software. The curriculum is misaligned with workplace demands, resulting in low graduate employability.

Funding Constraints: Digital transformation requires significant financial investment in ICT tools and software licensing, instructor training and upgrading physical and virtual learning environments. However, many institutions lack sufficient funding or external grants to support these changes. Without adequate funding, updating and delivering a digital – friendly curriculum becomes unsustainable.

While the demand for digitally skilled office professionals grows, institutional limitations, infrastructural deficits, bureaucratic rigidity, and skills mismatches hinder meaningful curriculum reform. Addressing these challenges requires the joint efforts of stakeholders - educators, policymakers, industry experts, and funding agencies. Such collaborative and continuous efforts can help OTM programmes to produce graduates who are competitive, agile, and equipped for the demands of a digital workplace.

Strategies for digitalizing the OTM Curriculum

There is need for curriculum development strategies with the integration of digital skills in which all stake holders must be involved. Okoye, Uzoechina and Adeyemi (2022) outlined the following strategies:

- **Curriculum Review and Stakeholder Engagement:** Engage industry experts, alumni, professional associations (e.g National Association of Professional Secretaries of Nigeria (NAPSSON) and ICT experts and employers in revising the curriculum to reflect digital trends. .
- **Capacity Building for Lecturers:** Regular training and digital certification for OTM educators.
- **Blended Learning Approach:** Incorporate e-learning platforms such as Moodle, Canvas, and Coursera for hybrid instruction to expose students to real-world applications.
- **Partnership with Tech Companies**: Collaborate with tech firms for guest lectures, internships, and certification programmes (e.g. Microsoft, Google, or local tech hubs for software access and certification programmes.

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- **Capstone Projects and Internships:** Encourage practical exposure to digital tools through student projects and digital internships.
- **Upgrade infrastructure**: Invest in modern computer labs, reliable internet, and licensed software tools.

The digital economy demands a rethinking of how Office Technology and Management is taught and learned. Curriculum updates must focus on equipping students with current digital competencies that go beyond the traditional office tasks. This transformation requires commitment from stakeholders at all levels- educators, policymakers, employers, and students- to ensure that the workforce is prepared to meet contemporary workplace challenges.

Implication of the Digital Economy on the Curriculum of Office Technology and Management (OTM) Programmes

The implications of the digital economy on OTM are significant as administrative professionals are now required to work with cloud-based collaboration tools, (e.g Google Workspace, Microsoft Teams); manage digital files and data security; communicate across multiple digital channels; operate enterprise systems like CRM and ERP platforms; and apply digital literacy in a dynamic business environment.

The digital economy – defined by the integration of digital technologies in economic activities – has redefined workplace competencies and transformed the skills expected of modern office professionals. As businesses shift from traditional operations to digital ecosystems, Office Technology and Management (OTM) programmes are under pressure to evolve accordingly. The digital economy emphasizes knowledge work, data-driven decision-making, automation, and real-time communication, all of which have critical implications for the structure, content, and delivery of OTM curricular in tertiary institutions. According to OECD (2020) the digital economy encompasses all economic activities resulting from the billions of online connections, among people, businesses, devices, data, and processes. It thrives on digital platforms, artificial intelligence, cloud computing, and big data analytics. This transformation influences how work is performed, managed, and communicated – especially within administrative and office-based roles.

Omodan and Okere (2021) outlined the key implication of the digital economy on OTM curriculum to be:

Shift from Manual to Digital Skills: The digital economy renders many traditional administrative competencies obsolete. Skills such as shorthand, manual filing, and analog typewriting have diminished in relevance. The implication is that OTM curricula must be restructured to emphasize digital literacy, including the use of modern office suites, email management, cloud-based collaboration, and digital content creation.

Demand for Technological Proficiency: Administrative roles now require proficiency in Microsoft 365 and Google Workspace, Enterprise Resource Planning (ERP) systems, Data entry and analysis software (e.g Power BI, Tableau), Virtual meting platforms (e.g., Zoom, Microsoft Teams). The implication is that OTM curriculum must include modules in ICT application, data management, and digital workflow automation tools to ensure graduates meet labour market expectations.

Emphasis on Soft and Transferable Digital Competencies: Digital transformation places importance on communication, adaptability, critical thinking, and problem-solving – skills required to navigate fast-changing digital tools. The implication is that curriculum designers must integrate training in digital communication, team collaboration tools, online etiquette, and remote work culture.

Continuous Curriculum Review and Industry Alignment: The digital economy is dynamic, with constant innovation. A stagnant curriculum quickly becomes irrelevant. The implication: OTM programmes must establish flexible and responsive curriculum review mechanisms that incorporate input from tech industry stakeholders and alumni working in digital roles.

Need for Experiential Learning and Internships in Digital Environments: Students need exposure to real-world digital office settings to reinforce theoretical knowledge. Institutions must integrate industry-based internships, capstone projects, and simulation-based learning using digital platforms to help students practice and apply digital skills.

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Redefinition of Pedagogy and Instructional Delivery: Traditional lecture-based teaching methods are increasingly ineffective in the digital age. The implication is that the digital economy calls for blended learning, online teaching platforms, digital assessment tools, and the use of Learning Management Systems (LMS) such as Moodle, Blackboard, and Google Classroom.

Globalization and Remote Work Readiness: With remote work becoming mainstream, office workers are expected to collaborate across time zones and digital platforms. Implication; OTM curricular should train students in cross-cultural digital communication, remote team coordination, and digital time management to prepare them for global workspace.

Increased Relevance of Cybersecurity and Data Privacy: Office Professionals now handle sensitive digital data, exposing them to potential cyber threats. Curricular must incorporate cybersecurity awareness, data protection regulations, and ethical use of information technologies as part of administrative training.

Credentialing and Digital Certification Opportunities: Employers increasingly value industry recognized digital certifications such as Microsoft Office Specialist (MOS), Google Digital Garage Certification, CompTIA IT Fundamentals. The implication is that OTM departments should embed certification preparation into the curriculum to enhance graduate employability and industry relevance.

There is, however, the need for broader educational implications at the nstitutional, faculty or school development and curriculum globalization. Curricula must now focus on digital literacy, adaptive thinking, real-time communication, cybersecurity, and integration with industry practices. Failure to realign OTM education with digital economic realities will lead to a mismatch between graduate skills and workplace demands. Institutions must embrace curriculum innovation, continuous learning, and collaboration with the private sector to produce digitally competent office professional.

Conclusion

This paper examines the implications of digital economy on the curriculum of Office Technology and Management programme in tertiary institutions in Nigeria.. Literature reviewed show that the emergence and rapid expansion of the digital economy have significantly redefined the skill sets and competencies required in the modern office environment which has profound implications for the curriculum of Office Technology and Management (OTM) programmes, which must evolve beyond traditional clerical and administrative tasks to embrace digital fluency, technological adaptability, and innovation. The increasing use of cloud computing, artificial intelligence, data analytics, virtual collaboration tools, and cybersecurity protocols has created a demand for office professionals who are not only literate in digital tools but are also capable of leveraging technology for strategic business support. Structural limitations such as inadequate infrastructure, lack of industry academic partnerships, insufficient faculty or school training, and bureaucratic delays in curriculum review processes hinder the timely incorporation of digital competencies. To remain relevant and competitive, OTM programmes must undergo comprehensive curricular reforms that are both proactive and responsive to global digital trends. These reforms should aim to bridge the gap between educational outcomes and industry expectations by producing graduates who are digitally competent, globally aware, and professionally agile.

Recommendations

1. Institutions should periodically conduct holistic curriculum reviews, engaging industry stakeholders, ICT professionals, alumni, and educational technologists to ensure that the curriculum reflects current digital workplace demands and digital framework such as the European Commission's DigComp or the World Economic Forum's future skills blueprint.
2. OTM curriculum designers should incorporate relevant digital skills and certifications; these include core module in cloud-based collaboration tools (Google Workspace, Microsoft 365), data management and analytics (Excel, Power BI, Tableau). Cyber security awareness and digital ethics, customer relationship management (CRM) systems, AI tools and automation in office tasks. Embed preparation for industry-recognized certifications such as MOS, Google Digital Skills, and CompTIA IT fundamentals within the programme.
3. Institutions should invest in continuous professional development for lecturers to ensure they are proficient in delivering digital content and using modern educational technologies. Encourage Lecturers to attend digital pedagogy workshops, ICT boot camps, and online courses on emerging office technologies.

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4. Institutions should improve access to modern computer labs, internet connectivity, smart classrooms, and licensed software tools. Develop virtual learning environments using LMS platforms such as Moodle, Blackboard, or Canvas to support blended and online learning.
5. Institutions should strengthen industry-academic collaboration. Establish formal partnerships with tech companies, business organizations, and government agencies to co-develop course content, offer student internships and mentorships and facilitate regular curriculum updates based on market trends.
6. Regulating body such as (NUC, NBTE, NCCE) should emphasize on soft and adaptive skills, which include courses on digital communication, remote work readiness, virtual leadership, and collaborative problem-solving. Encourage experiential learning through projects, case studies, and virtual simulations that mirror digital office settings.
7. Government should ensure equity and accessibility. Address the digital divide by providing subsidized access to digital tools for students from disadvantaged backgrounds. Promote inclusive policies that ensure all students can participate meaningfully in the digital transformation of the curriculum.
8. Students to adopt a growth mindset toward digital learning by integrating self-paced online course (e.g., Coursera, Linkedln Learning) into academic activities. Cultivate a culture of lifelong learning and digital agility through student-led tech clubs and innovation challenges.

By implementing these suggestions, Office Technology and Management programme can transit from traditional, task-based instruction to a modern, skills-oriented curriculum that empowers students to succeed in the dynamic, technology-driven global economy.

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INFLUENCE OF DIGITAL COMPETENCE ON THE JOB EFFECTIVENESS OF ADMINISTRATIVE STAFF AT THE UNIVERSITY OF IBADAN

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Abstract
This study examined the relationship between digital competence and job effectiveness among administrative staff at the University of Ibadan. The study adopted a descriptive survey research design. The population comprised 292 administrative staff, from which a sample of 169 respondents was selected using proportionate stratified and simple random sampling techniques. Data were collected using a structured questionnaire, and the instrument demonstrated satisfactory internal consistency, with Cronbach's alpha coefficients of 0.884 for digital competence and 0.889 for job effectiveness. Data were analysed using descriptive statistics, Pearson Product-Moment Correlation, and simple linear regression. The findings revealed a very high level of digital competence among administrative staff, with an overall mean score of 3.72, while job effectiveness also recorded a very high level, with a weighted mean of 3.77. The study further revealed a very strong positive and statistically significant relationship between digital competence and job effectiveness ($r = .887$, $p < .001$). Regression analysis indicated that digital competence statistically accounted for 78.7% of the variance in job effectiveness ($R^2 = .787$). The study concludes that digital competence is an important factor associated with administrative staff effectiveness in a digitally oriented university environment. It recommends continuous professional development, particularly in digital communication, collaboration, and problem-solving, to sustain and strengthen administrative effectiveness.
Keywords: Influence, Digital Competences, Job Effectiveness, Administrative Staff

1.0 Introduction

In today's digitalised work environment, digital competence has become a critical determinant of employee effectiveness across both public and private organisations. Administrative staff, whose responsibilities traditionally centred on clerical and secretarial functions, are increasingly required to operate within technology-mediated workplaces characterised by electronic record systems, digital communication platforms, cloud-based collaboration tools, and automated workflow processes. As organisations continue to embrace digital transformation, the ability to confidently and effectively use digital technologies has become essential for maintaining productivity, accuracy, communication efficiency, and service delivery (Kim et al., 2024; European Commission, 2022).

In Nigeria's federal institutions, ongoing efforts to modernise administrative processes have accelerated the adoption of digital technologies. However, the extent to which administrative personnel possess the competencies required to utilise these technologies effectively remains uneven. While investments in information and communication technology (ICT) infrastructure have increased, challenges related to inadequate digital training, limited professional development opportunities, and disparities in digital proficiency continue to constrain effective technology utilisation among workers (Kim et al., 2024). These challenges may adversely affect employees' ability to perform their duties efficiently and achieve expected organisational outcomes.

Job effectiveness refers to the degree to which employees successfully carry out assigned responsibilities and engage in productive work behaviours that contribute to the attainment of organisational goals. Contemporary performance literature conceptualises job effectiveness as a multidimensional construct encompassing task performance, adaptive performance, work quality, productivity, communication effectiveness, and the capacity to respond to changing workplace demands (Chong & Zainal, 2024; Tang et al., 2024). For administrative staff, job effectiveness is reflected in the accurate management of information and records, timely completion of administrative responsibilities, efficient coordination of office activities, effective communication, and the optimal utilisation of organisational resources. In increasingly digital work environments, the achievement of

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these performance outcomes is closely linked to employees' ability to utilise digital technologies effectively in the execution of their duties.

Consequently, digital competence has emerged as a critical capability for enhancing job effectiveness in contemporary organisations. Digital competence extends beyond basic technical skills and encompasses the knowledge, attitudes, and abilities required to use digital technologies critically, responsibly, and effectively in professional settings. The European Digital Competence Framework (DigComp) conceptualises digital competence across five key dimensions: information and data literacy, communication and collaboration, digital content creation, safety, and problem-solving (European Commission, 2022). These competencies are particularly relevant to administrative staff because they underpin routine workplace activities such as document preparation, data management, virtual communication, scheduling, records administration, and workflow coordination. As organisations increasingly rely on digital systems to support operations, employees with stronger digital competencies are better positioned to perform their roles effectively, adapt to technological changes, and contribute to organisational productivity.

The relationship between digital competence and job effectiveness can be further explained through Competency-Based Theory (CBT), which posits that employee performance is largely determined by the knowledge, skills, and abilities individuals possess and apply in their work roles.

Although emerging studies have reported positive associations between digital competence and employee performance, empirical evidence focusing specifically on administrative staff within Nigerian federal institutions remains limited. Most existing studies have examined digital skills in broader organisational contexts or among academic and teaching personnel, leaving insufficient understanding of how digital competence influences the effectiveness of administrative workers who play a pivotal role in institutional operations. This gap underscores the need for empirical investigation into the relationship between digital competence and job effectiveness among administrative staff in federal institutions in Nigeria.

Accordingly, this study adopts the DigComp Framework as a comprehensive model for assessing digital competence and employs Competency-Based Theory as the theoretical lens for explaining how digital competence influences job effectiveness. In line with the DigComp Framework, digital competence was operationalised through five key dimensions: information and data literacy, communication and collaboration, digital content creation, safety, and problem-solving.
Competency-Based Theory explains how knowledge, skills and attitudes can contribute to job effectiveness through three core dimensions: knowledge, skills, and attitude. By aligning these frameworks, the study provides a structured basis for examining how specific digital competence dimensions translate into measurable improvements in job effectiveness among administrative staff.

Statement of the Problem

The effectiveness of administrative staff in Nigerian universities increasingly depends on their ability to perform tasks in a rapidly digitalising work environment. At the University of Ibadan, administrative processes such as record management, communication, data processing, student services, and workflow coordination are now largely technology-driven. However, concerns about delays in service delivery, errors in data handling, slow adoption of digital platforms, and inconsistent administrative output raise questions about whether job effectiveness may be constrained by inadequate digital competence among the administrative staff.

Despite the university's investment in digital infrastructure, many administrative officers still struggle with efficiently using digital tools required for their roles. Challenges such as limited proficiency in software applications, poor information management skills, low adaptability to new technologies, and insufficient digital problem-solving abilities continue to affect productivity. These gaps raise concerns about whether the available digital skills among staff are sufficient to meet the demands of modern administrative tasks. Given that digital competence is essential for improving accuracy, timeliness, communication, and overall service efficiency, it becomes necessary to investigate the extent to which digital competence can enhance the job effectiveness of administrative staff at the University of Ibadan.

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This study therefore seeks to examine whether strengthening digital competence can serve as a solution to the persistent inefficiencies observed in administrative performance.

Objectives of the Study

The general objective of this study is to examine the influence of Digital Competence on the Job Effectiveness of administrative staff at the University of Ibadan, Ibadan, Oyo State. The sub-objectives are to:

1. assess the level of job effectiveness of the administrative staff in the University of Ibadan, Ibadan, Oyo State
2. assess the level of digital competencies of the administrative staff in the University of Ibadan, Ibadan, Oyo State
3. determine the relationship between digital competences and job effectiveness of administrative staff in the University of Ibadan, Ibadan, Oyo State

Research Questions

Following research questions guided the study:

1. What is the level of job effectiveness of the administrative staff in the University of Ibadan, Ibadan, Oyo State?
2. What is the level of digital competencies of the administrative staff in the University of Ibadan, Ibadan, Oyo State?
3. What is the relationship between digital competence and job effectiveness of administrative staff at the University of Ibadan, Ibadan, Oyo State?

Hypotheses

H_0: There is no significant relationship between digital competences and job effectiveness of administrative staff in the University of Ibadan, Ibadan, Oyo State.

2.0 Empirical Review

Several empirical studies have examined digital competence, digital skills, and their implications for employees' workplace performance and effectiveness. Adenekan and Jimoh (2024) examined the role of ICT training in bridging the digital competence gap among administrative staff of federal tertiary institutions in South-West Nigeria. The study adopted a survey research design and used a questionnaire for data collection. The population comprised senior Registry staff of federal tertiary institutions, from which a sample of 373 respondents was selected using a systematic multistage sampling technique. Three hypotheses were formulated and tested using regression analysis at the 0.05 level of significance. The findings revealed that ICT training significantly contributed to electronic information processing skills, virtual communication ability, and adaptive technology use among administrative staff. The study concluded that ICT training, particularly in domain-specific areas, is essential for equipping administrative staff with relevant and up-to-date digital competencies, thereby bridging the digital competence gap and enhancing their ability to adapt to new and emerging technologies. The authors recommended that the ICT training needs of administrative staff should be regularly assessed and that training programmes should be domain-specific and focused on key administrative functions requiring digital competence and mastery. The study is relevant to the present study because it provides empirical evidence on the importance of digital competence among administrative staff in tertiary institutions. However, while Adenekan and Jimoh focused on ICT training as a means of developing digital competence, the present study examines whether digital competence significantly predicts job effectiveness among administrative staff of the University of Ibadan, thereby extending the inquiry from competence development to workplace effectiveness.

Similarly, Van Laar et al. (2019) examined the determinants of 21st-century digital skills among working professionals in a large-scale study published in *Computers in Human Behavior*. The study investigated the level of digital skills among knowledge workers and the factors contributing to variations in their levels of digital competence. Six categories of digital skills were examined: information, communication, collaboration, critical thinking, creativity, and problem-solving. Potential determinants, including social support and training, were also examined. Data were obtained through a large-scale online survey involving 1,222 professionals working in knowledge-intensive creative industries. The findings revealed considerable variations in the levels of the different digital skills

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among the respondents. The study further established that different digital skills were explained by different sets of determinants, suggesting that the development of digital competence requires skill-specific rather than uniform approaches. The study concluded that understanding the determinants of individual digital skills is important for developing appropriate interventions for improving workers' digital capabilities. The study is relevant to the present research because it demonstrates empirically that digital competence is multidimensional and varies according to relevant workplace determinants. However, the study focused on the determinants of digital skills among professionals in knowledge-intensive creative industries rather than the workplace outcomes of digital competence. The present study therefore extends this line of inquiry by examining the relationship between digital competence and job effectiveness among administrative staff in a university setting.

In a related Nigerian study, Zion-Ngoka and Ekoh-Nweke (2024) examined the influence of digital skills gaps on the job performance of administrative workers in universities in Imo State. The study adopted a descriptive survey research design and drew a sample of 317 administrative workers from a population of 1,065 administrative workers in federal and state universities in Imo State using a multistage sampling procedure. Data were collected using a 50-item researcher-developed questionnaire titled Influence of Digital Skills Gap on Job Performance Questionnaire (IDSGJPQ). The instrument was structured on a four-point response scale, and its reliability was established using Pearson Product Moment Correlation, which yielded a reliability coefficient of 0.87. Of the 317 questionnaires administered, 304, representing 96%, were returned and used for analysis. Mean and standard deviation were used to answer the research questions, while the t-test statistic was employed to test the three null hypotheses at the 0.05 level of significance. The findings revealed that gaps in word-processing skills, information-processing skills, and communication skills significantly influenced the job performance of administrative workers in federal and state universities. The authors recommended regular seminars and workshops to improve administrative workers' digital skills, particularly in the identified areas. The study is particularly relevant to the present research because it provides empirical evidence from Nigerian universities that digital skills are associated with the job performance of administrative workers. Nevertheless, the study focused on specific digital skills gaps and job performance and was conducted across federal and state universities in Imo State. In contrast, the present study focuses on digital competence as a broader construct and examines its predictive relationship with job effectiveness among administrative staff of the University of Ibadan, Oyo State.

Taken together, the reviewed empirical studies establish that digital competence is an important workplace resource, that it is multidimensional, and that it is influenced by training and other contextual factors. The studies also suggest that deficiencies in digital skills may affect employees' capacity to perform effectively. However, important gaps remain. Van Laar et al. (2019) focused primarily on the determinants and dimensions of digital skills among knowledge workers outside the Nigerian university context, while Adenekan and Jimoh (2024) concentrated on ICT training as a mechanism for developing digital competence. Although Zion-Ngoka and Ekoh-Nweke (2024) directly examined digital skills and job performance among university administrative workers in Nigeria, their study focused on specific digital skills gaps and employed t-test analysis rather than examining overall digital competence as a predictor of job effectiveness. Therefore, there is limited empirical evidence on the extent to which an overall measure of digital competence predicts the job effectiveness of administrative staff in a specific Nigerian university context. The present study addresses this gap by examining the predictive relationship between digital competence and job effectiveness among administrative staff of the University of Ibadan, Oyo State, using simple linear regression.

3.0 Methodology

This study adopted the descriptive survey research design, which is most appropriate for exploring the influence of digital competencies on job effectiveness of the administrative staff in the University of Ibadan, Ibadan, Oyo State. The population of the study comprised 292 administrative staff. Using Taro Yamane's formula, 169 administrative staff members of the University of Ibadan were studied:

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Using; $n = \frac{N}{1 + N(e)^2}$

Where:

n = sample size

N = population size

e = level of significance

I = unity

$$\frac{292}{1 + 292\,(0.05)^2}$$

$$\frac{292}{1+292(0.0025)}$$

$$\frac{292}{1+0.73}$$

$$\frac{292}{1.73}$$

= 169

Stratified sampling technique was used to allocate proportionately to each cadre using the proportionate allocation formula (PAF):

$$n_i = \left(\frac{N_i}{N}\right) \times n$$

N: Total population size.
N_i : Size of the i-th stratum in the population.
n: Total desired sample size.
n_i : Sample size allocated to the i-th stratum

Table 1: Stratified Sampling Table

S/N	Cadre	Population	Allotted Sample
1	Administrative/Registrar Cadre	87	50
2	Confidential Secretary Cadre	85	49
3	Executive Officer Cadre	120	70
	Total	**292**	**169**

Simple random sampling was used to ensure that each member of the population had an equal opportunity of being selected, thereby promoting fairness and reducing selection bias. The research instrument comprised two sections of ten items each, measuring digital competence and job effectiveness, respectively. The items were measured using a four-point Likert scale of Very High (4), High (3), Low (2), and Very Low (1). The reliability of the instrument was established using Cronbach's Alpha. The reliability coefficients obtained were 0.884 for the digital competence scale and 0.889 for the job effectiveness scale. These coefficients exceeded the commonly accepted minimum threshold of 0.70, indicating that the instrument had good internal consistency and was sufficiently reliable for the study.

Descriptive statistics, comprising frequency, percentage, mean, and standard deviation, were used to achieve Research Questions 1 and 2. Thereafter, simple linear regression analysis was employed to test the null hypothesis. Simple linear regression was considered appropriate because the study involved one independent variable, digital competence, and one dependent variable, job effectiveness. The

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analysis was used to determine whether digital competence significantly predicts job effectiveness and to establish the extent to which variations in digital competence explain variations in job effectiveness. The regression model was specified in equation (1).

$$JE = \beta 0 + \beta 1DC + \mu \qquad (1)$$

where (JE) represents Job Effectiveness, (DC) represents Digital Competence, (\$\beta 0\$) represents the regression constant or intercept, $\beta 1$ represents the regression coefficient of Digital Competence, and μ represents the error term.

The overall statistical significance of the regression model was assessed using the ANOVA F-test associated with the regression model. The ANOVA F-test in this context was not used as a separate one-way analysis of variance for comparing the means of three or more groups; rather, it was used to determine whether the regression model containing digital competence significantly explained variation in job effectiveness. The coefficient of determination ((R^2)) was used to establish the proportion of variance in job effectiveness explained by digital competence, while the regression coefficient ((\beta)), t-value, and associated probability value were used to determine the direction and statistical significance of the contribution of digital competence to job effectiveness. The null hypothesis was tested at the 0.05 level of significance and was rejected where the p-value was less than 0.05.

4.0 Results

4.1 Research Question 1: Level of Job Effectiveness of Administrative Staff at the University of Ibadan?

Table 2: Descriptive Statistics on the level of Job Effectiveness of Administrative Staff at the University of Ibadan

Job Effectiveness	VH	H	L	VL	Mean
Knowledge	(163)	(3)	(3)	(0)	3.95
To what extent are you able to complete your assigned duties effectively?	96.4%	1.8%	1.8%	0.00%	
To what extent does your knowledge of your job responsibilities enable you to organise and prioritise your work effectively?	(142) 84.0%	(21) 12.4%	(6) 3.6%	(0) 0.0%	3.80
To what extent are you able to apply the knowledge required to perform your assigned duties correctly?	(130) 78.7%	(30) 17.8%	(9) 5.3%	(0) 0%	3.72
Average mean					**3.82**
Skills	(123)	(31)	(15)	(0)	3.64
To what extent do you complete assigned tasks within the required time?	72.8%	18.3%	8.9%	0%	
To what extent do you produce accurate work with minimal errors?	(136) 80.5%	(27) 16.0%	(6) 3.6%	(0) 0.0%	3.77
To what extent are you able to minimise errors when performing your assigned duties?	(130) 76.9%	(30) 17.8%	(9) 5.3%	(0) 0%	3.72
To what extent are you able to manage your time effectively when performing your assigned duties?	(142) 84.0%	(21) 12.4%	(6) 3.6%	(0) 0.0%	3.80
To what extent are you able to perform your core job functions efficiently?	(169) 100.0%	(0) 0.0%	(0) 0.0%	(0) 0%	4.0
Average mean					**3.79**

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Attitude To what extent do you demonstrate willingness to complete assigned tasks even when faced with challenging work demands?	(126) 74.6%	(37) 21.9%	(6) 3.6%	(0) 0.00%	3.71
To what extent do you take responsibility for the quality and accuracy of your work?	(126) 74.6%	(34) 20.1%	(9) 5.3%	(0) 0.00%	3.69
Average mean					3.70
Weighted mean for Job Effectiveness of Administrative Staff					**3.77**

Source: Field Survey Result (2025); Decision rule 1.00 – 1.49=VL, 1.50 – 2.49=L, 2.50 – 3.49= H, 3.50 – 4.00=VH; Note: VL= Very Low, L= Low H=High, VH= Very High

Table 2 presents the descriptive statistics on the level of job effectiveness of administrative staff at the University of Ibadan. The findings indicate that the respondents demonstrated a very high level of job effectiveness, with an overall weighted mean of 3.77, which falls within the very high category based on the decision rule of 3.50–4.00. This indicates that the administrative staff generally demonstrated a very high level of effectiveness in carrying out their assigned duties.

The Knowledge dimension recorded the highest mean score of 3.82, indicating a very high level. The three items recorded mean scores of 3.95, 3.80, and 3.72, respectively. The highest-rated item was the respondents' ability to complete their assigned duties effectively (Mean = 3.95), followed by their knowledge of job responsibilities enabling them to organise and prioritise their work effectively (Mean = 3.80). The lowest-rated item was their ability to apply the knowledge required to perform their assigned duties correctly (Mean = 3.72). These findings indicate that the respondents demonstrated a very high level of job-related knowledge and its application in carrying out their administrative responsibilities.

The Skills dimension recorded a mean score of 3.79, also indicating a very high level. The item means ranged from 3.64 to 4.00. The highest-rated item was the ability to perform core job functions efficiently (Mean = 4.00), followed by the ability to manage time effectively when performing assigned duties (Mean = 3.80) and the ability to produce accurate work with minimal errors (Mean = 3.77). The lowest-rated item was the ability to complete assigned tasks within the required time (Mean = 3.64). Overall, the findings indicate that the respondents demonstrated a very high level of practical skills in performing their core administrative functions, managing time, and producing accurate work.

The Attitude dimension recorded the lowest dimension mean of 3.70, although it remained within the very high category. The two items recorded mean scores of 3.71 and 3.69, respectively. The findings indicate that the respondents demonstrated a very high willingness to complete assigned tasks even when faced with challenging work demands (Mean = 3.71) and a very high sense of responsibility for the quality and accuracy of their work (Mean = 3.69). Although Attitude recorded the lowest dimension mean, the result still reflects a very high level of positive work attitude among the respondents.

Table 3: Descriptive Statistics on the level of digital competences of Administrative Staff at the University of Ibadan

Digital Competencies	VH	H	L	VL	Mean
Information & Data Literacy How would you rate your knowledge of identifying and understanding reliable digital data and information sources?	(169) 100.0%	(0) 0.0%	(0) 0.0%	(0) 0%	4.0
How would you rate your ability to search for, filter, and critically evaluate digital information effectively?	(169) 100.0%	(0) 0.0%	(0) 0.0%	(0) 0%	4.0
Average Mean					**4.0**

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Communication & Collaboration	(0)	(86)	(80)	(3)	2.99
How would you rate your knowledge of digital communication platforms such as email, Microsoft Teams, or Zoom?	0.0%	50.9%	47.3%	1.8%	
How would you rate your willingness to use digital platforms to engage and collaborate with colleagues?	(130) 76.9%	(30) 17.8%	(9) 5.3%	(0) 0%	3.72
Average Mean					**3.36**
Digital Content Creation	(130)	(30)	(9)	(0)	3.72
How would you rate your understanding of document formats and digital content tools (e.g., Word, Excel, Canva)?	76.9%	17.8%	5.3%	0%	
How would you rate your ability to create or edit digital documents, spreadsheets, or presentations?	(133) 78.7%	(30) 17.8%	(6) 3.6%	(0) 0%	3.75
Average Mean					**3.74**
Safety	(139)	(27)	(3)	(0)	3.80
How would you rate your knowledge of digital safety practices, such as recognizing phishing attempts and creating strong passwords?	82.2%	16.0%	1.8%	0%	
How would you rate your attitude toward protecting sensitive data and practicing ethical digital behavior?	(130) 76.9%	(30) 17.8%	(9) 5.3%	(0) 0%	3.72
Average Mean					**3.76**
Problem Solving	(130)	(30)	(9)	(0)	3.72
How would you rate your ability to troubleshoot basic digital issues or seek technical help when needed?	76.9%	17.8%	5.3%	0%	
How would you rate your initiative to solve digital problems or explore new ways to improve digital workflows?	(126) 74.6%	(37) 21.9%	(6) 3.6%	(0) 0.00%	3.71
Average Mean					**3.72**
Mean for Digital Competences of Administrative Staff					**3.72**

Source: Field Survey Result (2025); Decision rule 1.00 – 1.49=VL, 1.50 – 2.49=L, 2.50 – 3.49= H, 3.50 – 4.00=VH; Note: VL= Very Low, L= Low H=High, VH= Very High

Table 3 presents the descriptive statistics on the level of digital competencies of administrative staff at the University of Ibadan. The findings indicate that the respondents generally demonstrated a very high level of digital competence, with an overall mean score of 3.72, which falls within the very high category based on the decision rule of 3.50–4.00. The results show that the respondents possessed substantial competence across the five digital competency domains assessed: Information and Data Literacy, Communication and Collaboration, Digital Content Creation, Safety, and Problem Solving.

Information and Data Literacy recorded the highest domain mean of 4.00, indicating a very high level of competence. Both items under this domain recorded a mean score of 4.00, with all 169 respondents rating themselves very high in their knowledge of identifying and understanding reliable digital data and information sources and in their ability to search for, filter and critically evaluate digital information. This result indicates a particularly strong level of competence in handling and evaluating digital information among the administrative staff.

Communication and Collaboration recorded a domain mean of 3.36, which falls within the high category. The first item, relating to respondents' knowledge of digital communication platforms such as email, Microsoft Teams and Zoom, recorded a mean score of 2.99, while the second item, concerning willingness to use digital platforms to engage and collaborate with colleagues, recorded a

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mean score of 3.72. The results therefore suggest that although the respondents demonstrated a high level of willingness to use digital platforms for collaboration, their self-rated knowledge of specific digital communication and collaboration platforms was comparatively lower. Consequently, Communication and Collaboration constituted the lowest-rated digital competency domain in the table.

Digital Content Creation recorded a mean score of 3.74, indicating a very high level of competence. The two items recorded mean scores of 3.72 and 3.75, respectively. This indicates that the respondents possessed a very high level of understanding of document formats and digital content tools such as Word, Excel and Canva, as well as a very high ability to create and edit digital documents, spreadsheets and presentations.

Safety recorded a mean score of 3.76, also indicating a very high level of competence. The respondents recorded a mean score of 3.80 on knowledge of digital safety practices, including recognising phishing attempts and creating strong passwords, while their attitude towards protecting sensitive data and practising ethical digital behaviour recorded a mean of 3.72. These findings indicate that the respondents demonstrated strong awareness of digital safety and responsible digital behaviour.

Problem Solving recorded a mean score of 3.72, indicating a very high level of competence. The respondents recorded mean scores of 3.72 for their ability to troubleshoot basic digital problems or seek technical assistance when necessary and 3.71 for their initiative to solve digital problems or explore new ways of improving digital workflows. This suggests that the administrative staff demonstrated a very high capacity to address routine digital challenges and seek improvements in digital work processes.

4.2 Hypothesis Testing

H_0: There is no significant relationship between Digital Competences and Job Effectiveness of Administrative staff in the University of Ibadan, Ibadan, Oyo State.

Table 4: Correlations

		Digital Competencies	Job Effectiveness
Digital Competencies	Pearson Correlation	1	.887**
	Sig. (2-tailed)		.000
	N	169	169
Job Effectiveness	Pearson Correlation	.887**	1
	Sig. (2-tailed)	.000	
	N	169	169

. Correlation is significant at the 0.01 level (2-tailed).
The Pearson correlation coefficient of r = .887 indicates a very strong positive relationship between digital competence and job effectiveness. The relationship was statistically significant, p < .001

Table 5: Regression Tables
Table 5[a]

Model summary for regression analysis on the H_0 that there is no significant relationship between Digital Competences and Job Effectiveness of Administrative staff in the University of Ibadan, Ibadan, Oyo State

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.887[a]	.787	.786	.16146

a. Predictors: (Constant), Digital Competencies

The model summary (see Table X) indicates that digital competencies are a strong predictor of job effectiveness among administrative staff at the University of Ibadan. The correlation coefficient, *R* = .887, suggests a very strong positive relationship between digital competencies and job effectiveness.

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The coefficient of determination, R^2 = .787, reveals that approximately 78.7% of the variance in job effectiveness is explained by digital competencies. The adjusted R^2 value of .786 confirms the robustness of the model after accounting for the number of predictors. Furthermore, the standard error of the estimate (SE = 0.161) indicates a relatively small average distance between observed and predicted values, supporting the accuracy of the model's predictions.

Table 5[b]

ANOVA F-test for the overall significance of the simple linear regression on the H_0 that there is no significant relationship between Digital Competences and Job Effectiveness of Administrative staff in the University of Ibadan, Ibadan, Oyo State

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	16.098	1	16.098	617.474	.000[b]
	Residual	4.354	167	.026		
	Total	20.452	168			

a. Dependent Variable: Job Effectiveness
b. b. Predictors: (Constant), Digital Competencies

The ANOVA results (see Table 5[b]) demonstrate that the regression model significantly predicts job effectiveness, $F(1, 167) = 617.47$, $p < .001$. The regression sums of squares (SS = 16.10) compared to the residual sum of squares (SS = 4.35) suggests that the majority of the variation in job effectiveness is accounted for by digital competencies. This finding confirms the statistical significance of the overall regression model.

Table 5[c]: Coefficients for regression analysis on the H_0 that there is no significant relationship between Digital Competences and Job Effectiveness of Administrative staff in the University of Ibadan, Ibadan, Oyo State

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	.376	.138		2.737	.007
	Digital Competencies	.929	.037	.887	24.849	.000

a. Dependent Variable: Job Effectiveness

The regression coefficients in the table above reveal that digital competencies significantly and positively influence job effectiveness, $B = 0.929$, $SE = 0.037$, $\beta = .887$, $t(167) = 24.85$, $p < .001$. A one-unit increase in digital competence is associated with an estimated 0.929-unit increase in job effectiveness. The constant term was significant, $B = 0.38$, $SE = 0.14$, $t(167) = 2.74$, $p = .007$, representing the expected level of job effectiveness when digital competencies are zero. These results highlight the critical role of digital competencies in enhancing the job effectiveness of administrative staff.

Discussion of Findings

The findings revealed that administrative staff at the University of Ibadan possess a very high level of digital competence, particularly in information and data literacy, digital safety, and problem-solving, while communication and collaboration competencies were comparatively lower. This finding is consistent with Adenekan and Jimoh (2024), who found that targeted ICT training improved digital competence among administrative personnel in federal tertiary institutions. It also agrees with Zion Ngoka and Ekoh-Nweke (2024), who reported that digital skills are important to the efficiency, accuracy, and responsiveness of administrative workers in Nigerian universities. The agreement may be attributed to the increasing digitalisation of administrative processes, which has exposed staff to digital tools for information management, records processing, communication, and routine administrative operations. However, the comparatively lower level of communication and collaboration suggests that proficiency in basic digital operations may not necessarily translate into advanced

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competence in collaborative technologies and virtual work platforms. The implication is that while administrative staff possess strong foundational digital capabilities, universities should provide more targeted training in digital communication, collaboration platforms, virtual teamwork, and other interactive technologies.

Secondly, the study revealed that administrative staff at the University of Ibadan demonstrated a very high level of job effectiveness across the Knowledge, Skills, and Attitude dimensions, with an overall weighted mean of 3.77. This finding agrees with the evidence of Adenekan and Jimoh (2024), who reported improved capacity among administrative personnel to perform digitally mediated tasks following targeted ICT training. It also corresponds with Zion Ngoka and Ekoh-Nweke (2024), who identified digital skills as important to the efficiency and responsiveness of administrative workers in Nigerian universities. The agreement may be explained by the increasing integration of digital technologies into administrative activities, including information handling, documentation, communication, scheduling, and other routine office functions. The implication is that maintaining high levels of job effectiveness requires continued investment in employees' knowledge, practical skills, and positive work attitudes, particularly as administrative responsibilities become increasingly technology-driven.

Furthermore, the study established a very strong positive and statistically significant relationship between digital competence and job effectiveness among administrative staff at the University of Ibadan ($r = .887$, $p < .001$). This finding agrees with Ochoa Pacheco and Coello-Montecel (2023), who, in a study of 357 professionals, found a positive relationship between digital competencies and job performance, with psychological empowerment also playing a role in this relationship. Similarly, Ingsih, Astuti, and Riyanto (2024) found that digital competence positively contributed to employee performance among 262 civil servants in Central Java, Indonesia. The finding is also consistent with Lyu and Luo (2024), who reported that digital literacy was positively related to job performance among 586 university teachers from three universities in China.

The agreement between the findings of this study and the previous studies may be attributed to the increasing integration of digital technologies into contemporary workplaces, particularly in higher education and public-sector organisations. As administrative activities increasingly depend on digital platforms for information processing, documentation, communication, service delivery, and task execution, employees with stronger digital competencies are better positioned to perform their responsibilities effectively. The implication is that digital competence should be regarded as an important workplace capability, and universities should continue to strengthen staff digital skills through relevant training, practical exposure, and opportunities to apply digital technologies in administrative work.

The regression analysis further showed that digital competence statistically accounted for 78.7% of the variance in job effectiveness ($R^2 = .787$). This substantial explanatory contribution reinforces the importance of digital competence in understanding variations in job effectiveness among the administrative staff studied. It is also broadly consistent with Ochoa Pacheco and Coello-Montecel (2023), Ingsih et al. (2024), and Lyu and Luo (2024), whose findings demonstrate positive associations between digital competencies or digital literacy and employee or job performance across professional, public-sector, and university settings.

The high explanatory power observed in this study may be associated with the increasing dependence of university administrative work on digital technologies for records and information management, communication, scheduling, documentation, and other routine administrative processes. However, the regression result is interpreted as a statistical predictive relationship rather than evidence of direct causation, given the descriptive survey design and reliance on self-reported measures. The implication is that strengthening digital competence may be an important organisational strategy for supporting administrative effectiveness, while future studies using longitudinal designs or objective measures of job performance could provide stronger evidence regarding the nature and direction of this relationship.

From a theoretical perspective, the findings provide empirical support for the Digital Competence Framework (DigComp), which posits that competencies in information and data literacy,

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communication and collaboration, digital content creation, safety, and problem-solving are essential for effective participation and performance in digital environments. The high levels of competence observed among administrative staff, coupled with their strong association with job effectiveness, reinforce the relevance of DigComp as a useful framework for understanding and assessing workplace digital capabilities.

The findings provide empirical support for the propositions of Competency-Based Theory, which argues that employees' knowledge, skills, and abilities are key determinants of workplace performance. The strong predictive influence of digital competence on job effectiveness demonstrates that digital capabilities constitute an important organisational competency that enables employees to achieve superior performance outcomes. This suggests that institutions seeking to improve administrative effectiveness should prioritise continuous digital skills development, as investments in employee competencies are likely to translate into improved organisational performance.

In summary, the findings indicate that digital competence has evolved from being a desirable attribute to becoming a fundamental requirement for administrative effectiveness in contemporary higher education institutions. Consequently, universities that invest in strengthening the digital competencies of their administrative workforce are likely to achieve greater operational efficiency, improved service delivery, and enhanced institutional performance.

5.0 Conclusion

This study examined the relationship between digital competence and job effectiveness among administrative staff at the University of Ibadan. The findings revealed very high levels of digital competence (mean = 3.72) and job effectiveness (weighted mean = 3.77). Information and data literacy recorded the highest level of digital competence, while communication and collaboration recorded the lowest, although it remained at a high level. The study further established a very strong positive and statistically significant relationship between digital competence and job effectiveness ($r = .887$, $p < .001$), with digital competence statistically accounting for 78.7% of the variance in job effectiveness ($R^2 = .787$). This indicates that digital competence is an important factor associated with administrative staff effectiveness, without implying a direct causal relationship. The findings underscore the need for continuous development of staff digital capabilities, particularly in digital communication, collaboration, and problem-solving. However, the study was limited to a single institution and relied on self-reported data, which restricts generalisability and causal interpretation. Future studies should consider multiple institutions and longitudinal, mixed-method, or objective performance measures to provide broader evidence on digital competence and job effectiveness,

5.1 Recommendations

In line with the findings of this study, the following are recommended:

1. The University of Ibadan should institutionalise a structured performance audit system for administrative staff using clearly defined key performance indicators (KPIs) such as turnaround time for administrative tasks, error rates in documentation, responsiveness to correspondence, and efficiency in records management. These evaluations should be conducted bi-annually by departmental heads to guide targeted capacity development.
2. Management should implement continuous, practice-based digital competence training tailored to administrative functions. Such training should prioritise the use of institutional digital platforms (e.g., e-record systems, virtual communication tools, and data management software), alongside cybersecurity awareness and collaborative technologies, with periodic assessments to measure skill acquisition and application.
3. Digital competence should be formally embedded into staff appraisal and promotion frameworks by incorporating measurable indicators such as proficiency in institutional software, effective use of digital communication tools, and compliance with digital workflows. This will ensure that digital capability becomes a core criterion for career progression and sustained job effectiveness.

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OFFICE AUTOMATION AND WORKFLOW EFFICIENCY IN PUBLIC ORGANISATIONS: A CONCEPTUAL REVIEW

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Abstract
This study reviews the concept of office automation and workflow efficiency using a qualitative approach based on secondary data. Drawing on existing empirical studies and institutional reports, the paper analyses how automation technologies influence task execution, coordination, and decision-making in organisations. The study presents a conceptual review designed to improve digital workflows within organizational operations by integrating principles from socio-technical systems theory. The paper examines the concept of office automation, concept of workflow, types of office automation systems, office automation in organizations, workflow in organisations and office automation and workflow efficiency. Review showed that office automation improves workflow efficiency by reducing manual tasks, enhancing speed, and minimizing errors. However, its effectiveness depends on factors such as employee skills, organisational support, and infrastructure. The study concludes that successful automation requires proper integration of technology with human and organisational systems. The study therefore suggests continuous staff training, process redesign, and regular evaluation to ensure optimal outcomes.

Keywords: Office Automation; Workflow Efficiency; Digital Transformation; Organisational Efficiency; Process Automation.

1.0 Introduction

In recent times, companies have realized the need for continuous improvement of their operations in order to achieve their own goals and the need to develop technology that will bring about these required goals. In the modern era of digital transformation, public sector organizations are increasingly embracing digital workflow automation as a strategy for enhancing operational efficiency and service delivery. Workflow automation involves the use of technology to streamline, manage, and execute tasks with minimal human intervention. In tertiary institutions, especially public universities, this can translate into faster administrative processes, improved staff coordination, and reduced bureaucratic delays. Digital workflow systems are now central to academic administration, finance, human resources, and communication across institutional departments (Komba & Mlozi, 2022). Despite the widespread global integration of automation tools, many public tertiary institutions in Nigeria continue to grapple with inefficiencies in administrative processes. Manual handling of data and documents, lack of digital infrastructure, and resistance to technological change remain significant barriers. The gap between technology availability and actual usage has been linked to low digital literacy among staff, poor change management strategies, and limited infrastructural support from management (Adeleke & Olamide, 2021). As a result, staff productivity suffers due to repetitive tasks, communication lags, and workflow redundancies.

A critical factor influencing the success of digital workflow automation is staff digital literacy. The ability of employees to effectively use digital platforms determines the extent to which these systems can positively impact productivity. Staff members with adequate digital competencies are more likely to adopt automation tools, navigate systems efficiently, and contribute to a tech-driven institutional culture (Okonkwo & Oduguwa, 2023). Conversely, a lack of skills can create digital fatigue, resistance, and underutilization of automation tools. Another important dimension is change conscientiousness adaptability, the readiness and willingness of staff to embrace new systems and workflows. Studies have shown that digital transformation efforts fail not just due to technical limitations, but because of human factors such as fear of change, poor communication, and lack of motivation (Onwudiwe & Uche, 2022). In public institutions where change is often met with resistance, effective strategies to improve adaptability are crucial to achieving meaningful productivity gains.

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Office automation refers to utilizing personal computers such as word processors and electronic intercom mail, plus other technologies, to upgrade workers' productivity and efficiency. It is the technique of making a processor system automatic in the office (Atakpa, 2012). Sholagbade (2012) opined that technology has certainly changed the ways many office tasks are being performed. Technology has simplified many routine secretarial tasks, thereby making secretaries assume new responsibilities in the office setting. It is the use of self-regulating machines to execute office tasks formerly done manually or through semi-mechanical means. It has changed the secretarial duties from the manual method to a purely mechanized process.

Since the primary business of the modern office is to collect, record, sort, analyze, store, and distribute information, office automation integrates all available hardware, software procedures, and human resources so that office information is not only processed accurately, speedily, and comprehensively but also made available when, where, and in the manner required (Harvey (2016). Today, computers, as well as other technological aids, play very important roles in the effective discharge of office managers' performance. Information is required for a business to function effectively, highlight the performance of the different units and direct attention to areas requiring review. Most information required for management purposes is either available in a form that can be readily used or exists in the form of raw data. According to Ejeka (2017), the automated office functions effectively and efficiently, with little or no stress at all, reduce the drudgery, which often comes with doing repetitive tasks such as typing memoranda, filing, and copying.

In the contemporary organisational environment, the increasing volume of information, administrative tasks, and coordination requirements has made efficient workflow management a critical concern for organisations. Office automation technologies, such as electronic document management systems, automated communication platforms, and workflow management software, are widely promoted as solutions for improving administrative efficiency and organisational productivity. Ugwu, et al (2018) observed that digital transformation initiatives ranging from cloud migration and platform modernization to artificial intelligence (AI) adoption and enterprise automation have significantly increased the complexity of information technology operations. As organizations expand their digital footprints, IT environments now encompass heterogeneous infrastructures, distributed architectures, multi-cloud ecosystems, and diverse toolchains (Taleb et al., 2017; Salomoni et al., 2017). This heightened complexity intensifies the need for streamlined, intelligent, and resilient digital workflows that can support highvelocity operational demands while ensuring reliability, scalability, and continuous service delivery (Kousalya et al., 2017; Song et al., 2017).

Digital technologies are expected to streamline office operations, reduce paperwork, and facilitate faster decision-making processes. However, despite the growing adoption of office automation tools, many organisations still experience delays, duplication of tasks, inefficient information flow, and bureaucratic bottlenecks in their administrative processes. Davenport (2013) and Turban, Pollard and Wood (2018) agreed that the introduction of technology does not automatically guarantee improvements in workflow efficiency, especially when organisational processes and human capabilities are not properly aligned with technological systems.

According to Heeks (2018), information technology initiatives frequently fail to achieve their intended outcomes in organisations where contextual, organisational, and human factors are not adequately considered. Consequently, the expected improvements in administrative efficiency and workflow coordination may not be realised. Given these challenges, there is a need to critically examine how office automation influences workflow efficiency in organisational offices and to identify the conditions under which automation can effectively enhance organisational performance which this paper addressed.

Despite advancements in digital technologies, many organizations continue to experience inefficiencies, fragmentation, and lack of orchestration within their IT workflows. Common problems include disconnected toolsets, siloed teams, inconsistent process definitions, high levels of manual effort, and limited end-to-end visibility (Arsanjani et al., 2015; Ravichandran et al., 2016). These challenges impede operational performance and hinder digital transformation efforts by making workflows reactive rather than anticipatory. Without coherent orchestration and integration mechanisms, IT

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operations become increasingly brittle, leading to operational risks, slow incident resolution, and duplication of efforts (Beyer et al., 2016; Omopariola, 2017). As a result, organizations struggle to achieve the agility, responsiveness, and reliability required to compete in rapidly evolving digital markets.

2.0 Conceptual Review

Concept of Office Automation

Office automation refers to the application of information and communication technologies (ICTs) to support, streamline, and improve routine office activities such as document preparation, communication, data processing, scheduling, and record management. It involves the use of computer-based systems to reduce manual effort, improve accuracy, and enhance the speed of administrative processes.

Laudon and Laudon (2020) define office automation as the use of information systems to increase the productivity of office workers by supporting activities such as word processing, electronic communication, and document management. The nature of office automation is both technical and organizational. Technically, it involves hardware, software, networks, and databases that enable the automation of clerical and administrative tasks. Organizationally, it reshapes how work is structured, coordinated, and controlled within offices. Office automation is therefore not merely about replacing paper with computers, but about redesigning work processes to improve efficiency and effectiveness (Stair & Reynolds, 2021). Office automation is a supportive system rather than a decision-making system. It enhances human performance by providing timely information, facilitating collaboration, and reducing routine workload. This human-technology interaction underscores the socio-technical nature of office automation in organisations.

Concept of Workflow

Workflow refers to the structured sequence of tasks, activities, and decision points through which work is carried out to achieve specific organizational objectives. It describes how tasks move from one stage to another, who performs them, and how information and resources are transferred across individuals or units. According to Van Der Aalst (2016), workflow represents the operational logic of business processes, capturing both the order of activities and the coordination mechanisms that link them.

From an organizational perspective, workflow embodies how work is actually executed rather than how it is formally prescribed. While formal organizational charts and standard operating procedures (SOPs) outline theoretical pathways, the empirical reality of a workflow is often messy and dynamic. Hammer and Champy (2009), argue that many organizations suffer systemic inefficiencies because their workflows evolve informally over time; this organic, unmanaged evolution results in fragmented processes, redundant steps, and unnecessary handoffs. Consequently, analyzing workflows provides a critical diagnostic lens for understanding the real tasks across departmental boundaries, exposing the gaps where institutional efficiency is lost.

Ugwu-Oju, et al (2018) When effectively designed and orchestrated, workflows enable faster decision-making, reduce operational burdens, enhance collaboration across technical teams, and improve the overall stability of IT services. Conversely, poorly defined or fragmented workflows introduce latency, increase error rates, and constrain the organization's ability to innovate (Mollajafari et al., 2016; Gardner et al., 2017). The growing reliance on automation, machine intelligence, and agile development practices further amplifies the strategic importance of harmonized workflows capable of adapting dynamically to business and technological shifts (Palmer, 2017; Hengl et al., 2017).

Types of Office Automation Systems

Office Automation Systems (OAS) are computer-based information systems designed to support, enhance, and automate routine office activities. These systems facilitate the creation, storage, processing, transmission, and retrieval of information within organisational offices. Unlike transaction

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processing systems that focus on core business operations, office automation systems primarily support administrative and knowledge work, including documentation, communication, scheduling, and coordination (Laudon & Laudon, 2020). Office automation systems emerged in response to the increasing volume and complexity of office work in modern organisations. As organisations expanded in size and scope, traditional manual office methods became inefficient and error-prone. Office automation systems therefore serve as productivity tools that reduce clerical workload, improve information flow, and support collaboration among employees (O'Brien & Marakas, 2019).

The primary objective of office automation is to improve the efficiency and effectiveness of office operations by automating routine tasks which helps organisations to reduce processing time, minimise errors, and lower operational costs. Office automation systems are designed to enhance productivity by allowing employees to focus on higher-value tasks rather than repetitive manual activities and to improve communication and coordination within organisations; it facilitates faster information flow, reduce delays, and support teamwork and also aims to improve information accessibility by ensuring that documents and records can be easily stored, retrieved, and shared when needed (O'Brien & Marakas, 2019).

Office automation systems can be classified based on the nature of the tasks they support and the functions they perform. The major types include:

i. **Document Processing Systems:** Document processing systems support the creation, editing, formatting, storage, and distribution of organisational documents such as word processing software, electronic document management systems, and digital filing systems. These systems replace traditional paper-based documentation with electronic documents, thereby reducing physical storage requirements and improving accessibility. According to Stair and Reynolds (2021), document processing systems enhance productivity by enabling quick editing, version control, and easy sharing of documents across departments.

ii. **Communication Systems:** Communication systems facilitate the exchange of information within and outside the organisation. They include email systems, instant messaging platforms, video conferencing tools, and collaborative communication software. These systems enable real-time and asynchronous communication among employees, managers, customers, and external partners. Turban et al. (2018) note that automated communication systems improve coordination and teamwork by enabling rapid information sharing and collaboration, especially in geographically dispersed organisations.

iii. **Data Storage and Retrieval Systems:** support the systematic storage, organisation, and retrieval of organisational data. These systems include databases, digital archives, and file storage platforms. They ensure that information is securely stored and can be accessed when needed. Automated data storage systems reduce the risk of data loss and improve information accuracy. Laudon and Laudon (2020) argue that efficient data storage and retrieval systems enhance decision-making by providing timely and reliable access to organisational information. In offices where large volumes of records are generated daily, such systems significantly improve administrative efficiency and continuity of operations.

iv. **Workflow Management Systems:** automate the sequence of tasks and activities involved in business processes. They define how tasks move from one individual or department to another and ensure that work is completed in a structured and timely manner. According to Dumas et al. (2018), workflow management systems enhance transparency and accountability by tracking task progress and responsibilities. By integrating workflow automation into office operations, organisations can achieve greater consistency, speed, and control over administrative processes.

v. **Enterprise Office Systems:** are integrated platforms that combine multiple office automation functions into a single system. Examples include enterprise resource planning (ERP) systems and enterprise content management (ECM) systems. These systems support organisation-wide coordination by integrating documents, communication, workflows, and data across departments. Porter and Heppelmann (2015) observe that enterprise systems enable organisations to achieve operational integration and strategic alignment. Although enterprise office systems offer significant benefits, they require substantial investment and organisational readiness to implement successfully.

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Office Automation in Organizations

Office automation performs several interrelated functions that collectively enhance efficiency, coordination, accuracy, and productivity in organisational offices. These functions support the transformation of traditional clerical activities into technology-enabled processes, enabling organisations to manage information, communication, and workflows more effectively.

i. **Document Processing and Records Management:** This function involves the creation, editing, storage, retrieval, and distribution of organisational documents using electronic systems. Automated document processing systems such as word processors, document management systems, and electronic filing platforms have largely replaced manual typing, filing cabinets, and paper-based archives. According to Duranti and Rogers (2019), automated records management systems enhance organisational efficiency by ensuring accuracy, consistency, and accessibility of documents.

ii. **Communication Management:** Automated communication tools such as email systems, instant messaging platforms, intranet portals, and video conferencing applications enable efficient internal and external communication. These technologies facilitate rapid information exchange, collaboration, and coordination among employees, departments, and external stakeholders. Dennis, Fuller, and Valacich (2008) argue that computer-mediated communication systems improve organisational communication by reducing delays and enhancing message clarity.

iii. **Scheduling and Time Management:** Office automation also performs an essential scheduling and time management function. Electronic calendars, meeting scheduling tools, and task management applications assist employees in planning activities, managing deadlines, and coordinating schedules. Automated reminders and alerts help prevent missed deadlines and scheduling conflicts. According to Aeon and Aguinis (2017), effective time management systems improve individual productivity and organisational performance.

iv. **Data Storage, Retrieval, and Information Management:** Data management is another critical function of office automation. Automated systems store large volumes of organisational data in structured databases, enabling fast retrieval, processing, and analysis. These systems support accurate record-keeping, reporting, and performance monitoring. Laudon and Laudon (2020) note that automated data management systems improve decision quality by providing timely and reliable information.

v. **Workflow Coordination and Process Integration:** Office automation performs a crucial workflow coordination function by integrating tasks and processes across departments. Workflow automation systems define task sequences, assign responsibilities, and monitor progress, ensuring that work moves smoothly from one stage to another. According to Weske (2019), workflow automation improves process transparency and accountability by making task status visible to all stakeholders.

Workflow in Organisations

Workflow in organisations refers to the sequence of activities through which tasks, information, and responsibilities move in order to achieve specific organisational objectives. The following are types of workflow in organisations:

i. **Structured Workflow:** Tasks are performed according to clearly defined rules, procedures, and sequences. In structured workflows, activities are repetitive, predictable, and highly standardised, with little or no variation in how tasks are executed. This is commonly found in administrative and operational processes where consistency, accuracy, and compliance are critical. According to van der Aalst and van Hee (2004), structured workflows are characterised by explicit process models that specify the order of activities, responsible actors, decision rules, and expected outcomes.

ii. **Semi-Structured Workflow:** This represents a category of organisational workflow that combines predefined procedures with elements of flexibility and human judgment. Unlike fully structured workflows, which follow rigid and repetitive sequences, semi-structured workflows contain both routine components that can be standardised and non-routine components that require discretion, interpretation, and decision-making by employees. According to Davenport and Short (1990), semi-structured workflows typically emerge in processes that involve problem-solving, evaluation, or approval activities, where formal rules guide action but do not fully determine outcomes.

iii. **Unstructured Workflow:** Tasks and activities are not governed by predefined rules, fixed sequences, or standard operating procedures. Instead, unstructured workflows are dynamic, flexible, and highly dependent on human judgment, creativity, and situational decision-making. This type of workflow is common in environments where tasks are complex, unpredictable, and knowledge-

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intensive. According to Mintzberg (2009), unstructured workflows dominate managerial, professional, and creative work because such activities involve ambiguity and evolving objectives.

iv. **Sequential Workflow:** Tasks are arranged in a fixed, linear order, such that each activity must be completed before the next one can begin. The output of one stage becomes the input for the subsequent stage, making the flow of work highly dependent on the successful completion of preceding tasks. This workflow type is commonly used in administrative and bureaucratic processes where control, verification, and accountability are essential. According to Reijers (2006), sequential workflows are characteristic of traditional organisational structures that emphasize hierarchy and procedural control.

v. **Parallel Workflow:** Multiple tasks or activities are executed simultaneously rather than in a linear sequence. Unlike sequential workflows, where each stage must be completed before the next, parallel workflows allow different components of a process to run concurrently. This approach is commonly adopted to reduce processing time, improve responsiveness, and optimise the use of organisational resources. According to Russell, van der Aalst, and ter Hofstede (2016), parallel workflows are particularly useful in processes where tasks are independent or only loosely dependent on one another.

vi. **Collaborative Workflow:** Tasks are performed jointly by two or more individuals or groups who interact continuously to achieve shared objectives. Collaborative workflows are characterised by interaction, coordination, mutual adjustment, and shared responsibility. This type of workflow is increasingly important in modern organisations where work is knowledge-intensive and requires diverse expertise.

Office Automation and Workflow Efficiency

Office automation and workflow efficiency are linked because automation directly alters how work is initiated, processed, monitored, and completed within organisations. Melville, Kraemer, and Gurbaxani (2004) argue that information technology creates value by embedding efficiency into organisational processes rather than merely improving individual task performance.

Office automation technologies reduce manual intervention, streamline administrative processes, and improve task coordination. Empirical evidence consistently demonstrates that office automation significantly enhances workflow efficiency across organisations. For instance, Afolayan et al. (2020) found that increased adoption of information and communication technologies (ICTs) significantly improved administrative efficiency in developing economies. Similarly, Ojo and Akinwale (2019) reported that digital systems enhance workflow speed and reduce operational errors, leading to improved organisational performance. These findings suggest that office automation contributes to efficiency by facilitating faster information processing and reducing bottlenecks in workflow systems. However, the degree of impact depends on the level of integration and effective utilisation of these technologies within organisational processes.

The following are the connection between office automation and work efficiency:

i. **Automation of Routine Tasks and Productivity:** One of the most significant contributions of office automation is the elimination of repetitive and routine tasks. Automation technologies enable organisations to handle high volumes of administrative work with minimal human intervention, thereby improving productivity. According to Autor (2015), automation allows employees to shift from routine-based tasks to more cognitive and value-added activities, thereby enhancing overall productivity. In a related study, Brynjolfsson and McAfee (2014) observed that digital technologies significantly improve task efficiency by reducing processing time and operational costs. This supports the argument that office automation not only increases speed but also enhances the quality of output by reducing human errors.

ii. **Office Automation and Time Management:** Time efficiency is a critical dimension of workflow performance, and office automation plays a central role in improving time management. Automated systems facilitate faster task execution, reduce delays, and enable real-time tracking of activities. According to Davenport (2018), organisations that implement automated workflow systems experience significant reductions in processing time and improved turnaround rates."According to Turban et al. (2018), automation reduces waiting time in decision-making processes by providing timely access to information, which leads to faster approvals and improved responsiveness in organisational operations."

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iii. **Automation and Coordination of Work Processes:** Effective coordination is essential for achieving workflow efficiency, and office automation enhances coordination by integrating organisational processes. Automated systems enable seamless communication and information sharing across departments, thereby reducing duplication of tasks and improving collaboration. According to Melville et al. (2004), information technology improves organisational performance by enhancing coordination and reducing inefficiencies in business processes. Similarly, Turban et al. (2018) noted that integrated information systems improve communication flow and ensure that tasks are executed in a coordinated manner.

iv. **Office Automation and Decision-Making Efficiency:** Decision-making efficiency is another critical outcome of office automation. Automated systems provide accurate, timely, and relevant information that supports managerial decision-making. According to Laudon and Laudon (2020), information systems enhance decision-making by providing real-time data and analytical tools that improve the quality of decisions. Empirical studies also show that organisations with advanced automation systems are better positioned to make informed decisions quickly,

v. **Human Factors and Automation Effectiveness:** Despite the benefits of office automation, its effectiveness is largely influenced by human factors such as employee skills, attitudes, and adaptability. Studies have shown that inadequate training and resistance to change can limit the effectiveness of automation systems. For example, Heeks (2018) emphasised that many ICT projects in developing countries fail due to a mismatch between technological systems and user capabilities.

vi. **Organisational Factors and Automation Success:** Organisational factors such as leadership, culture, and infrastructure play a crucial role in determining the success of office automation. Strong leadership support and a positive organisational culture can facilitate the adoption and effective use of automation systems. According to Adebayo and Adebayo (2017), organisations with supportive management and adequate infrastructure are more likely to achieve improved efficiency through automation. Similarly, Afolayan et al. (2020) highlighted the importance of institutional readiness in maximising the benefits of digital technologies.

However, several factors influence workflow efficiency in organisations such as poorly designed workflows with unnecessary steps and approvals which can reduce efficiency. Technology availability and integration also play a significant role, as fragmented systems often disrupt information flow (Recker, 2014). Human factors such as skills, motivation, and workload; organisational culture and leadership support, environmental factors, infrastructural constraints, among others, may also affect workflow efficiency, particularly in developing economies. These factors interact dynamically, meaning that improvements in one area may be undermined by weaknesses in another.

Theoretical Basis

This study is based on the socio-technical systems (STS) theory. According to Ugwu-Oju, Okeke and Nwankwo (2018), Socio-technical systems (STS) theory emphasizes the inseparable relationship between technological subsystems and the social structures through which work is coordinated. It posits that organizational effectiveness depends on jointly optimizing human factors, processes, and technological tools rather than treating these elements in isolation (Kant, 2016; Marsilio et al., 2017). In the context of digital workflows, STS provides a framework for analyzing how automation, communication tools, team structures, and technological interfaces shape operational performance, explains why workflow improvements must address, not only technical inefficiencies such as redundant tools or manual steps, but also cultural, skill related, and collaborative dynamics that influence how technologies are adopted and used. By grounding workflow design in STS principles, organizations can create systems that support improved job satisfaction, reduced cognitive load, and enhanced operational resilience.

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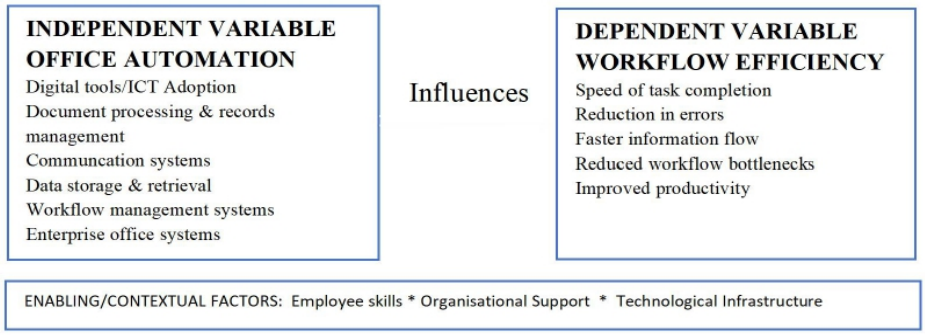


Figure 1: Conceptual Framework for Relationship between Office Automation and Workflow Efficiency

3.0 Methodology

This study relies on already published empirical studies and documented evidence and the STC conceptual model. Data for the study were obtained from peer-reviewed journal articles, textbooks, and institutional reports that provide quantitative findings on information and communication technology (ICT), office automation, and organisational efficiency. These sources contain measurable indicators such as task completion time, error reduction, process speed, and productivity levels, which are relevant to the study. The study focuses on two main variables: office automation as the independent variable and workflow efficiency as the dependent variable. Office automation is examined through indicators such as the use of digital tools and level of ICT adoption, while workflow efficiency is assessed using indicators such as speed of task completion, coordination, and reduction in errors, findings from different empirical studies were carefully examined, compared, and interpreted. The analysis is presented in a narrative form, with emphasis on identifying patterns, relationships, and consistent findings across studies. The use of secondary data is considered appropriate because it allows the study to draw from a wide range of existing quantitative evidence. However, the study is limited by its reliance on previously published data, which may vary in context and methodology.

4.0 Conclusion

In this conceptual article, the study was focused on office automation and workflow efficiency using a qualitative approach based on secondary data. Review showed that office automation improves workflow efficiency by reducing manual tasks, enhancing speed, and minimizing errors. Its effectiveness, however, depends on factors such as employee skills, organisational support, and infrastructure. The study concludes that successful automation requires proper integration of technology with human and organisational systems. Office automation contributes positively to workflow efficiency, but its success depends on the proper integration of technology with human and organisational elements.

Recommendations

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

i. Organisations should invest in employee training to improve digital skills and ensure effective use of office automation systems.
ii. Management should provide strong support for automation initiatives, including clear policies and commitment to digital transformation.
iii. Adequate technological infrastructure should be provided to support the implementation and operation of automation systems.
iv. Work processes should be reviewed and redesigned before automation is introduced to avoid transferring inefficiencies into digital systems.
v. Organisations should implement change management strategies to reduce resistance and encourage acceptance of new technologies among employees.

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Continuous evaluation of automation systems should be carried out to ensure they are achieving the desired improvements in workflow efficiency.

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ENTREPRENEURSHIP SKILLS ACQUISITION AND POVERTY ERADICATION THROUGH OFFICE TECHNOLOGY AND MANAGEMENT PROGRAMME

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Abstract
This study investigates entrepreneurship skills acquisition and poverty eradication through Office Technology and Management programme in Southwest Polytechnics, Nigeria, exploring the level of entrepreneurial skills available for Office Technology and Management (OTM) students in eradicating poverty. Being a descriptive research of the survey type, the population comprised 600 HND II students of OTM Departments from three polytechnics in Southwest, Federal Polytechnic, Ado Ekiti, Rufus Giwa Polytechnic, Owo, Ondo State and Federal Polytechnic, Ede, Osun State.. The sample size was 234, gotten from Krejcie and Morgan (1970) sample size table. Questionnaire was the research instrument, validated with a value of 0.78 for the reliability test, using crombach alpha. 234 questionnaires were administered, only 150 were returned which was the basis of the data analysis of this study. Data collected were analysed with descriptive statistics of percentage, mean and standard deviation. Findings revealed that students possess high level skills in webpage design, desktop publishing and Corel Draw expertise. The study concluded that OTM students in polytechnics possess a high level of entrepreneurial skills, for business idea generation, risk-taking, financial literacy, and business management. It was recommended that both state and federal governments should make adequate funding available for polytechnics programmes; educational agencies should update and upgrade polytechnic curriculum to accommodate emerging technologies and hi-tech skills to enhance more creativity and innovations to enhance entrepreneurial skills acquisition .

Keywords: Entrepreneurial Skill, Skill Acquisition, Poverty Eradication, Creativity, Innovation, Technology

1.0 Introduction

Nigeria, Africa's most populous country, grapples with deep-seated poverty despite its vast natural resources and potential for economic growth. According to recent data from the World Bank (World Bank, 2020), Nigeria has one of the highest poverty rates globally, with over 40% of its population living below the poverty line. This alarming statistic underscores the urgent need for effective poverty alleviation strategies tailored to the Nigerian context. Moreover, the youth demographic constitutes a significant portion of Nigeria's population, with approximately 64% of the population under the age of 25 (National Bureau of Statistics Nigeria, 2021). While this youthful population presents an opportunity for economic transformation and development, it also poses a challenge in terms of unemployment and underemployment. The Nigerian educational system, including polytechnics, plays a crucial role in shaping the skills and mindset of the youth as they transition into the workforce.

Within the Nigerian polytechnic system, students pursuing programs such as Office Technology and Management (OTM) are particularly relevant to the discourse on poverty eradication. OTM programs typically focus on equipping students with technical and administrative skills relevant to modern office environments. However, amidst the prevailing economic conditions, there is a growing recognition of the need to complement technical skills with entrepreneurial competencies to enhance graduates' employability and empower them to create their economic opportunities. Recent developments in the field of entrepreneurship education highlight its potential to address the dual challenges of youth unemployment and poverty.

Entrepreneurial skills have become increasingly crucial for Office Technology and Management (OTM) students in Nigerian polytechnics as they navigate a rapidly evolving job market and seek to create sustainable livelihoods. These skills encompass a range of competencies that enable individuals to identify opportunities, innovate, and create value in various contexts. For OTM students, the

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acquisition of entrepreneurial skills is particularly relevant given the changing nature of office environments and the growing emphasis on digital technologies in business operations (Ugwuanyi & Eze, 2021).The entrepreneurial skills required of OTM students can be broadly categorized into several key areas. This skill involves the ability to identify gaps in the market, recognize emerging trends, and conceptualize innovative solutions to address these opportunities. In the context of OTM, students with this skill can identify niche areas where their technical expertise in office management and technology can be leveraged to create new services or improve existing processes (Nwosu & Ohia, 2022).

The relevance of these entrepreneurial skills for OTM students cannot be overstated. In a job market characterized by uncertainty and rapid technological change, these skills provide OTM graduates with the versatility to adapt and thrive. They enable graduates to create their own opportunities rather than solely relying on traditional employment paths. These skills enhance employability, enabling graduates to secure better-paying jobs or advance more quickly in their careers. The ability to innovate, solve problems creatively, and adapt to new technologies makes OTM graduates with entrepreneurial skills valuable assets to employers, potentially leading to higher incomes and improved living standards (Okeke, Nwankwo, & Obi, 2021). Entrepreneurial skills empower OTM graduates to create their own businesses, either as full-time ventures or side hustles. This ability to generate independent income can provide a buffer against economic uncertainties and create pathways out of poverty. Small businesses started by OTM graduates can also contribute to job creation, further extending the impact on poverty eradication beyond the individual entrepreneur (Ugwuanyi & Eze, 2021).

Statement of the Problem

It has been observed that graduates of Office Technology and Management (OTM) from Nigerian polytechnics often face significant challenges in securing employment or establishing successful enterprises due to a mismatch between their acquired skills and the demands of the labor market. Despite the inclusion of entrepreneurship education in the OTM curriculum, it was observed that many graduates lack the practical entrepreneurial skills necessary to navigate the competitive business environment or create sustainable self-employment opportunities. This deficiency is evident in the high unemployment rates among OTM graduates and their struggle to apply theoretical knowledge to real-world business scenarios. This gap is particularly evident in areas such as digital marketing, e-commerce, and remote work technologies, which are increasingly crucial for entrepreneurial success. The failure to adequately prepare OTM students with cutting-edge entrepreneurial skills tailored to current market demands has limited their capacity to create value, innovate, and contribute meaningfully to economic growth. Therefore, this study seeks to examine the effects of Entrepreneurial Skills Acquisition on Poverty Eradication among OTM Students in Polytechnics in Southwest Nigeria.

Objectives of the Study

The objective of this study is to examine the effects of Entrepreneurial Skills Acquisition on Poverty Eradication among OTM Students in Polytechnics in Southwest Nigeria... Specifically, the study:

1. Identified the level of entrepreneurial skills available for Office Technology and Management (OTM) students in Polytechnics in Southwest Nigeria...
2. Investigated how entrepreneurship skills can eradicate poverty among OTM Students in Polytechnics in Southwest Nigeria...

Research Questions

1. What is the level of entrepreneurial skills available for Office Technology and Management (OTM) students in Polytechnics in Southwest Nigeria.
2. .In what ways can entrepreneurship skills eradicate poverty among OTM Students in Polytechnics in Southwest Nigeria?

Significance of the Study

This study on the impact of entrepreneurial skills acquisition on poverty eradication among OTM students in Nigerian polytechnics holds significant value for various stakeholders in the education and economic sectors. This research can serve as a foundation for further studies, potentially inspiring new research questions and methodologies. Future researchers may build upon this work to explore related topics, such as the long-term impact of entrepreneurial skills on career trajectories, the effectiveness of different pedagogical approaches in entrepreneurship education, or comparative studies across different academic disciplines. OTM is for building job creators, not job seekers. By gaining entrepreneurial

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skills, students become self-employed, fight poverty, and meet what the economy actually demands: results over certificate.

This study is focused on examining the effects of Entrepreneurial Skills Acquisition on Poverty Eradication through OTM programme, some polytechnics in Southwest were selected. The study will specifically target graduating students of the Federal Polytechnic, Ado Ekiti in Ekiti State, Federal Polytechnic, Ede, and Rufus Giwa Polytechnic, Owo.

2.0 Literature Review

Concept of Entrepreneurial Skills

The concept of entrepreneurial skills encompasses a diverse set of competencies that are essential for successful entrepreneurial endeavors. Elenurm and Heil (2020) defined entrepreneurial skills as a set of competencies that enable individuals to identify and exploit opportunities, innovate, and create value in uncertain and complex environments. This definition emphasizes the multifaceted nature of entrepreneurial skills, highlighting their role in navigating uncertainty and complexity. In a similar vein, Ndou, Secundo, Schiuma, and Passiante (2021) described entrepreneurial skills as the abilities and knowledge that enable individuals to create, manage, and grow successful ventures, encompassing both hard skills like financial management and soft skills such as creativity and adaptability. This definition underscores the diverse range of skills required for entrepreneurial success, acknowledging both technical and interpersonal competencies.

A more process-oriented definition is offered by Bacigalupo, Kampylis, Punie, and Van den Brande (2020), who characterized entrepreneurial skills as the capacity to act upon opportunities and ideas, and to transform them into value for others, whether financial, cultural, or social. This perspective highlights the transformative nature of entrepreneurial skills and their potential impact on various domains of society. Focusing on the cognitive aspects, Kremer and Winnen (2022) defined entrepreneurial skills as the mental models and cognitive abilities that allow individuals to recognize patterns, think creatively, and make decisions under conditions of uncertainty and limited information. This definition emphasizes the cognitive processes underlying entrepreneurial behavior and decision-making.

The importance of entrepreneurial skills has been increasingly recognized in recent years, particularly in the context of rapidly changing economic landscapes and technological advancements. Sousa, Carmo, Gonçalves, Cruz, and Martins (2021) argue that entrepreneurial skills are crucial for navigating the challenges of the Fourth Industrial Revolution, where traditional job markets are being disrupted and new opportunities are emerging at an unprecedented pace. Moreover, entrepreneurial skills are not solely the domain of business owners or startup founders. They are increasingly valued in corporate settings, non-profit organizations, and even in personal career management. Bacigalupo, Kampylis, Punie, and Van den Brande (2020) emphasize that entrepreneurial skills contribute to personal development, active citizenship, social inclusion, and employability.

The development of entrepreneurial skills is an ongoing process that combines formal education, experiential learning, and personal development. Kremer and Winnen (2022) emphasized the importance of practical experience and real-world problem-solving in cultivating entrepreneurial skills. They argued that entrepreneurship education should go beyond theoretical knowledge to provide students with opportunities to apply their skills in authentic contexts. Furthermore, the role of entrepreneurial skills in poverty eradication cannot be overstated. By equipping individuals with the ability to identify opportunities, create value, and manage resources effectively, entrepreneurial skills can empower people to generate sustainable livelihoods and contribute to economic development. This is particularly relevant in developing economies like Nigeria, where entrepreneurship can be a powerful tool for economic transformation and poverty reduction (Elenurm & Heil, 2020).

At the core of entrepreneurial skills lies the ability to recognize and evaluate opportunities. This involves possessing a keen sense of market awareness, coupled with the ability to identify unmet needs or gaps that can be addressed through innovative solutions (Kuratko, 2020). Successful entrepreneurs are adept at connecting seemingly disparate pieces of information, enabling them to perceive opportunities that others may overlook (Navis & Ozbek, 2022). For Office Technology and

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Management students, cultivating this opportunity recognition skill is crucial, as it enables them to leverage their knowledge and expertise to identify viable business ideas and potential areas for growth.

Another critical entrepreneurial skill is creativity and innovation. Entrepreneurs must possess the ability to think outside the box, challenge conventional wisdom, and generate novel solutions to problems (Kickul et al., 2020). This requires a willingness to take calculated risks and embrace uncertainty, as well as the ability to adapt and pivot in response to changing market conditions or customer needs (Shepherd &Patzelt, 2022). Office Technology and Management students can foster their creativity and innovation skills by engaging in problem-solving exercises, exploring new technologies, and embracing a mindset of continuous learning and improvement. Effective resource mobilization and management are also essential entrepreneurial skills. Entrepreneurs must be adept at acquiring and allocating resources, both tangible (e.g., financial, human, physical) and intangible (e.g., knowledge, networks, reputation), in an efficient and strategic manner (Mwatsika & Idemudia, 2021). This involves developing strong financial literacy, building and leveraging professional networks, and cultivating leadership and team management abilities (Gedeon, 2020). For Office Technology and Management students, developing these resource mobilization and management skills can enhance their ability to secure necessary resources, assemble talented teams, and effectively manage their entrepreneurial ventures.

Office Technology and Management

Office Technology and Management is an academic program that aims to equip students with the knowledge, skills, and competencies necessary to thrive in modern office environments and contribute to organizational success. This interdisciplinary field combines elements of business administration, communication, information technology, and office management, providing a comprehensive foundation for students to excel in various administrative and managerial roles (Alharthi et al., 2022). At its core, Office Technology and Management programs focus on developing proficiency in the effective utilization of various office technologies, including computer hardware and software, communication tools, and productivity applications (Agbamu et al., 2020). Students gain hands-on experience with industry-standard software and systems, enabling them to streamline office operations, enhance communication, and improve overall efficiency within organizations. Moreover, Office Technology and Management curricula emphasize the development of strong communication and interpersonal skills, which are essential for effective collaboration, customer service, and conflict resolution in office settings (Ogbu et al., 2021).

Students learn to communicate effectively across various channels, including written, verbal, and digital formats, and develop the ability to tailor their communication strategies to diverse audiences, fostering productive working relationships and facilitating seamless information exchange. Organizational skills and office management principles are also central to Office Technology and Management programs. Students acquire knowledge and practical skills related to office procedures, document management, record-keeping, scheduling, and event planning (Nwosu & Ekwulugo, 2022). They learn to prioritize tasks, manage time effectively, and coordinate various aspects of office operations, ensuring efficiency and productivity within the workplace. Office Technology and Management programs often incorporate elements of business administration and management, equipping students with foundational knowledge in areas such as accounting, finance, human resource management, and marketing (Eze et al., 2020). This broad business acumen empowers students to contribute to strategic decision-making processes, understand organizational dynamics, and effectively manage resources and personnel within office environments.

According to Oluwalola, Oyedeji, and Oyedele (2022) quality assurance in office technology and management is a crucial part of the quality control strategy and establishes the suitability of the facilities offered for quality control in the programme. The relevance and suitability of the programme to the requirements of contemporary offices is what defines the quality of an office technology and management programme. In order to produce a competent graduate, quality in office technology and management requires combining factors like general pedagogical knowledge, subject knowledge, pedagogical content knowledge, knowledge of students, knowledge of strategies to sustain learning, and knowledge of how to use technology.

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Poverty Eradication

Poverty eradication remains a central focus of development efforts in Nigeria and across the globe. It is a complex and multidimensional concept that goes beyond mere income deficiency to encompass various aspects of human well-being. Adelowokan, Maku, Babasanya, and Adesoye (2020) defined poverty eradication as a systematic and sustainable process of improving the living conditions of the poor through targeted interventions that address both income poverty and other dimensions of deprivation, ultimately leading to a state where all individuals have access to basic necessities and opportunities for personal growth. This definition highlights the multifaceted nature of poverty eradication, emphasizing both economic and non-economic aspects.

Offering a more rights-based perspective, Nwoke and Chukwuemeka (2021) described poverty eradication as the deliberate and concerted effort to ensure that all members of society can realize their fundamental human rights, including access to adequate food, shelter, education, healthcare, and economic opportunities, thereby enabling them to live with dignity and participate fully in societal development. This definition underscores the importance of viewing poverty eradication through the lens of human rights and social justice. Focusing on the policy aspect, Ogunniyi, Mavrotas, Olagunju, Fadare, and Adedoyin (2020) characterized poverty eradication as a comprehensive set of policy measures and strategic interventions aimed at addressing the root causes of poverty, enhancing human capital, promoting inclusive economic growth, and creating an enabling environment for sustainable livelihoods. This definition emphasizes the role of governance and policy-making in the poverty eradication process.

Entrepreneurial skills required of Office Technology and Management Students

Office Technology and Management programs equip students with a diverse set of skills that are highly valuable in the entrepreneurial landscape. One of the critical skills fostered in these programs is opportunity recognition, which involves the ability to identify and evaluate potential business opportunities (Mwatsika & Idemudia, 2021). Effective opportunity recognition requires a deep understanding of market trends, customer needs, and industry dynamics, coupled with the ability to connect seemingly disparate pieces of information to uncover viable business ideas. For Office Technology and Management students in Nigeria, this skill is particularly important, as it enables them to leverage their expertise in areas such as office management, communication, and technology to identify unmet needs and develop innovative solutions that can drive job creation and economic growth.

Another essential entrepreneurial skill honed in Office Technology and Management programs is problem-solving and critical thinking. Entrepreneurs often face complex challenges that require creative and innovative solutions (Shepherd & Patzelt, 2022). Office Technology and Management students are trained to approach problems systematically, analyze information from multiple perspectives, and develop practical solutions that address real-world challenges. This ability to think critically and solve problems is invaluable for entrepreneurial success, as it enables students to navigate the uncertainties and obstacles inherent in starting and growing a business venture.

Additionally, Office Technology and Management programs foster strong communication and interpersonal skills, which are crucial for effective entrepreneurship. Entrepreneurs must be adept at communicating their vision, value propositions, and ideas to diverse stakeholders, including customers, investors, and team members (Navis & Ozbek, 2022). Office Technology and Management students develop proficiency in various communication channels, such as written, verbal, and digital formats, as well as the ability to tailor their messaging to different audiences. These communication and interpersonal skills are essential for building strong professional networks, pitching business ideas, and leading teams effectively, all of which are critical components of successful entrepreneurial endeavors. Office Technology and Management programs emphasize the development of organizational and project management skills. Entrepreneurship often involves juggling multiple tasks, managing resources efficiently, and coordinating various aspects of a business venture (Kuratko, 2020). Office Technology and Management students acquire competencies in areas such as time management, task prioritization, resource allocation, and project planning, which are invaluable for effectively managing the day-to-day operations of an entrepreneurial venture and ensuring its long-term success.

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Office Technology and Management students are exposed to various challenges and real-world scenarios, which help them develop a growth mindset, embrace change, and cultivate the resilience necessary to persevere through adversity and adapt to evolving circumstances. In addition to these core entrepreneurial skills, Office Technology and Management programs often incorporate elements of innovation and creativity, which are essential for developing unique value propositions and differentiating products or services in the market. Students are encouraged to think outside the box, challenge conventional wisdom, and explore new technologies and approaches, fostering an entrepreneurial mindset that is critical for driving innovation and creating competitive advantages.

3.0 Methodology

The research explored the level of entrepreneurial skills available for Office Technology and Management (OTM) students in Polytechnics in Southwest Nigeria and how entrepreneurship skills can eradicate poverty through OTM programme. Being a descriptive research of the survey type, the population of this study comprised 600 HND II students of OTM Departments from three polytechnics in Southwest, Federal Polytechnic, Ado Ekiti, Rufus Giwa Polytechnic, Owo, Ondo State and Federal Polytechnic, Ede, Osun State.. The Polytechnics were randomly selected from the southwest Polytechnics. The sample size was made up 234, gotten from Krejcie and Morgan (1970) sample size table. Questionnaire was used to gather relevant data from the respondents; 234 questionnaires were administered, only 150 were returned which was the basis of the data analysis of this study. The instrument was validated with a value of 0.78 for the reliability value, using crombach alpha. Data collected were analysed with descriptive statistics of percentage, mean and standard deviation.

4.0 Results

Research Question 1: What is the level of entrepreneurial skills available for Office Technology and Management (OTM) students in Polytechnics in Southwest?

Table 1: The level of entrepreneurial skills available for Office Technology and Management (OTM) students in Polytechnics in Southwest.

S/N	ITEMS	RESPONSE						
		SA	A	D	SD	MEAN	SD	Remark
1	Computer and keyboarding skills lead to the creation of viable and sustainable ventures.	87 (58%)	43 (29%)	7 (5%)	13 (8%)	3.37	0.91	SA
2	Webpage skills help students optimise their creativity	94 (63%)	46 (31%)	4 (2%)	6 (4%)	3.53	0.76	SA
3	Desktop Publishing and Corel draw expertise allow students to reach wider markets and increase sales.	34 (23%)	99 (66%)	9 (6%)	8 (5%)	3.07	0.66	A
4	Modern facilities are provided in polytechnics to support entrepreneurship skill acquisition in OTM.	30 (20%)	90 (60%)	17 (11%)	13 (9%)	3.00	0.88	A
5	Digital tools for managing entrepreneurial ventures are incorporated into the OTM curriculum.	90 (60%)	35 (23%)	15 (10%)	10 (7%)	3.36	0.95	SA
6	The entrepreneurship curriculum in polytechnics encourages innovative thinking and creativity, OTM inclusive.	69 (46%)	60 (40%)	16 (11%)	5 (3%)	3.34	0.83	SA

Source: Field Survey, 2026.

Based on the above table, it was found that all the items scored high. This means that opportunity recognition skills enable OTM students to identify lucrative market gaps and that computer and keyboarding skills lead to the creation of viable and sustainable ventures. It was also found that webpage skills help students optimize their creativity. It was discovered that Desktop Publishing and

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Corel Draw expertise allow students to reach wider markets and increase sales. The findings also revealed that modern facilities are provided in polytechnics to support entrepreneurship skill acquisition in OTM. Digital tools for managing entrepreneurial ventures are incorporated into the OTM curriculum, while the entrepreneurship curriculum in polytechnics encourages innovative thinking and creativity. This means that OTM students possess entrepreneurial skills to a high extent.

Research Question Two: In what ways can entrepreneurship skills eradicate poverty among OTM Students in Polytechnics in Southwest?

Table 2: How entrepreneurship skills can eradicate poverty among OTM Students in Polytechnics in Southwest.

S/N	ITEMS	SA	A	D	SD	MEAN	SD	Remark
1	Entrepreneurship skills help create self-employment opportunities.	83 (55%)	41 (28%)	17 (11%)	9 (6%)	3.28	0.93	SA
2	Entrepreneurship education reduces the risk of unemployment among graduates.	30 (20%)	90 (60%)	17 (11%)	13 (9%)	3.00	0.88	A
3	Graduates with entrepreneurial skills are less dependent on salaried jobs.	90 (60%)	35 (23%)	15 (10%)	10 (7%)	3.36	0.95	SA
4	Small-scale businesses can alleviate financial difficulties among individuals.	100 (67%)	32 (21%)	8 (5%)	10 (7%)	3.48	0.92	SA

Source: Field Survey, 2026.

From the table above, all the items scored high. This means that entrepreneurship skills help OTM students to create self-employment opportunities and reduce the risk of unemployment among graduates and graduates with entrepreneurial skills are less dependent on salaried jobs, and small-scale businesses can alleviate financial difficulties. It was also found that entrepreneurial skills enable the identification of profitable business opportunities, while entrepreneurship education encourages income diversification after graduation. Also, that financial independence can be achieved through effective entrepreneurship training and that strong entrepreneurial skills enhance the ability to manage personal and business finances effectively. Additionally, entrepreneurship skills contribute to economic support within families, help reduce youth unemployment rates, and promote community development. Self-employment through entrepreneurship helps in reducing poverty levels, and entrepreneurship knowledge equips individuals to adapt to economic changes and crises. Early involvement in business ventures contributes to long-term financial stability, and entrepreneurship training promotes job creation for others in society. This means that OTM students can eradicate poverty through entrepreurship skills.

Discussion

Findings showed that opportunity recognition skills enable OTM students to identify lucrative market gaps; computer and keyboarding skills lead to the creation of viable and sustainable ventures; webpage skills help students optimize their creativity; Desktop Publishing and Corel Draw expertise allow students to reach wider markets and increase sales; modern facilities are provided to support entrepreneurship skill acquisition in OTM; digital tools for managing entrepreneurial ventures are incorporated into the OTM curriculum, while the entrepreneurship curriculum in polytechnics encourages innovative thinking and creativity. The outcomes agreed with findings of Agbamu et al (2020) who reported that Office Technology and Management programs helps students to develop proficiency in the effective application of various ICT hardware and software, communication tools for economic advantages; students gain hands-on experience which enables them to effectively streamline office operations, enhance communication, and improve overall efficiency within organizations.

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Furthermore, the results showed that entrepreneurship skills help create self-employment opportunities; reduce the risk of unemployment among graduates; graduates with entrepreneurial skills are less dependent on salaried jobs; small-scale businesses can alleviate financial difficulties; entrepreneurial skills enable the identification of profitable business opportunities; entrepreneurship education encourages income diversification after graduation; financial independence can be achieved through effective entrepreneurship training; strong entrepreneurial skills enhance the ability to manage personal and business finances effectively. Additionally, entrepreneurship skills contribute to economic support within families, help reduce youth unemployment rates, and promote community development. Self-employment through entrepreneurship helps in reducing poverty levels, and entrepreneurship knowledge equips individuals to adapt to economic changes and crises. Early involvement in business ventures contributes to long-term financial stability, and entrepreneurship training promotes job creation for others in society. This current finding corroborates the results of previous findings of Bacigalupo, Kampylis, Punie, and Van den Brande (2020) which emphasized that entrepreneurial skills contribute to personal development, active citizenship, social inclusion, and employability. Supporting the present finding, Elenurm & Heil (2020) found that entrepreneurial skills can empower people to generate sustainable livelihoods and contribute to economic development. This is particularly relevant in developing economies like Nigeria where encouraging entrepreneurship among citizens have taken the centre stage of governments activities in recent time.

5.0 Conclusion

The study found that OTM students in polytechnics possess a considerable level of entrepreneurial skills, including business idea generation, risk-taking, financial literacy, and business management. This indicates that entrepreneurship education in these institutions is equipping students with competencies necessary for business success. The results showed that the acquisition of entrepreneurial skills significantly contributes to poverty alleviation. Respondents agreed that self-employment opportunities created through entrepreneurship reduce reliance on salaried jobs and mitigate financial challenges.

Recommendations

Based on the findings of this study, the researchers has the following recommendations

1. Government at all levels both state and federal should make available adequate funding of polytechnics programmes in Nigeria.
2. The agencies concerned should update and upgrade polytechnic's curriculum to accommodate emerging technologies and hi-tech skills that would enhance more creativities and innovations that would enhance the acquisition of entrepreneurial skills.
3. The polytechnics' management should provide modern facilities and tools that would facilitate effective teaching and learning of entrepreneurial skills.

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INFLUENCE OF STRESS MANAGEMENT PRACTICES ON PSYCHOLOGICAL WELLBEING OF ADMINISTRATIVE STAFF IN ICT- BASED POLYTECHNICS IN OGUN STATE, NIGERIA

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Abstract
This study investigated the influence of stress management practices on the psychological wellbeing of administrative staff in ICT-Based Polytechnics in Ogun State, Nigeria. Administrative work in ICT-Based Polytechnic is characterized by high workloads and digital demands that may affect psychological wellbeing. A descriptive survey research design was adopted, and a sample of 194 administrative staff was selected from a population of 380 using Taro Yamane's formula and proportionate sampling. Three research questions and one hypothesis guided the study. Data were collected using a structured questionnaire and analyzed using descriptive statistics and linear regression. Findings revealed that the psychological wellbeing of administrative staff was high (weighted mean = 3.17). Stress management practices were also highly adopted (weighted mean = 3.11). However, many respondents still reported feelings of overwhelm, emotional exhaustion, and performance-related stress. Regression analysis showed a statistically significant positive influence of stress management practices on psychological wellbeing ($R = .369$, $R^2 = .136$, $p < .05$). Stress management practices accounted for 13.6% of the variance in psychological wellbeing, leading to the rejection of the null hypothesis. The study concludes that effective stress management is crucial in enhancing psychological wellbeing among administrative staff in ICT-Based Polytechnics. It recommends the implementation of comprehensive stress-management programmes, wellness initiatives, and supportive institutional policies to strengthen employee resilience and promote a healthier work environment.

Keywords: Stress Management Practices, Psychological Wellbeing, Administrative Staff, ICT-Based Polytechnics.

1.0 Introduction

The psychological wellbeing of employees, especially administrative staff, has gained increasing attention from scholars and managers as a key factor in organizational effectiveness and long-term institutional resilience. In technologically advanced environments like ICT-Based driven polytechnics, employees often face stressors from complex administrative tasks, rising workloads, and rapidly changing institutional demands. These challenges highlight the urgent need for systematic, evidence-based stress-management practices to maintain the mental and emotional health of the workforce. Therefore, this study examines how work-related stress-management strategies affect the psychological wellbeing of administrative staff in ICT- Based Polytechnics across Ogun State.

Wellbeing is widely conceptualized as a multifaceted construct reflecting individuals' capacity to function optimally across several domains of life. Beyond the mere experience of pleasure or short-term satisfaction, wellbeing incorporates meaningful engagement, social connectedness, financial security, physical vitality, and a broader sense of purpose. Gallup (2023) identifies five core dimensions: career, social, financial, physical, and community wellbeing that jointly shape individuals' overall life quality. As Ryff and Keyes (1995) observe, wellbeing is deeply intertwined with work-related behaviors such as engagement, persistence, and productivity. This insight explains why high-performing organizations increasingly treat employee wellbeing as a strategic priority, recognizing its role in sustaining motivation, operational continuity, and long-term competitiveness (Danna & Griffin, 1999).

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Employee wellbeing (EWB) has similarly evolved into a central construct within organizational behavior literature. Kor (2024) emphasizes that EWB reflects employees' optimal psychological, emotional, and physical functioning, while Bakker et al. (2011) expand this understanding to include economic stability as part of a holistic wellbeing profile. Psychological wellbeing, in particular, denotes a state of internal balance characterized by positive mental health, effective social functioning, and the ability to maintain satisfying interpersonal relationships (Robertson, 2025).

Stress remains an inescapable element of human experience, including within workplaces. Although chronic stress has damaging consequences, moderate stress may enhance motivation and performance under certain conditions (Maulik, 2017). The historical roots of stress can be traced to the primitive fight-or-flight response that early humans relied on to navigate threats (Obi, 2003). In contemporary contexts, work-related stress has become a global public health concern with significant implications for organizational performance and employee welfare (World Health Organization, 2020). Stress often emerges from excessive job demands, ambiguous roles, constrained autonomy, and insufficient institutional support conditions that can precipitate burnout, disengagement, and low morale (Karanika-Murray & Michaelides, 2020).

Modern work environments intensify these pressures due to technological disruptions, globalization, job redesign, and escalating performance expectations. Michie (2002) notes that stress has become a persistent occupational phenomenon, while Schwabe and Wolf (n.d.) argue that stress reactions have become integrated into daily organizational life. Additional stressors include work overload, emotional labor, inadequate rewards, poor social support, and role ambiguity, all of which have been linked to exhaustion, diminished productivity, and deteriorating employee wellbeing (Claar & Blumenthal, 2003).

Scholars differentiate stress conceptually as either a cause or an effect. From a causal lens, Lahey (n.d.) describes stress as any external challenge that overwhelms an individual's coping capacity. Similarly, Reber and Reber (2001) conceptualize stress as an external force that disturbs an individual's psychological equilibrium. From the effect perspective, stress represents the physiological and psychological reactions that arise when individuals perceive events as threatening or exceeding available resources (Santrock, 2007). These responses manifest in symptoms such as headaches, rapid heartbeat, irritability, indecision, aggression, and depressive emotions that can shape employees' productivity and overall job satisfaction (Amadi, 2024).

Stress-management approaches have received extensive empirical support for their effectiveness in mitigating workplace stress and enhancing wellbeing. Relaxation-based techniques, such as deep breathing and progressive muscle relaxation, heighten bodily awareness and enable early intervention before stress escalates (Kim et al., 2018). Mindfulness practices help employees cultivate present-moment awareness, restructuring cognitive responses toward calmness and emotional resilience (Bigham, 2014). Guided imagery has been shown to reduce anxiety and enhance psychological equilibrium through visualization of peaceful stimuli (Hong & Chan, 2001). In addition, integrative practices such as yoga and tai chi promote physiological relaxation through synchronized movement and breath control.

More broadly, organizational stress-management strategies include: mindfulness training, cognitive-behavioral interventions, physical wellbeing programs, and employee assistance services, which equip employees with adaptive coping tools. Richardson and Rothstein (2008) affirm that such interventions effectively reduce psychological strain, while cognitive-behavioral approaches facilitate the reframing of maladaptive thoughts and promote healthier coping behaviors within the workplace (Awa et al., 2010). Collectively, these strategies contribute to a more positive psychological climate and foster higher levels of employee wellbeing and performance.

Statement of the Problem

In recent years, administrative staff in ICT-Based Polytechnics in Ogun State have been increasingly confronted with complex and demanding work environments characterized by rapid technological changes, high administrative workloads, and constant performance pressures. These conditions have generated heightened levels of work-related stress among staff who serve as the backbone of institutional operations. Although stress in the workplace is not entirely avoidable, unmanaged or

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poorly managed stress has been linked to psychological fatigue, emotional exhaustion, low morale, declining productivity, and deteriorating interpersonal relationships among employees. Evidence from several Nigerian tertiary institutions indicates rising cases of anxiety, burnout, recurrent health complaints, and reduced job satisfaction among administrative personnel, suggesting that their psychological wellbeing may be under significant threat.

More importantly, it remains unclear whether the stress management practices currently in place (mindfulness training, relaxation techniques, counseling services, wellness programmes, and supportive supervisory structures) are adequate to ameliorate the psychological strain experienced by administrative workers or improve their overall psychological wellbeing. The persistent reports of stress-related symptoms among staff raise doubts about the functionality, accessibility, and utilization of these stress-management interventions.

Furthermore, the digitalized nature of ICT-Based Polytechnics introduces unique stressors such as continuous system upgrades, high-speed task demands, and constant connectivity, which may further compromise psychological wellbeing if not properly managed. Yet, empirical studies focus specifically on stress management practices as predictors of psychological wellbeing among administrative staff in ICT-Based institutions remain scarce in Ogun State.

Aim and Objectives of the Study

This study investigated the influence of stress management practices and work environment on psychological wellbeing of administrative staff in all ICT-Based Polytechnics, Ogun State, Nigeria.

The objectives of the study were to:

1. identify the level of psychological Wellbeing of administrative staff in the ICT-Based Polytechnics in Ogun State, Nigeria.
2. assess the adoption of stress management practices among administrative staff in the ICT-Based Polytechnics in Ogun State, Nigeria.

Research Questions

The following were the research questions for the study:

i. What is the level of psychological Wellbeing of administrative staff in ICT-Based Polytechnics, Ogun State?
ii. What are the stress management practices (primary appraisal, secondary appraisal, coping strategies, and outcome) adopted among administrative staff in ICT-Based Polytechnics, Ogun State?

Research Hypothesis

The following hypotheses were tested at 0.05 level of significance:

H_{01}: There was no significant influence of stress management practices on psychological wellbeing of administrative staff in Ogun State ICT-Based Polytechnics, Ogun State.

2.0 Literature Review

Theoretical Framework

Ryff's Psychological Wellbeing Theory (PWB), 1995

Carol D. Ryff's Psychological Wellbeing (PWB) Theory (1995) conceptualises psychological Wellbeing as optimal human functioning rather than merely the absence of mental illness. The theory identifies six dimensions of Wellbeing: autonomy, environmental mastery, personal growth, positive relations with others, purpose in life, and self-acceptance, which collectively reflect individuals' capacity to function effectively and lead meaningful lives. In workplace settings, these dimensions provide a comprehensive framework for understanding employees' psychological Wellbeing, particularly their ability to cope with work demands, maintain positive relationships, and achieve personal fulfilment. Therefore, Ryff's theory underpins the assessment of the dependent variable, psychological Wellbeing, in this study.

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Lazarus Transactional Model of Stress and Coping, 1984

The Transactional Model of Stress and Coping, developed by Richard S. Lazarus and Susan Folkman (1984), views stress as a dynamic interaction between individuals and their environment rather than a direct response to stressful events. The model posits that individuals first appraise a stressor by evaluating its significance (primary appraisal) and their ability to cope with it (secondary appraisal), after which they adopt either problem-focused or emotion-focused coping strategies. The effectiveness of these coping strategies influences psychological outcomes and overall wellbeing. In this study, the model provides the theoretical foundation for stress management practices by explaining how employees' appraisal of workplace stressors and their coping responses affect their psychological well-being.

Methodology

This study adopted a descriptive survey research design and a quantitative research approach. The descriptive survey design was appropriate because it enables the researcher to examine phenomena as they naturally occur without manipulation. The population for this study comprised 380 administrative staff in ICT-Based Polytechnics across Ogun State, Nigeria. The population included male and female administrative officers, secretaries, and executive officers working in the four ICT-Based Polytechnics under study. The population comprised all administrative staff in the selected ICT-based polytechnics in Ogun State. Specifically, the study covered four institutions: Gateway ICT Polytechnic, Saapade, with a population of 108 administrative staff; Abraham Adesanya Polytechnic, Ijebu-Igbo, with 102 administrative staff; G.S. Adegbenro Polytechnic, Itori, with 94 administrative staff; and the Institute of Technology, Igbesa, with 76 administrative staff.

To determine an appropriate sample size for the study, the researcher adopted Taro Yamane's (1967) sample size determination formula at a 95% confidence level and a 5% margin of error. Accordingly, the study chose a sample size of 194 respondents. The respondents consisted of Administrative Officers, Secretaries, and Executive Officers in the selected ICT-based polytechnics in Ogun State. Following the determination of the overall sample size, proportionate allocation was employed to distribute the sample across the four institutions in accordance with their respective population sizes. The proportionate allocation formula used was:

$n_i = \left(\frac{N_i}{N}\right) \times nN$: Total population size.

N_i : Size of the i-th stratum in the population.

n: Total desired sample size.

n_i : Sample size allocated to the i-th stratum

n_i =(N_i/N) × n with N= 380 n=194

Applying the formula, Gateway ICT Polytechnic, Saapade, with a population of 108 administrative staff, was allocated 55 respondents. Abraham Adesanya Polytechnic, Ijebu-Igbo, with a population of 102 staff, was allocated 52 respondents. G.S. Adegbenro Polytechnic, Itori, with 94 administrative staff, was allocated 48 respondents, while the Institute of Technology, Igbesa, with 76 administrative staff, was allocated 39 respondents. The proportionately allocated sample sizes yielded a total of 194 respondents, which constituted the final sample for the study.

4.0 Results

Research Question One: What is the level of psychological Well being of administrative staff in the ICT-Based Polytechnics in Ogun State, Nigeria?

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Table 1: Level of Psychological Wellbeing of Administrative Staff in the ICT-Based Polytechnics in Ogun State, Nigeria

Psychological Wellbeing	VH	H	L	VL	Mean	Std. Dev.
I can make choices that are not influenced by what most people are doing	74 (40.0%)	96 (51.9%)	14 (7.6%)	1 (0.5%)	3.31	0.633
I have confidence in my opinions, even if they differ from the consensus	28 (15.1%)	124 (67.0%)	33 (17.8%)	0 (0.00%)	2.97	0.575
I stick to what I believe, even if it is not popular	46 (24.9%)	101 (54.6%)	38 (20.5%)	0 (0.0%)	3.04	0.674
Staying under pressure is very hard for me	56 (30.3%)	101 (54.6%)	28 (15.1%)	0 (0.00%)	3.15	0.658
Unprepared events disrupt my focus	39 (21.1%)	111 (60.0%)	35 (18.9%)	0 (0.00%)	3.02	0.630
I can manage my daily work responsibilities effectively and stay on top of my tasks	47 (25.4%)	110 (59.5%)	11 (15.1%)	0 (0.00%)	3.10	0.630
Sometimes I have a feeling that I am stuck and progress is slow.	40 (21.6%)	112 (60.5%)	33 (17.8%)	0 (0.00%)	3.04	0.629
I believe it is important to have new experiences that challenge my perceptions of myself and the world	74 (40.0%)	86 (46.5%)	25 (13.5%)	0 0.00%	3.26	0.684
I set goals and notice steady improvement	62 (33.5%)	84 (45.4%)	39 (21.1%)	0 0.00%	3.12	0.730
Others see me as giving and willing to share my time with them	59 (31.9%)	83 (44.9%)	43 (23.2%)	0 (0.0%)	3.17	0.580
I can build trust and reciprocate relationships with my colleagues	49 (26.5%)	118 (62.8%)	18 (9.7%)	0 (0.00%)	3.66	0.596
I relate well with family and friends	37 (20.0%)	112 (60.5%)	36 (19.5%)	0 (0.00%)	3.01	0.630
I feel my life has direction, and I am not wandering aimlessly	60 (32.4%)	85 (45.9%)	40 (21.6%)	0 (0.00%)	3.11	0.729
I am still unsure of what really drives me	47 (25.4%)	98 (53.0%)	40 (21.6%)	0 (0.00%)	3.04	0.687
There is a clear goal guiding my actions	63 (34.1%)	78 (42.2%)	44 (23.8%)	0 (0.00%)	3.10	0.756
I am still learning to accept my weaknesses	58 (28.6%)	84 (50.3%)	43 (21.1%)	0 (0.0%)	3.08	0.736
I judge myself a lot and struggle to let go	53 (72.8%)	93 (20.7%)	39 (6.5%)	0 (0.00%)	3.66	0.596
I have come to like and accept most aspects of my personality	69 (37.3%)	73 (39.5%)	43 (23.2%)	0 (0.00%)	3.14	0.767
Weighted Mean for Psychological Wellbeing					3.17	

Decision Rule: Very Low=1.00 - 1.74, Low=1.75-2.49, High=2.50-3.24, Very High=3.25-4.00
Key: VH=4, H=3, L=2, VL=1
Source: Field Survey Data (2025)

The analysis of Table 1 shows that the administrative staff in ICT-Based Polytechnics in Ogun State demonstrate a high level of psychological wellbeing, with an overall weighted mean of 3.17. The data reveal that 74 staff (40.0%) reported "very high" ability to make independent choices, while 96 (51.9%) indicated "high," suggesting strong autonomy among the majority. Similarly, 124 staff (67.0%) expressed "high" confidence in their opinions even when they differ from others, and 101 (54.6%) said

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they stick to their beliefs, reinforcing the presence of strong personal agency. In terms of stress and work management, 101 respondents (54.6%) agreed that staying under pressure is very hard for them, and 111 (60.0%) indicated that unprepared events disrupt their focus, showing that stress and unexpected challenges affect many staff despite their overall ability to manage tasks, as seen in 110 respondents (59.5%) who reported effectively staying on top of work responsibilities.

Regarding personal growth, 86 staff (46.5%) reported a high desire for new experiences that challenge their perceptions, while 74 (40.0%) rated this "very high," showing strong openness to learning. Goal-setting also appears positive, with 84 staff (45.4%) saying they set goals and observe steady improvement. However, 112 (60.5%) noted sometimes feeling stuck, and 98 (53.0%) admitted they are unsure of what truly drives them, indicating some lack of clarity in personal direction. Interpersonally, wellbeing is very strong: 118 respondents (62.8%) reported a high ability to build trust and reciprocate relationships, and 83 (44.9%) said others see them as giving and willing to share their time. This suggests that positive workplace relationships are a key strength. In terms of self-acceptance, 84 staff (50.3%) said they are still learning to accept weaknesses, and 93 (20.7%) admitted they judge themselves a lot, while 73 (39.5%) expressed high acceptance of their personality.

The administrative staff show strong autonomy, good interpersonal relations, and a positive orientation toward growth, supported by the high frequencies and percentages in these areas. However, the data also highlight concerns related to stress, self-criticism, and occasional lack of direction, suggesting areas where mental health and wellbeing programs could be beneficial.

Research Question Two: What are the stress management practices adopted by the administrative staff in the ICT-Based Polytechnics in Ogun State?

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Table 2: Stress Management Practices adoption by the administrative staff in the ICT-Based Polytechnics in Ogun State

Stress Management Practice	SA	A	D	SD	Mean	Std.Dev
I perceived work situation I face as challenging opportunities rather than threats	58 (31.4%)	99 (53.5%)	28 (15.1%)	(0) (0.00%)	3.16	0.664
I often feel overwhelmed by the demands of my job	36 (19.5%)	111 (60.0%)	38 (20.5%)	0 (0.00%)	2.99	0.634
I worry about my ability to meet deadlines and expectations	30 (16.2%)	122 (65.0%)	33 (17.8)	0 (0.00%)	2.98	0.585
I believe I have the skills to handle work stress effectively	65 (35.1%)	95 (51.4%)	25 (13.5%)	0 (0.0%)	3.22	0.665
I can usually identify ways to deal with difficult work situations	40 (21.6%)	112 (60.5%)	33 (17.7%)	0 (0.0%)	3.04	0.629
I have access to support from supervisor, colleagues and others when needed	65 (35.1%)	95 (51.4%)	25 (13.5%)	0 (0.0%)	3.22	0.665
I prioritize my tasks to manage workload	50 (27.0%)	100 (54.1%)	35 (18.9%)	0 (0.00%)	3.08	0.675
I seek help or advice when facing work challenges	50 (27.0%)	99 (53.5%)	36 (19.5%)	0 (0.0%)	3.08	0.679
I engage with hobbies or entertainment after work as emotion-focused coping strategies	55 (29.7%)	90 (48.6%)	40 (21.6%)	0 (0.00%)	3.08	0.714
My stress level negatively affects my job performance	60 (32.4%)	95 (51.4%)	30 (16.2%)	0 (0.0%)	3.16	0.680
I feel emotionally drained at the end of the workday	44 (23.8%)	118 (63.8%)	23 (12.4%)	0 (0.00%)	3.11	0.515
I feel satisfied with the way I handle stress	60 (32.4%)	92 (49.7%)	33 (17.8%)	0 (0.00%)	3.15	0.696
Weighted Mean for Stress Management Practices					3.11	

Decision Rule: Very Low=1.00 - 1.74, Low=1.75-2.49, High=2.50-3.24, Very High=3.25-4.00
Key: SA=4, A=3, D=2, SD=1

The results presented in Table 2 show that administrative staff in ICT-Based Polytechnics in Ogun State exhibit a high level of adoption of stress-management practices, as reflected in the overall weighted mean of 3.11, which falls within the "High" category. The data indicate that 58 staff (31.4%) strongly agreed and 99 (53.5%) agreed that they perceive work situations as challenging opportunities rather than threats, suggesting a generally positive and adaptive mindset. At the same time, stressors are clearly present: 111 respondents (60.0%) agreed that they often feel overwhelmed by job demands, while 122 (65.0%) agreed that they worry about meeting deadlines and expectations, showing that work pressure remains a significant issue despite the adoption of coping mechanisms.

In terms of problem-focused coping, many respondents believe they have the capacity to manage stress effectively. For example, 65 staff (35.1%) strongly agreed and 95 (51.4%) agreed that they have the skills to handle work stress, and a similar pattern appears with access to workplace support, with 65 (35.1%) strongly agreeing and 95 (51.4%) agreeing. Furthermore, 112 respondents (60.5%) agreed that they can identify ways to deal with difficult work situations, and 100 (54.1%) agreed they prioritize their tasks to manage workload, indicating strong use of proactive stress-management strategies. Additionally, 99 staff (53.5%) reported seeking help or advice during work challenges, further supporting the presence of collaborative and adaptive coping practices.

Emotion-focused strategies are also prominent. 90 respondents (48.6%) agreed, and 55 (29.7%) strongly agreed that they engage in hobbies or entertainment after work to relieve stress. However, the impact of stress remains noticeable. 95 staff (51.4%) agreed that stress negatively affects job performance, and 118 (63.8%) agreed they feel emotionally drained at the end of the workday,

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underscoring the ongoing emotional burden of their roles. Despite this, 92 respondents (49.7%) agreed and 60 (32.4%) strongly agreed that they feel satisfied with the way they handle stress, indicating an overall sense of competence in their stress-management strategies.

In summary, the administrative staff show a high adoption of both problem-focused and emotion-focused stress-management practices, supported by substantial frequencies and percentages across the items. However, the high levels of reported overwhelm, emotional exhaustion, and performance impacts suggest that stress remains a significant challenge, indicating a need for further organizational support, workload restructuring, or more targeted stress-reduction intervention.

Hypothesis: There was no significant influence of Stress Management Practices on psychological wellbeing of administrative staff in Ogun State ICT-Based Polytechnics, Ogun Staate.

Table 3: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.369[a]	.136	.132	.32538

a. Predictors: (Constant), Stress Management

The model summary shows an R-value of .369, indicating a moderate positive relationship between stress management practices and psychological well-being. The R Square value of .136 reveals that stress management practices account for 13.6% of the variance in psychological wellbeing among the administrative staff. This means that while stress management practices do not explain all changes in wellbeing, they represent a meaningful contributing factor.

Table 4: ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3.061	1	3.061	28.910	.000[b]
	Residual	19.375	183	.106		
	Total	22.436	184			

a. Dependent Variable: Psychological Wellbeing

b. Predictors: (Constant), Stress Management

The ANOVA results further confirm the model's significance, with an F-value of 28.910 and a p-value of .000, which is below the 0.05 threshold. This indicates that the regression model is statistically significant and that stress management practices have a real impact on psychological wellbeing.

Table 5: Coefficients[a]

		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	2.257	.159		14.201	.000
	Stress Management	.272	.051	.369	5.377	.000

a. Dependent Variable: Psychological Wellbeing

The coefficients table shows that stress management has a significant positive effect on psychological wellbeing (B = .272, t = 5.377, p = .000), meaning that for every unit increase in stress management practice score, psychological wellbeing increases by .272 units. Since the p-value for stress management (.000) is far below 0.05, we reject the null hypothesis. Therefore, the study concludes that stress management practices significantly influence the psychological wellbeing of administrative staff in ICT- Based Polytechnics in Ogun State, with better stress management associated with improved wellbeing.

Discussion of Findings

The study found that administrative staff in ICT-Based Polytechnics in Ogun State reported a high level of psychological wellbeing (weighted mean = 3.17). This suggests that the respondents generally possess positive self-evaluation, maintain healthy interpersonal relationships, and continue to pursue personal growth despite experiencing occasional work-related pressures. This finding is consistent with

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the study of Lee, B. E. C. et al. (2023), who reported that favourable workplace conditions, social support, and effective personal coping resources were significant predictors of higher psychological wellbeing among frontline employees. Their study demonstrated that employees with better psychological resources reported greater wellbeing and lower psychological distress.

The findings also revealed that administrative staff demonstrated a high level of stress management practices (weighted mean = 3.11), particularly through problem-focused coping strategies such as task prioritisation and seeking assistance, as well as emotion-focused approaches including relaxation and recreational activities. Nevertheless, respondents continued to report workload pressure and anxiety associated with demanding work responsibilities. This finding agrees with the study by Spaan, et al. (2024), who found that employees who adopted problem-focused coping and positive cognitive restructuring experienced significantly lower burnout symptoms despite exposure to workplace stress. The authors concluded that effective coping strategies serve as protective mechanisms that enhance employees' wellbeing in stressful work environments.

The regression analysis further established that stress management practices significantly influenced psychological well being ($R = .369$, $p < .05$), explaining 13.6% of the variance in psychological well being. The positive regression coefficient indicates that improved stress management practices contribute significantly to enhanced psychological well being among administrative staff. This finding is supported by Mansell, P. C. and Turner, M. J. (2023), who found that proactive coping significantly mediated the relationship between stress mindset and psychological well being. Their study concluded that individuals who adopt proactive coping strategies are more likely to experience better psychological well being because they perceive stressful situations as manageable challenges rather than overwhelming threats.

The rejection of the null hypothesis confirms that stress management practices significantly influence the psychological well being of administrative staff in ICT-Based Polytechnics in Ogun State. This finding supports Lazarus and Folkman's Transactional Model of Stress and Coping, which argues that individuals' cognitive appraisal of stressful situations and the coping strategies they employ determine their psychological outcomes. The implication is that institutional management should strengthen stress management programmes, employee counselling services, workload management policies, and supportive work environments to sustain employees' psychological well being, motivation, and productivity.

Conclusion

This study investigated the influence of stress management practices on the psychological wellbeing of administrative staff in ICT- Based Polytechnics in Ogun State. The findings revealed that the administrative staff generally reported a high level of psychological wellbeing, as indicated by a weighted mean of 3.17. This demonstrates that most staff feel confident in their abilities, maintain positive interpersonal relationships, and show openness toward personal growth, although some still experience pressure, self-criticism, and occasional uncertainty about personal goals.

The study also found that the adoption of stress management practices among the staff was high, with a weighted mean of 3.11. Respondents demonstrated strong use of both problem-focused strategies, such as task prioritization, seeking support, and developing coping skills and emotion-focused strategies, including engagement in hobbies and personal relaxation activities. Despite these efforts, many staff still experience emotional strain, work overload, and anxiety about meeting deadlines, showing that workplace stress remains a persistent challenge.

The regression analysis established a moderate and statistically significant relationship between stress management practices and psychological well being ($R = .369$, $p < .05$). Stress management practices accounted for 13.6% of the variance in psychological well being, indicating that they play an important, although not exclusive, role in promoting mental and emotional health among staff. The significant positive coefficient ($B = .272$, $p = .000$) confirms that increased use of stress-management techniques leads to improved psychological well being.

Based on these results, the null hypothesis, which stated that stress management practices have no significant influence on psychological well being was rejected. The study concludes that effective

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stress management is essential for enhancing the psychological well-being of administrative staff, especially in ICT- Based Polytechnics where the work environment is characterised by rapid digital changes, heavy workloads, and high job demands. Strengthening stress-management programmes and improving institutional support systems will therefore be crucial in sustaining the well-being, motivation, and productivity of administrative personnel.

Recommendations

Based on the findings of the study, it is recommended that:

1. The Management of ICT- Based Polytechnics should develop structured psychological well-being programs, including regular mental health assessments, wellness workshops, and counseling services. These initiatives should aim to promote self-awareness, emotional balance, and a sense of purpose among administrative employees, thereby enhancing their overall psychological well-being and job satisfaction.

2. The management should institutionalize comprehensive stress management training that focuses on both primary and secondary appraisal techniques. Such programs should teach employees to recognize stressors early, evaluate them constructively, and apply effective coping strategies such as time management, mindfulness, and relaxation techniques. Additionally, Employee Assistance Programs (EAPs) and peer-support networks should be introduced to provide continuous professional and emotional support.

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INFORMATION MANAGEMENT PRACTICES AND THE PERFORMANCE OF OFFICE MANAGERS IN NIGERIAN NATIONAL PETROLEUM CORPORATION (NNPC)

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Abstract
This study examined information management and the performance of office managers in the Nigerian National Petroleum Corporation (NNPC) in Southwest, Nigeria, adopting a quantitative research approach using the descriptive survey design. The population comprised 294 office managers in selected departments of the corporation, with a purposive sample of seventy-five respondents. Data were collected through a structured questionnaire, validated and tested for reliability through a pilot test with a coefficient of 0.89. Data collected were analyzed using descriptive statistics of percentages, mean and standard deviation and inferential statistics. Findings revealed that information management practices among office managers were high, particularly in areas related to record organization, information accessibility, and standardized documentation procedures; office managers demonstrated high levels of performance in terms of task completion, communication, coordination of administrative activities, and report preparation; and effective information management significantly contributes to improved job efficiency, enhanced decision-making, and better coordination of office operations. However, the findings indicated the need for improved training in information management systems and stronger technological support to maximize the benefits of information management practices. The study concluded that strengthening information management systems can significantly improve the performance of office managers and enhance administrative productivity within large public sector organizations. It is recommended among others that the management of the Nigerian National Petroleum Corporation needs to improve its information management system by investing in modern digital technologies.

Keywords: Information Management, Office Managers' Performance, Management Information Systems, Administrative Efficiency, Organizational Productivity

1.0 Introduction

In this modern knowledge-driven economy, information has become one of the most valuable organizational resources that guides the way managers make decisions, achieve operational efficiency and institutional productivity. Organizations continue to rely on efficient information management systems to collect, process, store and disseminate relevant data needed for strategic planning to run daily administrative functions. It concerns the orderly management of information resources such as technology, process and human competence necessary to provide accurate information at the right time in order to aid the activities of an organization.

In modern organizations, especially large public sector organizations, information management is directly related to managerial performance, administrative efficiency and overall productivity of employees (Mahmood, Ahmed, & Fadhil, 2021). Consequently, organizations are investing a lot in information technologies and management information systems (MIS) to improve job performance which guarantees that informed choices are made across administrative units. Adeyeye and Erwat (2024) opined that information explosion has become the order of the day in every organization, associated with the emergence of ever dynamic technologies, hence office managers/secretaries are expected to upgrade their skills of information management practices to enrich their performance.

Office manager's role in an organization ensures organizational coordination and effective information flow to ensure that the administrative processes are running smoothly. Their responsibilities involve supervision of office operations, systems of documentation and communication, coordination of staff activities, and, aid to executive decision-making through the provision of pertinent information. This means that office managers serve as the network of information flow in organizations, their performance has been closely associated with the availability, accessibility, and effective management

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of information resources. The increasing complexity in organizational operations has therefore made the need for information management a critical issue in improving the performance of office managers.

As information is effectively managed, office managers are able to make timely decisions, provide better coordination between departments and increase productivity in the organizations (Okoye, Egbunike, & Onyali, 2013).

The advent of digital technologies and management information systems has further revolutionized how organizations handle information and their administrative process. Management Information Systems (MIS) enable the processing of large volumes of data by organizations in an efficient manner and convert them into meaningful information useful to managerial decision-making in the organization. Studies have shown that the use of effective MIS enhances the quality of decision making, the productivity of managerial work, and improvement and reinforcement of the organization's performance (Shniekat, Al-Abdallat, Al-Hussein & Ali 2022; Mahmood, Ahmed & Fadhil 2021). By providing real time information, MIS helps the office managers to coordinate effectively, observe the performance indicators effectively and ensure the effective allocation of organizational resources.

Information and communication technologies (ICT) have also played an important role in the functioning of organizations and the performance of employees. The integration of ICT tools in administrative functions has made the communication faster, data storage and retrieval improved and collaboration between employees improved. Okundaye, Fan and Dwyer (2019) researched the impact of ICT in Nigerian small-to medium-sized enterprises and found that ICT adoption contributes to enhancement of organizational efficiency and productivity and reduces administrative processes and operational delays. Also, electronic document management systems, enterprise resource planning systems and digital communication platforms help office managers to do their jobs better. These technologies support the timely exchange of information and minimize bureaucratic bottlenecks which often pose a hindrance to administrative efficiency.

In institutions as large as the Nigerian National Petroleum Corporation (NNPC) in the public sector, information management is especially important on account of the complexity of work and the huge volume of information and administrative activities involved. The NNPC is among the largest public sector organizations in Nigeria with thousands of employees working in its different subsidiaries and operational units (Eboh, 2020). Given the magnitude of its operations, the smooth running of the organization will require efficient information management, smooth coordination of activities, effective communication of information, and the management of decision-making processes among the managers and administrative personnel. Office managers are responsible for coordination of administrative activities and management of documentation systems to ensure that relevant information is available to support managerial decisions.

Several empirical research-based studies have shown the relationship between information systems and employee performance in different organizational setups. For instance, Young-Harry, Oparanma and Ejo-Orusa (2018) investigated management information system (MIS) and organizational performance of Seven-Up Bottling Company and found that the use of management information systems had a significant effect on improving the organizational performance of beverage manufacturing firms by enabling better data accessibility and decision-making processes. Similarly, Olaoye, Olaofe-Obasesin and Akanni (2019) researched the impact of information technology on corporate organizations' performance in Nigeria and reported that information technology adoption had also been found to have a positive impact in the performance of corporate organisations in Nigeria, by facilitating efficient management of data and communication processes in business. Adeyeye and Erwar (2024) investigated the influence of information management practices on job performance of secretaries in public polytechnics in South-west, Nigeria adopting the descriptive research design with a population of 648 secretaries from both federal and state polytechnics in six states of South-west, Nigeria. The sample size was 242 which was determined using the Krejcie and Morgan sample size determination table using stratified proportionate sampling technique. Results showed that the level of information management practices of secretaries under examination is moderate with a mean of 3.32. There was a significant influence of information management practices on job performance of secretaries in public polytechnics in South-west Nigeria (Adj.R2 = 0.328, $F(5.212)=22.191, p< 0.05$). it was concluded that

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information management practices have significant influence on job performance of secretaries in public polytechnics in South-west Nigeria.

Futhermore, information literacy and the capacity to use the available information resources effectively has been found to be important determinants of working performance. According to Naveed, Iqbal, Asghar, Shaukat and Seitamaa-Hakkarainen (2023), information literacy serves to increase employees with a higher level of creativity, problem-solving ability, and the ability to learn a life-long process, which in the end contribute to better work performance. Employees with strong information management skills are able to analyze data, interpret information, and use information to help understand organizational tasks. This is especially applicable to office managers whose careers will involve coordinating information flows, an accurate record, and supporting the strategic decision-making process in organizations.

Technological advancements have also altered human resource management practices and operations in the workplace, especially during times when organizations have been disrupted, such as the period during the current pandemic caused by the coronavirus. The use of digital information systems has helped organizations keep administrative work running and enhance workforce coordination. Selvaraj and Venkatakrishnan (2023) said that information systems played a critical role in the successful management of human resources during the pandemic, including remote communication, data management, and performance monitoring. Similarly, Sapta, Muafi and Setini (2021) pointed out that technological innovation, organization culture, and job satisfaction are the factors that generally contribute to better performance of employees, especially in conditions where technology has been effectively integrated into organizational workplaces. These results indicate that enterprises that effectively integrate the information management systems into their administrative structures are more likely to exhibit higher levels of performance by the employees.

In addition, leadership practices and the integration of technology have been found to be important considerations when it comes to such organizational performance in learning and different corporate environments. Abdalla et al. (2021a) reported that information technology has a moderating effect on increasing the effectiveness of transformational leadership in educational organizations. Similarly, Abdul et al. (2021b) revealed that information technology mediates the association between transformational leadership and organizational performance. These findings reflect the wider organizational significance of information systems to support effective management to enhance performance outcomes. Information management is also an important aspect in the efficiency of a workplace by the accessibility of information and aiding in the effective consumption of information. Godoy et al. (2025) emphasized that motivated information management systems could greatly enhance the efficiency of a work area because the employees will receive the relevant information in a timely and organized manner.

Furthermore, adopting information systems has been proven to enhance project management results and facilitate the risk management process and better coordination of the project teams (Taresh; Golestanizadeh; Sarvari & Edwards, 2025). This stresses the strategic importance of information management systems in enabling better effectiveness of the organizations in diverse operational situation.

With special reference to the Nigerian context, scholarly studies focusing on the link between information technology and employee performance has revealed the need of digital tools in improving workplace productivity. For example, Oluwatoyin (2024) has reported that information and communication technology significantly improved the performance of human resources in Nigerian Port Authority by improving the processing of information and communication efficiency. Similarly, Jawad; Muzaffar and Mahrnood (2014) found that technological adoption helped in improving performance of employees in the banking sector by facilitating faster exchange of information and enhancing the operational coordination. Office managers hold a vital administration position that involves proper administration of information resources to benefit the organization's procedures. Understanding how the information management practices affect office managers' performances is therefore key to enhancing efficiency in administration and boosting organizational productivity.

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Studies undertaken in various organizational environments have focused on the fact that the successful implementation of information management systems requires not only technological infrastructure but also managerial competencies and organizational support environments (Abane & Brenya, 2021). Despite the increasing realization about the importance of information management in the performance of organizations, many public sector organizations in developing countries still experience problems associated with inefficient information systems, poor technological infrastructure, and poor information management skills of the employees. These challenges can adversely impact the performance of the office managers, leading to delays in the administrative processes, poor communication, and low organizational productivity.

Although, there are many researches that have studied the correlation between information technology and organizational performance, little studies have been conducted especially on the influence of information management in improving the performance of office managers in large public sector organization like Nigerian national petroleum corporation.

Given the strategic role of the office manager in organizing the flow of information and supporting decision-making processes, this paper investigated the information management practices and the performance of office managers within the NNPC. The specific objectives were to:

i. examine information management practices among office managers in the Nigerian National Petroleum Corporation (NNPC);
ii. assess the performance indicators of office managers in the Nigerian National Petroleum Corporation (NNPC); and
iii. determine the relationship between information management practices and the performance of office managers in the Nigerian National Petroleum Corporation (NNPC).

Research Questions

i. What are the information management practices among office managers in the Nigerian National Petroleum Corporation (NNPC)?
ii. What are the performance indicators of office managers in the Nigerian National PetroleumCorporation (NNPC)?
iii. What is the relationship between information management practices and the performance of office managers in the Nigerian National Petroleum Corporation (NNPC)?.

Research Hypothesis

There is no significant relationship between information management practices and performance of office managers in the Nigerian National Petroleum Corporation.

3.0 Methodology

The research adopted the descriptive survey design. The population of the study comprised 294 office managers who work within offices/departments and subsidiaries of the Nigerian National Petroleum Corporation (NNPC) in Southwest, Nigeria. Although the sample size of 294 is 169 (Krejcie & Morgan 1970), a sample size of 75 office managers was purposively selected, ensuring that respondents who had sufficient knowledge and experience with regards to information management practices within the corporation were included in the study, and in line with the inclusion criteria of either having administrative managerial positions related to office coordination and information management. Data were gathered through structured questionnaire, with items structured using a 5-point Likert scale of (SA - Strongly Agree; A - Agree; N - Neutral; D - Disagree; SD - Strongly Disagree) and validated for both validity and reliability structures. Reliability of research instrument was ensured through a pilot test with a reliability analysis based on the Cronbach's alpha method and a reliability coefficient value of 0.89 was obtained. Data collected were analyzed using descriptive statistical methods of frequencies, percentages, and means for research questions while inferential statistics of Pearson Product Moment Correlation statistics was used to test the hypothesis at 0.05 level of significance. For the purpose of interpretation, any mean score of 3.00 and above was regarded as accepted level while any mean score of 2.99 and below was regarded as not accepted.

4.0 Results

Research Question 1: What are the information management practices among office managers in the Nigerian National Petroleum Corporation (NNPC)?

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Table 1: Mean Responses of Information Management Practices among Office Managers (n = 75)

S/N	Information Management Practice Items	SA + A F(%)	N F(%)	SD + D F(%)	Mean
1	Easy access to relevant information when needed.	51 (68.0)	16 (21.3)	8 (10.7)	3.84
2	Quick retrieval of properly organized office records.	54 (72.0)	15 (20.0)	6 (8.0)	3.92
3	Utlization of electronic filing systems for official documents.	44 (58.7)	19 (25.3)	12 (16.0)	3.61
4	Timely sharing of nformation across units.	40 (53.3)	21 (28.0)	14 (18.7)	3.49
5	Data accuracy is routinely checked before use.	47 (62.7)	19 (25.3)	9 (12.0)	3.73
6	There are clear procedures for handling confidential information.	59 (78.7)	12 (16.0)	4 (5.3)	4.03
7	Reports are prepared using standardized templates/forms.	61 (81.3)	11 (14.7)	3 (4.0)	4.08
8	Backup systems exist for preventing loss of key records.	33 (44.0)	22 (29.3)	20 (26.7)	3.32
9	Staff receive periodic training on information systems/tools.	29 (38.7)	23 (30.7)	23 (30.7)	3.15
10	ICT tools support day-to-day administrative operations.	48 (64.0)	18 (24.0)	9 (12.0)	3.76
	Grand Mean				3.69

SA+A = 3.00-4.50, N = 2.50-2.99, SD+D = 1.00. - 2.49.

Table 1 presents the descriptive analysis of information management practices among office managers in the Nigerian National Petroleum Corporation (NNPC). The findings indicate that information management practices are generally practiced at an acceptable level among the respondents with a grand mean of 3.69. This is reflected in the relatively high mean values recorded across most of the items. For instance, the item stating that reports are prepared using standardized templates/forms recorded the highest agreement with 61 respondents (81.3%), while only 3 respondents (4.0%) disagreed, producing a mean score of 4.08, which indicates a strong level of practice. Similarly, 59 respondents (78.7%) agreed that there are clear procedures for handling confidential information, with a mean value of 4.03, suggesting that information security procedures are well established within the organization.

The results also show that 54 respondents (72.0%) agreed that office records are properly organized for quick retrieval (mean = 3.92), while 51 respondents (68.0%) confirmed that relevant information is easily accessible when needed (mean = 3.84). These findings suggest that effective record management and information accessibility is practiced within the corporation at an acceptable level. However, certain aspects of information management appear relatively weaker. For example, only 29 respondents (38.7%) agreed that staff receive periodic training on information systems, with a relatively low mean score of 3.15. Similarly, the availability of backup systems for preventing loss of key records recorded 33 respondents (44.0%) agreement with a mean of 3.32. Overall, the results indicate that while core information management practices such as documentation procedures and information accessibility are well established, areas such as training and information backup systems require improvement.

Research Question 2: What are the performance indicators of office managers in the Nigerian National Petroleum Corporation (NNPC)?

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Table 2: Mean Responses of Performance Indicators of Office Managers (n = 75)

S/N	Office Managers' Performance Items	SA + A F(%)	N F(%)	SD + D F(%)	Mean
1	I complete assigned tasks within specified timelines.	60 (80.0)	12 (16.0)	3 (4.0)	4.05
2	I prioritize work effectively when handling multiple responsibilities.	56 (74.7)	14 (18.7)	5 (6.7)	3.96
3	I communicate clearly with supervisors and staff.	63 (84.0)	10 (13.3)	2 (2.7)	4.11
4	I coordinate meetings, schedules and administrative tasks efficiently.	58 (77.3)	13 (17.3)	4 (5.3)	3.98
5	I effectively manage office documentation and records.	55 (73.3)	14 (18.7)	6 (8.0)	3.89
6	I respond promptly to requests for information or reports.	57 (76.0)	12 (16.0)	6 (8.0)	3.94
7	I maintain high accuracy when preparing reports and documents.	59 (78.7)	11 (14.7)	5 (6.7)	4.01
8	I support management decision-making with relevant information.	52 (69.3)	16 (21.3)	7 (9.3)	3.82
9	I handle administrative challenges effectively.	50 (66.7)	18 (24.0)	7 (9.3)	3.79
10	I maintain productivity even during periods of heavy workload.	48 (64.0)	19 (25.3)	8 (10.7)	3.76
	Grand Mean				3.54

SA+A = 3.00-4.50, N = 2.50-2.99, SD+D = 1.00. - 2.49.

Table 2 presents the descriptive statistics on the performance of office managers in the Nigerian National Petroleum Corporation. The results indicate that the overall performance of office managers is high, as reflected in the high levels of agreement and with a grand mean of 3.54. For example, 63 respondents (84.0%) agreed that they communicate clearly with supervisors and staff, while only 2 respondents (2.7%) disagreed. This item recorded the highest mean score of 4.11, indicating a strong level of communication competence among the office managers. Similarly, 60 respondents (80.0%) reported that they complete assigned tasks within specified timelines, resulting in a mean score of 4.05, which suggests a high level of task efficiency among the respondents.

Other indicators of performance also recorded strong positive responses. For instance, 59 respondents (78.7%) agreed that they maintain high accuracy when preparing reports and documents (mean = 4.01), while 58 respondents (77.3%) indicated that they coordinate meetings, schedules, and administrative tasks efficiently (mean = 3.98). These results demonstrate that office managers perform effectively in coordinating administrative functions and ensuring accurate documentation. However, slightly lower levels of agreement were recorded in areas related to managing administrative challenges and maintaining productivity under heavy workloads. Specifically, 50 respondents (66.7%) agreed that they handle administrative challenges effectively (mean = 3.79), while 48 respondents (64.0%) agreed that they maintain productivity during periods of heavy workload (mean = 3.76). Overall, the findings indicate that office managers demonstrate a high level of administrative competence and efficiency in carrying out their professional responsibilities.

Research Question 3: What is the relationship between information management practices and the performance of office managers in the Nigerian National Petroleum Corporation (NNPC)?

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Table 3: Mean Responses on the Relationship between Information Management Practices and Office Managers' Performance? (n = 75)

S/N	Information Management Practices and Office Managers' Performance	SA + A F(%)	N F(%)	SD + D F(%)	Mean
1	Effective information management improves my job efficiency.	58 (77.3)	12 (16.0)	5 (6.7)	3.97
2	Access to timely information improves the quality of my work.	60 (80.0)	10 (13.3)	5 (6.7)	4.02
3	Information systems help me make better administrative decisions.	55 (73.3)	13 (17.3)	7 (9.3)	3.88
4	Well-organized records make office coordination easier.	57 (76.0)	12 (16.0)	6 (8.0)	3.93
5	Digital information systems reduce administrative delays.	54 (72.0)	14 (18.7)	7 (9.3)	3.85
6	Information sharing between departments enhances my performance.	52 (69.3)	15 (20.0)	8 (10.7)	3.80
7	Availability of accurate data improves my productivity.	56 (74.7)	13 (17.3)	6 (8.0)	3.90
8	Information technology tools improve communication in the office.	53 (70.7)	14 (18.7)	8 (10.7)	3.83
9	Training in information management enhances my administrative effectiveness.	49 (65.3)	16 (21.3)	10 (13.3)	3.74
10	Efficient information flow helps achieve organizational goals.	57 (76.0)	11 (14.7)	7 (9.3)	3.95
	Grand Mean				3.89

SA+A = 3.00-4.50, N = 2.50-2.99, SD+D = 1.00. - 2.49.

Table 3 presents the responses regarding the relationship between information management and the performance of office managers in the Nigerian National Petroleum Corporation. The results reveal that information management practices strongly relates to the performance of office managers, as reflected in the high levels of agreement across the majority of the items and with a grand mean of 3.89. For instance, 60 respondents (80.0%) agreed that access to timely information improves the quality of their work, while 5 respondents (6.7%) disagreed, resulting in the highest mean score of 4.02. This finding suggests that the availability of timely and relevant information significantly enhances the quality of administrative outputs.

Similarly, 58 respondents (77.3%) indicated that effective information management improves their job efficiency (mean = 3.97), while 57 respondents (76.0%) agreed that well-organized records make office coordination easier (mean = 3.93). These findings emphasize the importance of structured information systems in facilitating efficient office operations. Additionally, 56 respondents (74.7%) reported that the availability of accurate data improves their productivity (mean = 3.90), highlighting the role of reliable information in supporting managerial effectiveness. Although most respondents recognized the positive impact of information management, a slightly lower level of agreement was recorded regarding training in information management, where 49 respondents (65.3%) agreed (mean = 3.74). This suggests that although information management systems contribute significantly to performance, there may still be a need for additional training to maximize their benefits. Overall, the results confirm that effective information management plays a critical role in enhancing the efficiency and productivity of office managers.

Test of Hypothesis

Ho1: There is no significant relationship between information management practices and performance of office managers in the Nigerian National Petroleum Corporation (NNPC).

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Table 4: Information management practices and performance of office managers

Variables	N	Mean	Stand Dev	r-cal	p-value
Information Management Practices	75	36.93	3.17		
Office Managers' Performance	75	39.31	3.09	0.781*	0.000

*P<0.05

The Table showed that the r-cal value of 0.781 is significant at 0.05 level of significance because the P-value (0.000) < 0.05. The null hypothesis is rejected. This implies that there was a significant relationship between information management practices and performance of office managers in the Nigerian National Petroleum Corporation (NNPC).

Discussion of Findings

The hypothesis tested revealed a high significant relationship between information management practices and performance of office managers in the Nigerian National Petroleum Corporation (NNPC). The findings of this study revealed that information management practices among the office managers in the Nigerian National Petroleum Corporation (NNPC) is generally on the high par. The descriptive results revealed high levels of agreements on standardized documentation procedures, record organization and accessibility of information. Most respondents agreed that reports are written following standardized templates and that there are sanctioned procedures for managing confidential information, reflecting high levels of agreement on standardised documentation practices and information accessibility. This finding aligns with Mahmood et al. (2021), who demonstrated that structured information management systems directly enhance organisational efficiency by ensuring that accurate information is consistently available for decision-making and administrative coordination. Corroborating this, Shniekat et al. (2022) found that management information systems exert an intensifying effect on institutional performance precisely through improvements in the availability, organisation, and utilisation of organisational data, outcomes that mirror the documentation strengths observed in the present study.

The results further showed that information accessibility and organized documentation systems have a lot of contribution in the effective administrative operations. The majority of respondents agreed that office records are appropriately organized and that appropriate information is easily accessible when needed. This finding is congruent with Young-Harry et al. (2018), who found that management information systems boost the performance of organizations through increased accessibility of information and the decision process by management. Likewise, Okoye et al (2013) found that the introduction of management information systems enhances managerial performance, by ensuring that managers have access to correct and relevant information needed for an effective decision.

However, the study has also shown some relatively weaker sides of information management practices in the area of training and technological back up systems. A lower percentage of respondents agreed that staff are periodically trained in the use of information management systems, suggesting that even where such systems exist within the organisation, employees may not be receiving adequate training to utilise them fully. Naveed et al. (2023) directly support this finding, demonstrating that information literacy development and continuous learning are critical to work performance, as employees equipped with strong information management capabilities are better able to interpret and apply available information resources effectively. In the same vein, Edeh et al. (2020) found that the integration of emerging technologies only translates into improved job performance when employees receive sufficient training and institutional support, a condition that the present study's findings suggest remains unmet for a notable proportion of respondents.

The results which relate to the performance of office managers showed that the respondents exhibited high levels of administrative competence and effectiveness. The largest number say they do the tasks assigned to them within the time limits specified, communicate well with supervisors and people in the staff room, and maintain a high level of accuracy when preparing reports and written documents. These findings suggest that the office managers within NNPC do their administrative responsibility effectively and maintain a high level of professionalism in office management. This result is consistent with the findings of Olaoye et al. (2019) who reported that integration of information technology in organizations improve the level of productivity and operational efficiency of employees. Similarly, the

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results are in tandem with Jawad et al. (2014), who found that the technological resources have a serious effect on improving the performance of employees by enabling efficient communication, coordination and access to information within organizations.

Furthermore, the results showed the importance of information management in the performance of office managers. A good number of respondents agreed that access to timely information improves the quality of their work and enhances their efficiency on the job. Godoy et al. (2025) directly support this finding, demonstrating that information management systems improve workplace efficiency by ensuring employees have access to accurate and timely information needed to perform their tasks enabling informed decision-making, coordinated activity, and prompt responses to organisational demands. Reinforcing this, Selvaraj and Venkatakrishnan (2023) found that information systems enhance organisational performance by promoting effective communication, information sharing, and coordination among employees, outcomes that are consistent with the efficiency gains reported by office managers in the present study.

The respondents indicated that organized records and smooth flow of information have made coordination easier in the office, and have made them more productive overall. These findings are similar to Okundaye et al. (2019), who reported that information and communication technologies provide better efficiency in the organization by boosting faster communication, data processing, and collaboration between employees. Similarly, Oluwatoyin (2024) discovered that information and communication technology has a significant effect on human resource performance by making information processing communication within the organization better.

Overall the results of the study support the significance of effective information management practices in enhancing the performance of office managers in large public sector organizations such as NNPC. The results show that adequate organization of information and accessibility can help office managers to execute their administrative responsibilities efficiently.

However, the findings also underscore the importance of organizations improving training programs and technological support systems to maximize the benefits of information management systems, which can further improve the effectiveness of information management practices and improve the performance of office managers.

Conclusion

The research work examined the information management practices and the performance of office managers in Nigerian National Petroleum Corporation (NNPC). It was found that structured documentation systems, availability of relevant information, and effective information sharing systems play a major role in enhancing better coordination of office activities and improved decision-making processes. The study concludes that office managers should be provided with adequate necessary facilities in the performance of their duties to avail well-organized and reliable information systems to enable efficient performance of their managerial roles. However, there were some gaps identified in the study, especially in the area of training and technological support which could hinder the utilization of information management systems within the organization to its fullest extent. Overall, the research exposes the need to reinforce information management practice as a strategic instrument for providing administrative effectiveness and enhancement of organizational performance in the large public sector institutions.

Recommendations

1. The management of the Nigerian National Petroleum Corporation should improve its information management system by investing in modern digital technologies that can help in efficient information storage, retrieval, and information sharing across various departments.
2. Regular training programmes should be organised for office managers and office administrative staff to improve their information management skills as well as their ability to make good use of available information systems.
3. The organization should have comprehensive data backup and security systems in place to ensure that there are no losses of important organizational data and sensitive records are protected.

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4. Policies and guidelines that encourage efficient information sharing and communication with different departments need to be developed and continually implemented to enhance improved coordination and administrative efficiency.

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