CLOUD COMPUTING AND ETHICAL OFFICE PRACTICES: A CASE STUDY OF ADEYEMI FEDERAL UNIVERSITY OF EDUCAITON, ONDO

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Abstract
Cloud computing has become a transformative tool in modern organizational practices, offering significant improvements in efficiency, flexibility, and collaboration. This study examines the influence of cloud computing on ethical office practices at Adeyemi Federal University of Education, Ondo. A descriptive research design for the survey was adopted. The population of the study consisted of 1,320 staff members and administrators of Adeyemi Federal University of Education, Ondo. A sample size of 132 staff members was selected using a proportionate sampling technique. A self-developed questionnaire titled Cloud Computing and Ethical Office Practices (CCEOP) was used to collect data for the study. The face and content validity of the instrument was done by three experts from Adeyemi Federal University of Education, Ondo. The internal consistency of the instrument was ascertained using a Cronbach's Alpha statistical tool, which yielded an overall reliability coefficient of 0.80. The data collected were analysed using descriptive statistics such as percentages, mean scores, and standard deviation. The study found that while cloud computing offers significant benefits in terms of operational efficiency, challenges remain in ensuring the security of sensitive data and adhering to ethical standards in managing institutional information. The paper offers recommendations for improving cybersecurity infrastructure, encryption, multifactor authentication, and compliance with data protection regulations, contributing to the successful integration of cloud computing in educational institutions.

Keywords: Cloud Computing, Ethical Practices, Office Management

Introduction

Cloud computing has emerged as a pivotal innovation in modern office record practices, redefining how data is stored, accessed, and managed. Mell & Grance (2011) defines cloud computing as "a model for enabling ubiquitous, convenient, on-demand network access to a shared pool of configurable computing resources". This technology allows organizations to control remote servers and internet-based platforms for storing and processing data, eliminating reliance on physical infrastructure. As organizations face increasing demands for efficiency, flexibility and cost-effectiveness, cloud computing offers a dynamic solution by providing access to services such as Infrastructure as a Service, Platform as a Service, and Software as a Service. These services facilitate

flexibility in operational workflows and enable organizations to adapt quickly to technological advancements and market (Hashem et al, 2015).

The adoption of cloud computing has become essential in modern organizational practices, particularly for its role in enhancing productivity and collaboration. Organizations now utilize cloud-based systems to enable flawless communication, real-time data sharing, and integration of diverse workflows. For example, tools such as Google Workspace and Microsoft 365 provide cloud-based applications that support collaboration across geographical locations, fostering efficiency in both private and public sectors (Almaiah et al., 2020). This transformation has proven indispensable during global disruptions such as the COVID-19 pandemic, which accelerated the shift to remote work and underscored the value of cloud computing in maintaining organizational continuity (Olaleye et al., 2021).

Educational institutions, as key drivers of knowledge dissemination and research, have increasingly embraced cloud computing to enhance teaching, learning, and administrative processes. According to Alharthi et al (2017), ascertained that cloud computing supports the academic ecosystem by offering centralized platforms for resource sharing, such as Learning Management Systems (LMS) like Moodle, Blackboard, and Google Classroom. These systems allow students and faculty members to access academic materials, submit assignments, and engage in virtual discussions from any location, thereby promoting flexibility and inclusivity in education. Moreover, cloud-based technologies are integral to online education, enabling institutions to deliver courses to students across the globe, thereby extending the reach of education beyond traditional classroom boundaries.

In the Nigerian context, cloud computing is steadily gaining grip as educational institutions strive to overcome infrastructural challenges. Olaleye et al (2021) noted that many Nigerian universities are using cloud-based systems to improve data management and simplify administrative tasks, for instance, student registration, financial record-keeping, and examination processing are increasingly handled through cloud platforms, reducing the reliance on manual processes and minimizing errors. This transformation not only improves operational efficiency but also aligns with global best practices, positioning Nigerian institutions to compete on an international level.

The role of cloud computing in office management within educational institutions cannot be overstated. Administrative functions, such as payroll processing, human resource management, and document archiving, have traditionally relied on manual, paper-based systems. However, with the advent of cloud technologies, these functions have transitioned to digital platforms that enable faster, more accurate, and more transparent workflows (Subashini& Kavitha, 2011). By providing a centralized repository for institutional data, cloud computing ensures that administrative staff can access up-to-date information in real-time, facilitating better decision-making and enhancing accountability.

Despite its numerous benefits, the integration of cloud computing into educational institutions and office management presents challenges related to confidentiality and ethical practices. Educational

institutions, particularly those in Nigeria, handle vast amounts of sensitive information, including student records, financial data, and research outputs. The migration of this data to cloud-based systems exposes it to potential risks, such as unauthorized access, data breaches, and misuse by external vendors (Hashem et al, 2015). Ensuring the confidentiality of such data requires robust security measures, including encryption, access controls, and compliance with data protection regulations such as Nigeria's Data Protection Regulation (NDPR).Furthermore, ethical considerations arise in the use of cloud computing, particularly in relation to accountability and digital behaviour. Office staff and administrators must adhere to ethical standards when managing institutional data, ensuring that actions such as data sharing, access privileges, and record updates are conducted transparently and responsibly (Almaiah et al, 2020). This is particularly important in educational institutions where ethical lapses can undermine institutional integrity and erode trust among stakeholders.

Adeyemi Federal University of Education, Ondo, exemplifies the opportunities and challenges associated with cloud computing adoption in Nigerian higher education. As a leading institution, the university is positioned to influence cloud technologies to improve academic delivery and administrative efficiency. However, the transition to cloud-based systems necessitates a comprehensive understanding of its implications for confidentiality and ethical practices. Issues such as the adequacy of cyber security infrastructure, staff training on ethical data management, and compliance with relevant laws and standards are critical to ensuring the successful integration of cloud computing into the university's operations.

Statement of the Problem

The adoption of cloud computing in educational institutions has introduced significant advantages, including enhanced collaboration, operational efficiency, and access to cutting-edge technological tools. However, its integration also presents considerable challenges, particularly concerning confidentiality and ethical office practices. Educational institutions like Adeyemi Federal University of Education, Ondo, manage vast amounts of sensitive data, including student records, financial information, and institutional research outputs. The migration of such data to cloud-based systems exposes it to potential risks such as data breaches, unauthorized access, and misuse by third parties.

Additionally, the absence of a robust cybersecurity infrastructure, inadequate staff training on data management, and limited adherence to ethical standards in handling digital resources further exacerbate these risks. Ethical issues, including accountability, transparency, and responsible usage of institutional data, remain critical concerns. Without adequate safeguards, the integration of cloud computing could compromise data confidentiality, erode trust among stakeholders, and undermine the integrity of institutional operations. This underscores the need for an in-depth examination of the influence of cloud computing on confidentiality and ethical office practices within the university.

Purpose of the Study

The main purpose of this study is to examine the influence of cloud computing on ethical office practices at Adeyemi Federal University of Education, Ondo, the study specifically examined to:

1. Investigate the extent of cloud computing adoption at Adeyemi Federal University of Education, Ondo;
2. evaluate the level at which data security and privacy is being managed by staff and administrators in Adeyemi Federal University of Education, Ondo;
3. Assess the impact of cloud computing on the confidentiality of sensitive institutional data.
4. Identify the ethical challenges associated with the use of cloud computing in office practices within the university; and
5. Evaluate the effectiveness of existing security measures put in place to safeguarding cloud computing practices in the university.

Research Questions
The following research questions were raised to guide the study
1. To what extent is the level of adoption of cloud computing at Adeyemi Federal University of Education, Ondo?
2. How do staff and administrators at Adeyemi Federal University of Education, Ondo, manage data security and privacy when using cloud-based systems?
3. What are the perceived impacts of cloud computing on the confidentiality of institutional data at Adeyemi Federal University of Education, Ondo?
4. What are the ethical challenges faced by Adeyemi Federal University of Education, Ondo in the use and management of cloud computing?
5. How effective are measures put in place to safeguard sensitive institutional data in cloud at Adeyemi Federal University of Education, Ondo?

Methodology
Descriptive survey research design was used for this study. This design is particularly suited for assessing the perceptions, experiences, and practices of the university's staff and administrators regarding cloud computing, confidentiality, and ethics in data management. The population for this study comprises 1,320 staff members and administrators of Adeyemi Federal University of Education, Ondo (Adeyemi Federal University of Education, Division of Personnel, 2025) who are directly involved in office management tasks and the use of cloud-based systems. This includes academic staff, administrative personnel such as Head of Department and IT staff who use cloud computing tools for academic, administrative, and office management functions.

A proportionate sampling technique will be used to ensure that the sample represents different departments, units, division, and directorate as well as functional areas within the university. Total sample of 132 respondents were selected as sample size of the study. This sample size is considered sufficient for providing reliable insights into the study's research questions. Researcher self-structured questionnaire tagged: Cloud Computing and Ethical Office Practices (CCEOP) was used for data collection. The questionnaire consist of 2 (two) parts, section A was on the demographic variables relevant to the study while section B was on the research items. Responses to the questionnaire followed the 4-point rating scale type of Strongly Agree (SA) = 4, Agree (A) =3, Disagree (D) = 2 and Strongly Disagree (SD) = 1 to measure the respondents' level of agreement.

Only Research question one was based on responses of Very Highly Extent (VHE) = 4, High Extent (HE) =3, Low Extent (LE) =2 and No Extent (NE) = 1 to measure the respondents' level of agreement. Two research specialists validated the study instrument, examining its face and content validity. Reliability coefficient of 0.80 was reported for the instrument, this implied that the instrument was reliable towards achieving objectives of the study. The researchers with the help of two trained research assistants distributed the questionnaire to the respondents as well as collect it back immediately after completion. Retrieval rate was 100 percent. Means and standard deviation was used to analysis the 20 items research questions raise with 2.50 benchmark.

Research Question 1: To what extent is the level of adoption of cloud computing at Adeyemi Federal University of Education, Ondo?

Table 1: Responses mean rating and standard deviation on the level of adoption of cloud computing at Adeyemi Federal University of Education, Ondo.   N = 132

S/N	Items	X	SD	Remark
1.	To what extent are you aware of cloud computing services?	3.64	0.91	Very High Extent
2.	To what extent do you use cloud computing service in your academic/ work activities?	3.06	1.06	High Extent
3.	To what extent do you think cloud computing enhances productivity and efficiency in the university?	3.17	1.04	High Extent
4.	To what extent do you rely on cloud computing for storing and sharing documents	2.87	1.21	High Extent

Sources: Field work 2025

Data in table 1 shows that four items indicates that item 1 is in the boundary of 3.5 – 4.49 , implying a very high extent, item (2,3, and 4) indicate a high extent of cloud computing adoption, with mean scores of 3.06, 3.17 and 2.87 respectively. This implies that the staff members of Adeyemi Federal University of Education, Ondo are aware of and have adopted cloud computing in carrying out their work activities.

Research Question 2: How do staff and administrators at Adeyemi Federal University of Education, Ondo, manage data security and privacy when using cloud-based systems?

Table 2: Responses on how staff and administrators at Adeyemi Federal University of Education, Ondo, manage data security and privacy when using cloud-based systems

S/N	Question Items	X	SD	Remark
5.	Staff and administrators at Adeyemi Federal University of Education have received adequate training on cloud data security and privacy.	3.07	1.05	Agree
6.	Staffs follow strict guidelines and protocols to ensure data security and privacy when using cloud-based systems.	2.96	1.08	Agree
7.	Cloud computing platforms used at Adeyemi Federal University of Education are regularly monitored for security breaches or threats.	2.97	1.01	Agree
8.	Data privacy and security measures in the cloud are effectively enforced by the administration at Adeyemi Federal University of Education.	3.11	0.95	Agree

Source: Field work 2025

The results in Table 2 reveal that item 5, 6, 7, and 8 fall within the score range of 2.5 to 3.49. this indicates that staff and administrators at Adeyemi Federal University of Education, Ondo, generally adhere to security protocols when using cloud-based systems to protect the university's data. However, the moderate range of these cores suggests that while security measures are being followed, there may still be room for improvement in adherence and implementation.

Research Question 3: What are the perceived impacts of cloud computing on the confidentiality of institutional data at Adeyemi Federal University of Education, Ondo?

Table 3: Responses on perceived impacts of cloud computing on the confidentiality of institutional data at Adeyemi Federal University of Education, Ondo

S/N	Items	X	SD	Remark
9.	The use of cloud computing has significantly improved the confidentiality of institutional data at Adeyemi Federal University of Education.	3.23	0.78	Agree
10.	Cloud-based systems at Adeyemi Federal University of Education provide sufficient security measures to protect sensitive institutional data.	2.90	0.89	Agree
11.	Staff at Adeyemi Federal University of Education are confident in the ability of cloud computing to protect data confidentiality.	2.87	0.64	Agree
12.	The implementation of cloud computing has decreased the risk of unauthorized access to institutional data at Adeyemi Federal University of Education.	2.97	1.03	Agree

Source: Field work 2025

The research responses indicate that respondents generally agree that cloud computing has had a positive impact on data security. The highest mean score 3.23 suggests strong agreement that cloud computing has enhanced data confidentiality, with relatively low variability in responses. This implies that most respondents acknowledge the role of cloud technology in securing institutional data, reducing unauthorized access, and improving overall information protection.

Research Question 4: What are the ethical challenges faced by Adeyemi Federal University of Education, Ondo in the use and management of cloud computing?

Table 4: Responses on ethical challenges faced by Adeyemi Federal University of Education, Ondo, in the use and management of cloud computing in office management processes

S/N	Question items	X	SD	Remark
13.	Adeyemi Federal University of Education faces significant challenges in ensuring data security when using cloud-based office management systems.	3.06	1.09	Agree
14.	The lack of sufficient IT infrastructure poses a challenge to the effective use of cloud computing for office management at Adeyemi Federal University of Education.	3.24	1.12	Agree
15.	Staff resistance to adopting cloud computing for office management processes is a major challenge at Adeyemi Federal University of Education.	3.07	1.07	Agree
16.	There are significant challenges related to maintaining the confidentiality of sensitive data in cloud-based office management systems at Adeyemi Federal University of Education.	2.97	1.28	Agree

Source: Field work 2025

Table 4 reveals that the responses to items 12, 14, 15, and 16, with mean scores of 3.06, 3.24, 3.05, and 2.97, respectively, indicate that the management of cloud computing in office processes faces several challenges. The most significant challenge, with the highest means score of 3.24, is insufficient IT infrastructure. Other notable challenge includes staff resistance to adopting cloud computing for office management and difficulties in maintaining the confidentiality of sensitive data in cloud-based office systems.

Research Question 5: How effective are measures put in place to safeguard sensitive institutional data in cloud computing at Adeyemi Federal University of Education, Ondo?

Table 5: Responses on the effectiveness of measures put in place to safeguard sensitive institutional data in cloud computing at Adeyemi Federal University of Education, Ondo.

S/N	Question items	X	SD	Remark
17.	The cybersecurity measures in place to safeguard data in the cloud at Adeyemi Federal University of Education are highly effective.	2.89	1.10	Agree
18.	Adeyemi Federal University of Education has implemented sufficient encryption methods to protect sensitive data stored in the cloud.	2.84	1.24	Agree
19.	Data access controls and user authentication procedures are effectively used to ensure the security of institutional data in the cloud at Adeyemi Federal University of Education.	3.16	1.27	Agree
20.	Regular audits of cloud-based systems help to identify and mitigate potential data security risks at Adeyemi Federal University of Education.	3.09	1.03	Agree

Source: Field work 2025

Table 5 shows that the mean scores for items 17, 18, 19, and 20 range between 2.50 and 3.16, indicating that respondents strongly agreed on the effectiveness of data access controls, user authentication, encryption, and overall cybersecurity strategies. These responses reveal that strengthening encryption practices and cybersecurity strategies enhances data protection, thereby improving the confidence of staff and administrators in securing cloud-based data within the institution.

Discussion of Findings
The findings of this research indicate that cloud computing has positively impacted data security at Adeyemi Federal University of Education, particularly in enhancing data confidentiality and reducing unauthorized access. Respondents generally agree that cloud-based systems provide adequate security measures. This findings of this study concurs with those of Alharthi, Yahya, & Walters (2017), which reported that the adoption of cloud computing may help universities to focus more on their main goals, which are related to teaching and learning with minimum expenditure.

In addition to the improvements in data security, the study reveals that security and privacy measures are in place and actively enforced at the university. Most staff and administrators believe they have received adequate training on cloud data security, although some may require further reinforcement. Moreover, there is general agreement that security guidelines are followed and cloud platforms are monitored for breaches. However, variations in responses indicate that compliance with security protocols is not entirely consistent, and monitoring efforts may not always be perceived as sufficient.

Despite these positive trends, the research highlights significant ethical challenges faced by Adeyemi Federal University of Education, Ondo, in the use and management of cloud computing in office management processes. One of the most pressing issues is the lack of sufficient IT infrastructure, which suggests that the university may not have the necessary resources to fully optimize cloud technology. Additionally, staff resistance to cloud adoption is a notable challenge, likely due to technical knowledge gaps, fear of change, or a preference for traditional office management methods.

Overall, while cloud computing has contributed to enhancing data security at Adeyemi Federal University of Education, challenges remain in IT infrastructure, cybersecurity confidence, encryption practices, and staff adoption. To fully maximize the benefits of cloud computing, the university must strengthen encryption methods, invest in IT upgrades, and enhance monitoring efforts. By addressing these concerns, the institution can bolster cloud security, improve staff compliance, and ensure more effective use of cloud-based office management systems.

Conclusion

The research findings out that the respondents generally acknowledge the benefits of cloud-based security measures, but the varying levels of confidence in their effectiveness suggest that some concerns persist. The presence of security and privacy measures, along with administrative enforcement of security policies, indicates a proactive approach to safeguarding institutional data. However, inconsistencies in staff compliance, security monitoring, and adherence to guidelines highlight the need for further reinforcement.

Despite the positive impact of cloud computing, the research identifies ethical challenges that hinder its full potential. The lack of adequate IT infrastructure emerges as a major limitation, restricting the university's ability to optimize cloud-based office management systems. Additionally, staff resistance to cloud adoption and concerns over data confidentiality indicate a need for improved training programs, change management strategies, and awareness initiatives. Another area of concern is the effectiveness of cyber security measures, particularly encryption methods, which respondents perceive as insufficient for fully protecting sensitive data. While data access controls and authentication procedures are relatively effective, regular audits and risk mitigation strategies require further refinement.

To fully leverage the advantages of cloud computing, the university must invest in IT infrastructure, enhance cyber security protocols, strengthen encryption methods, and promote continuous staff training. Addressing these areas will not only improve overall data security but also increase staff confidence in cloud-based systems and encourage wider adoption. With targeted improvements, Adeyemi Federal University of Education can maximize the benefits of cloud computing, ensuring a more secure, efficient, and technologically advanced office management system.

Recommendations

Based on the research findings, the following recommendations are proposed to enhance the effectiveness of cloud computing and data security at Adeyemi Federal University of Education:

1. The university should promote the benefits of cloud-based systems through workshops, seminars, and success stories. Ensuring that staff understand the advantages of cloud computing will encourage greater adoption

2. On the ethical challenges in cloud computing management, the university should allocate resources to upgrade its IT infrastructure, including cloud storage, network security, and server capacity. Improved infrastructure will enhance system performance, security, and overall efficiency in cloud-based office management.

2. To address staff resistance to cloud computing, the university should adopt structured change management strategies, including engaging staff in decision-making processes, providing incentives for cloud adoption, and demonstrating the benefits of cloud-based systems.

3. There should be implementation of robust cybersecurity measures such as encryption, multifactor authentication, and regular security audits.

4. The university should develop strict access control policies to prevent unauthorized data access and ensure compliance with data protection regulations.

5. The university should deploy real-time monitoring tools to detect and respond to security threats effectively. Establishing a clear incident response plan will ensure quick action in mitigating risks when breaches occur.

References

Almaiah, M. A., Al-Khasawneh, A., & Althunibat, A. (2020). Exploring the critical challenges and factors influencing the implementation of e-learning in higher education using the interactive qualitative assessment framework. *Computers in Human Behavior, 106*, 106227.

Alharthi, A., Yahya, F., Walters, R., & Wills, G. (2017). An overview of cloud services adoption challenges in higher education institutions. *Proceedings of the International Conference on Information Society (i-Society)*, 152-157.

Hashem, I. A. T., Yaqoob, I., Anuar, N. B., Mokhtar, S., Gani, A., & Khan, S. U. (2015). The rise of "big data" on cloud computing: Review and open research issues. *Information Systems, 47(2)*, 98-115.

Mell, P., & Grance, T. (2011). The NIST definition of cloud computing. National Institute of Standards and Technology.

Olaleye, S. A., Oyelere, S. S., & Masek, M. (2021). Cloud computing adoption and its impact on Nigerian educational system: A systematic review. *Journal of Information Systems Education, 32*(1), 23-35.

Subashini, S., & Kavitha, V. (2011). A survey on security issues in service delivery models of cloud computing. *Journal of Network and Computer Applications, 34*(1), 1-11.