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## CLOUD-BASED SOLUTIONS AND ADMINISTRATIVE EFFECTIVENESS OF SECRETARIES AND OFFICE MANAGERS IN TELECOMMUNICATION FIRMS IN IMO STATE, NIGERIA

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### ABSTRACT

*The adoption of cloud-based solutions has transformed organizational workflows, particularly in administrative contexts where timely communication, accurate record management, and coordinated task execution are critical. This study examined the relationship and influence of cloud-based solutions on the administrative effectiveness of secretaries and office managers in the three leading telecommunication firms in Imo State, Nigeria: MTN, Glo, and Airtel. Employing a descriptive survey design, data were collected from 150 administrative personnel using a structured questionnaire. Descriptive statistics were used to summarize the usage of cloud-based tools, while Pearson correlation and regression analyses were conducted to test the relationship and predictive influence of cloud adoption on administrative effectiveness. The findings revealed that Google Workspace and Microsoft 365 are the most widely used cloud solutions, and that cloud adoption has a strong positive relationship with administrative effectiveness ( $r = 0.682, p < 0.05$ ). Furthermore, cloud-based solutions significantly predict administrative effectiveness, explaining 46.5% of the variance in administrative performance ( $\beta = 0.732, p < 0.05$ ). The study concludes that cloud technologies are critical enablers of efficiency in administrative operations and recommends that telecommunication firms invest in robust cloud infrastructure, structured training, and standardized cloud adoption policies. These findings provide empirical evidence supporting the strategic integration of cloud-based solutions to enhance administrative performance in digitally intensive sectors.*

**KEYWORDS:** *Cloud-based solutions, Administrative effectiveness, Secretaries, Office managers, Telecommunication organizations.*

## 1.1 INTRODUCTION

The rapid evolution of information technology has transformed the ways in which organizations handle administrative tasks. One of the most significant trends in this transformation is the adoption of cloud-based solutions, which allow users to store, access, and manage data over the internet rather than on local hardware. Cloud solutions including Software as a Service (SaaS), Platform as a Service (PaaS), and cloud storage platforms offer greater flexibility, scalability, and collaboration capabilities compared to traditional on-premise systems (Lawan et al., 2021). Research shows that cloud technologies can enhance operational efficiency, reduce infrastructure costs, and improve data accessibility in organizational environments (Lawan et al., 2021).

In today's digital workplaces, administrative effectiveness is a critical performance outcome for office professionals such as secretaries and office managers. Administrative effectiveness refers to the ability to organize, coordinate, and execute office duties including communication, record keeping, scheduling, and information dissemination in a timely and accurate manner. Increasingly, this effectiveness depends not just on individual skills but also on the technological tools that support daily work activities (Adeleke et al., 2020). Cloud-based solutions, by enabling real-time collaboration and remote access to shared information, have been linked to improvements in efficiency and task coordination in various organizational contexts (Adeleke et al., 2020).

Empirical studies from different sectors suggest positive outcomes associated with cloud adoption. For example, research into cloud computing adoption and its impact on small and medium-sized enterprises (SMEs) found that cloud technologies significantly improve operational performance and efficiency, with cloud adoption serving as a key driver for competitive advantage and improved productivity (Mkhize et al., 2025). Similarly, studies in Nigerian educational settings have documented the adoption of cloud tools to support administrative functions, indicating that cloud platforms can enhance access to critical administrative data and processes (Bello & Imoru, 2024). While these studies highlight general organizational benefits, they underscore the potential value of cloud solutions in supporting administrative roles that rely heavily on information coordination and responsiveness.

Within the telecommunication sector where information flow, communication, and coordination are central to organizational success the role of cloud technologies in facilitating administrative functions is particularly significant. Telecommunication firms operate in environments requiring rapid exchange of information, interdepartmental collaboration, and dynamic scheduling. Secretaries and office managers in such settings are often tasked with ensuring that communication flows smoothly, records are accurately maintained, and organizational processes are coordinated efficiently. Cloud-based solutions can enhance these administrative tasks by enabling secure, centralized storage of documents, real-time updates, and easy retrieval of information across departments, thereby improving overall administrative effectiveness.

Despite the documented benefits of cloud adoption for organizational performance in sectors such as SMEs and education, there remains a research gap regarding its specific impact on the administrative effectiveness of secretaries and office managers, particularly in telecommunication organizations. Much of the existing literature focuses broadly on technological adoption or general performance outcomes rather than on frontline administrative roles. This gap is especially evident in emerging economies, where organizational resources and technological infrastructure may vary significantly across industries. Therefore, an empirical investigation into how cloud-based solutions influence administrative effectiveness in telecommunication contexts is both timely and necessary.

This study seeks to fill this gap by examining the relationship between cloud-based solutions and the administrative effectiveness of secretaries and office managers in telecommunication organizations. Findings from this research are expected to contribute to theory by expanding understanding of technology-performance linkages in administrative work, and to practice by providing evidence-based insights that can inform organizational policies on cloud adoption, staff training, and digital workplace strategy.

## **1.2 Statement of the Problem**

Despite the increasing adoption of cloud-based technologies across industries as a means to improve operational processes and performance, there remains a critical gap in understanding how these technologies influence the administrative functions performed by key office professionals such as secretaries and office managers, particularly within telecommunication organizations. Cloud computing has been identified as a disruptive innovation that enhances flexibility, data accessibility, and collaboration across organizational units, enabling employees to access shared resources and perform tasks remotely (Lawan, Oduoza, &

Buckley, 2021; Ifawoye, Ajayi, Chukwuemeka, & Esther, 2024). However, the extent to which this technological innovation improves the effectiveness of administrative roles characterized by information coordination, communication, record management, and scheduling remains under-researched.

Empirical studies in related sectors, such as university administration and hotel management, suggest that cloud technology adoption can enhance office routines and communication outcomes (Ikpesu & Kayii, 2023; Otamiri & Eke, 2022). For example, limited research in Nigerian academic settings has shown uneven utilization of cloud services among secretaries, with some aspects of cloud technology under-utilized despite their potential to enhance office administration (Ikpesu & Kayii, 2023). Similarly, studies examining office managers' use of cloud computing services documented positive associations with communication success outcomes such as timely information circulation and effective records management but these investigations were confined to specific industries like hospitality (Otamiri & Eke, 2022). These findings suggest that while cloud solutions can enhance administrative processes, contextual and role-specific evidence remains sparse, especially within telecommunication firms where administrative complexity and digital dependencies are high.

Furthermore, the existing literature largely focuses on cloud adoption from a technological or organizational perspective, emphasizing factors such as readiness, infrastructure, or adoption determinants (Lawan et al., 2021; Ifawoye et al., 2024). There is comparatively little empirical investigation into the actual performance outcomes for administrative professionals who are not primarily IT specialists but whose effectiveness directly influences organizational workflow, information flow, and decision-making processes. In many developing contexts, including Nigeria, studies have noted that administrative personnel often lack adequate training, exposure, or institutional support to maximize the benefits of digital tools (e.g., cloud platforms), resulting in sub-optimal workflow outcomes (Adebayo & Opadeji, 2020; Ikpesu & Kayii, 2023). This gap is particularly significant in telecommunication organizations, which are inherently information-intensive and where operational efficiency depends on seamless communication and administrative coordination.

Without clear empirical evidence examining the relationship between cloud-based solutions and administrative effectiveness among secretaries and office managers, organizational decision-makers remain unable to design targeted interventions (such as training programs, support systems, or technology deployment strategies) to optimize administrative performance in digital work environments. This research, therefore, seeks to address this gap by investigating how cloud-based solutions influence the administrative effectiveness of

secretaries and office managers in telecommunication organizations offering insights that can inform practice, policy, and further research.

### **1.3 Objectives of the Study**

The study examined the relationship and influence of cloud-based solutions on the administrative effectiveness of secretaries and office managers in the three leading telecommunication firms in Imo State, Nigeria. The study is guided by the following objectives:

1. To examine and identify various cloud-based solutions that can be explored by secretaries and office managers in telecommunication organizations.
2. To ascertain the relationship between cloud-based solutions and the administrative effectiveness of secretaries and office managers.
3. To determine the influence of cloud-based solutions on the administrative effectiveness of secretaries and office managers.

### **1.4 Research Questions**

In line with the objectives, the following research questions guided the study:

1. What are the various cloud-based solutions that can be explored by secretaries and office managers in telecommunication organizations?
2. What is the relationship between cloud-based solutions and the administrative effectiveness of secretaries and office managers?
3. To what extent do cloud-based solutions influence the administrative effectiveness of secretaries and office managers?

### **1.5 Hypotheses**

The study formulated the following hypotheses, stated in the null form for statistical testing:

**H<sub>01</sub>:** There is no significant relationship between cloud-based solutions and the administrative effectiveness of secretaries and office managers in telecommunication organizations.

**H<sub>02</sub>:** Cloud-based solutions do not significantly influence the administrative effectiveness of secretaries and office managers in telecommunication organizations.

## **2.0 Literature Review**

Cloud-based solutions represent a class of digital technologies that enable organizations to deliver computing services—including storage, software, and platforms over the Internet rather than through on-site infrastructure (Ifawoye, Ajayi, Chukwemeka, & Esther, 2024).

This paradigm shift in information technology has redefined how work is coordinated, data is stored and accessed, and collaboration is facilitated across organizational units. Specifically, cloud computing services allow for real-time data access, synchronous editing of documents, and seamless information sharing, creating an environment conducive to efficient administrative workflow (Preprints.org, 2025). The integration of cloud platforms into office routines has implications for administrative effectiveness, an outcome encompassing timely communication, accurate record management, and coordinated task execution (Otamiri & Eke, 2022).

Empirical research on organizational performance has demonstrated that cloud adoption generally yields positive outcomes across multiple performance dimensions. For example, Chen, Guo, and Shangguan's (2022) empirical investigation into cloud computing adoption among listed firms found significant positive impacts on organizational performance metrics, including operational efficiency and profitability, underscoring the broad performance value of cloud solutions. Similarly, systematic reviews of cloud technology adoption reveal that firms leveraging cloud services tend to experience enhanced operational agility, improved access to information, and productivity gains (Donat et al., 2025). These benefits support the rationale for investigating cloud technologies within specific administrative roles, as such roles depend heavily on information flow and accessibility.

Within the administrative domain, research conducted in Nigerian service sectors provides evidence that cloud-related technologies can enhance operational effectiveness in administrative contexts. A study of microfinance institutions in Bayelsa State revealed significant positive correlations between cloud computing and administrative efficiency, indicating that the adoption of digital storage and cloud systems contributes to smoother administrative operations (Odo & Ekeins, 2025). This finding suggests that cloud platforms support critical office functions such as document retrieval, scheduling, and coordination by reducing delays associated with traditional, paper-based systems. Although this research is not specific to telecommunication firms, it highlights how cloud technology can improve administrative work outcomes, strengthening the theoretical linkage between cloud solutions and effectiveness.

More targeted evidence comes from studies examining cloud systems in relation to specific administrative outcomes. For instance, Otamiri and Eke's (2022) investigation into cloud computing services and communication outcomes among office managers in hotels reported that cloud adoption significantly enhanced communication success namely timely information circulation, effective decision-making, and record management. These elements

are key indicators of administrative effectiveness, suggesting that cloud technologies facilitate core administrative functions by improving message flow and coordination. Importantly, this study demonstrates that when cloud platforms are integrated into daily routines, office managers are better equipped to fulfill complex administrative tasks efficiently.

Despite these advances, the literature also indicates gaps that justify further exploration. Research on cloud adoption commonly focuses on technological adoption processes, determinants of cloud uptake, or broad organizational performance, rather than role-specific administrative effectiveness among office professionals such as secretaries and office managers (Ifawoye et al., 2024). Although scholars have documented the general performance effects of cloud technologies, comparatively few studies have explicitly linked cloud use to frontline administrative performance metrics within industry contexts characterized by high information intensity, such as telecommunications. This gap is noteworthy given that administrative effectiveness in such environments is inherently tied to rapid information exchange and cross-departmental coordination—conditions that cloud solutions are designed to support.

A nascent body of research also identifies contextual barriers to realizing the full benefits of cloud technologies. For instance, evidence from studies on cloud adoption in professional office environments suggests that training and digital competencies remain significant predictors of effective utilization; when administrative personnel lack requisite cloud skills, the potential performance gains from cloud adoption may not be fully realized (Oguejiofor & Okoronkwo, 2025). This insight underscores the importance of considering human and organizational factors alongside technological capabilities when investigating administrative outcomes.

Overall, empirical evidence supports the theoretical linkage between cloud-based solutions and organizational performance, and emerging studies indicate that these effects extend into administrative domain outcomes (e.g., communication, record management). However, the specific relationship between cloud adoption and administrative effectiveness among secretaries and office managers in telecommunication organizations remains under-researched, indicating a clear gap that the present study seeks to address.

### **3.0 METHODOLOGY**

This study adopted a descriptive survey research design, which is appropriate for collecting data on current practices, perceptions, and relationships between variables in natural

organizational settings (Creswell & Creswell, 2018). The population comprised secretaries and office managers employed in the three leading telecommunication firms in Imo State: MTN Nigeria, Glo, and Airtel. These firms were selected due to their substantial administrative workforce, widespread adoption of digital technologies, and central role in the telecommunication sector in the region. A preliminary survey of human resources records revealed a total study population of 260 administrative personnel. The study used Yamane's (1967) formula for sample size determination at a 95% confidence level and 5% margin of error: A proportionate stratified sampling technique was adopted to ensure each firm's administrative staff was represented relative to its population. The sample distribution was as follows: MTN 61, Glo 43, Airtel 54, which brings the total sample to 158 respondents.

Data were collected using a structured questionnaire developed by the researcher. The instrument comprised two sections: Section A: Demographic information (gender and years of experience); Section B: Questions related to cloud-based solutions and administrative effectiveness measured on a five-point Likert scale ranging from 1 = Strongly Disagree to 5 = Strongly Agree. The questionnaire was validated through face and content validation by three experts in office technology and information management. A pilot test was conducted with 20 administrative staff from a telecommunication firm outside Imo State. Reliability was assessed using Cronbach's alpha coefficient, which yielded  $\alpha = 0.86$  for cloud-based solutions items and  $\alpha = 0.88$  for administrative effectiveness items. Data were analyzed using descriptive and inferential statistics. Descriptive statistics (means, and standard deviations) were used to summarize responses on cloud-based solutions. Inferential statistics were used to test relationships and influences: Pearson Product-Moment Correlation (PPMC) for assessing the relationship between cloud-based solutions and administrative effectiveness. Simple Linear Regression Analysis to determine the influence of cloud-based solutions on administrative effectiveness. All analyses were performed using SPSS Version 28, with results interpreted at a 5% significance level ( $\alpha = 0.05$ ).

## **4.0 RESULTS**

This chapter presents the results of the data collected from secretaries and office managers in MTN, Glo, and Airtel in Imo State. The analysis is structured around the specific objectives of the study:

### **4.1 Descriptive Analysis of Cloud-Based Solutions**

Respondents were asked to rate the extent to which they use various cloud-based solutions in their daily administrative functions (1 = Not at all, 5 = Very high).

Cloud-Based Solution	Mean	Std. Dev	Remark
Google Workspace (Docs, Sheets, Drive)	4.32	0.71	High Usage
Microsoft 365 (Word, Excel, Teams)	4.18	0.76	High Usage
Cloud Storage (Dropbox, OneDrive)	3.87	0.82	Moderate-High Usage
Collaboration Platforms (Slack, Trello)	3.45	0.89	Moderate Usage

The findings indicate that Google Workspace and Microsoft 365 are the most utilized cloud solutions, while specialized collaboration tools like Slack or Trello are moderately used. Secretaries and office managers rely heavily on cloud-based document management, storage, and communication tools to perform administrative tasks efficiently.

#### 4.2 Descriptive Analysis of Administrative Effectiveness

Administrative Effectiveness Indicators	Mean	Std. Dev	Remark
Timely Communication	4.21	0.74	High
Accurate Record Keeping	4.15	0.77	High
Task Coordination	4.05	0.79	High
Overall Administrative Performance	4.12	0.75	High

Respondents generally perceive high administrative effectiveness, with timeliness and accuracy of tasks being the most positively rated. This suggests that cloud-based solutions may contribute positively to administrative efficiency.

#### 4.3 Relationship between Cloud-Based Solutions and Administrative Effectiveness

**Hypothesis H<sub>01</sub>:** There is no significant relationship between cloud-based solutions and administrative effectiveness.

Variables	N	r	p-value
Cloud-Based Solutions vs Administrative Effectiveness	150	0.682**	0.000

The Pearson correlation coefficient ( $r = 0.682$ ,  $p < 0.05$ ) indicates a strong positive relationship between cloud-based solutions and administrative effectiveness. This implies that increased adoption of cloud solutions is associated with higher administrative performance among secretaries and office managers.

#### 4.4: Influence of Cloud-Based Solutions on Administrative Effectiveness

**Hypothesis H<sub>02</sub>:** Cloud-based solutions do not significantly influence administrative effectiveness.

Model	R	R <sup>2</sup>	Adjusted R <sup>2</sup>	F-value	p-value
Regression Analysis	0.682	0.465	0.461	127.84	0.000
Coefficients	B	Std. Error	t	p-value	
Constant	1.012	0.204	4.96	0.000	
Cloud-Based Solutions	0.732	0.065	11.30	0.000	

The regression results indicate that cloud-based solutions significantly influence administrative effectiveness ( $\beta = 0.732$ ,  $p < 0.05$ ), explaining 46.5% of the variance in administrative effectiveness. This confirms that cloud adoption is a key predictor of administrative performance among secretaries and office managers.

#### 4.5 DISCUSSION OF RESULTS

The findings from this study provide significant insights into the role of cloud-based solutions in shaping administrative effectiveness among secretaries and office managers in telecommunication firms (MTN, Glo, Airtel) in Imo State.

Descriptive analysis revealed high usage of core cloud-based applications such as Google Workspace and Microsoft 365. These platforms facilitate centralized document storage, real-time collaboration, and seamless communication among administrative personnel. This pattern aligns with extant literature noting that cloud environments enhance accessibility and coordination in organizational settings (Preprints.org, 2025). The moderate use of specialized collaboration tools (e.g., Slack, Trello) suggests that while basic cloud productivity suites are fully integrated into daily tasks, firms may still be developing broader adoption of collaboration-centric platforms.

The strong and statistically significant correlation between cloud-based solutions and administrative effectiveness observed in this study underscores a growing consensus in empirical research. Specifically, cloud services improve communication flows, document accessibility, and timely information sharing—core components of administrative performance (Opara & Damiete, 2022; Elekwachi et al., 2023). For instance, studies in Nigerian organizational contexts found that cloud computing capability significantly improves organizational communication, including information dissemination and coordinated work systems (Elekwachi et al., 2023). Similarly, cloud computing was shown to positively enhance office managers' communication success—timely information circulation,

effective records management, and decision making (Otamiri & Eke, 2022). These findings resonate with the present study's correlation outcomes, indicating that cloud adoption supports key behavioral and task outcomes for administrative staff.

Regression analysis revealed that cloud-based solutions significantly predict administrative effectiveness, explaining a substantial portion of the variance in performance outcomes. This finding supports broader organizational research showing that cloud adoption corresponds with improved operational indicators, especially productivity and process efficiency (Duso, 2025). Even when firm size and contextual variables vary, large and digitally enabled organizations benefit from cloud usage through enhanced IT flexibility, scalability, and remote accessibility—all of which are critical determinants of worker performance (Duso, 2025).

Empirical studies in similar developing contexts have demonstrated that cloud computing adoption is positively related to organizational and administrative outcomes. A survey of firms in Jordan's telecommunications sector found that cloud technology adoption significantly enhances organizational effectiveness, including goal achievement, productivity, and adaptability to work environments (Abu Haniyi et al., 2023). Similarly, research into cloud computing and communication efficiency in Nigerian financial institutions demonstrated that several cloud dimensions correlate significantly with communication outcomes—a core administrative effectiveness dimension (Ayawei, 2024). These empirical patterns reinforce the robustness of this study's findings, showing that cloud solutions have measurable benefits across sectors and organizational types.

From a practical standpoint, the findings suggest that telecommunication firms in Imo State can leverage cloud platforms to streamline administrative workflows, improve documentation accuracy, and enhance inter-departmental coordination. Cloud systems reduce traditional bottlenecks associated with paper-based or siloed information systems, enabling secretaries and office managers to access and share information more efficiently and reliably.

## **5.1 CONCLUSION**

Based on the findings, it can be concluded that cloud-based solutions are essential enablers of administrative effectiveness in contemporary telecommunication organizations. The adoption of cloud technologies positively affects core administrative functions, including timely communication, accurate record keeping, and task coordination. The study establishes that secretaries and office managers who leverage cloud platforms demonstrate higher efficiency and effectiveness in performing administrative responsibilities. Furthermore, the results

underscore the importance of technology adoption in improving organizational outcomes in digitally intensive sectors such as telecommunications. In particular, the integration of cloud-based tools provides administrative personnel with real-time access to information, collaborative capabilities, and streamlined workflow processes—factors that collectively enhance overall administrative performance.

## **5.2 Recommendations**

1. **Institutionalize Cloud Training Programs:** Telecommunication organizations should implement structured and continuous training programs for secretaries and office managers. Training should cover not only core cloud productivity suites (Google Workspace, Microsoft 365) but also advanced collaboration and project management tools.
2. **Develop Strategic Cloud Adoption Policies:** Firms should formulate formal policies and guidelines for cloud usage, specifying standards for document management, collaboration, and security protocols. Policies should also address data governance, confidentiality, and compliance with national regulations.
3. **Invest in Robust Digital Infrastructure:** To maximize the benefits of cloud technologies, telecommunication firms must invest in reliable high-speed internet, secure servers, and scalable cloud subscriptions. Robust infrastructure mitigates disruptions, enhances data accessibility, and supports seamless administrative operations across multiple departments and branch locations.
4. **Implement Monitoring and Performance Evaluation Systems:** Organizations should establish monitoring frameworks that regularly assess the effectiveness of cloud-based solutions in administrative tasks. Key performance indicators could include task completion time, accuracy of records, interdepartmental communication efficiency, and overall productivity.
5. **Encourage Knowledge Sharing and Peer Learning:** Firms should promote a culture of knowledge sharing where experienced administrative staff mentor colleagues in cloud-based workflows and best practices. Peer learning enhances skill diffusion, reduces resistance to technological adoption, and ensures more uniform utilization of digital tools across administrative teams.
6. **Support Research and Innovation in Digital Administration:** Telecommunication organizations should invest in research initiatives that explore emerging cloud technologies and their potential to improve administrative effectiveness. Continuous research ensures that

administrative personnel remain adaptive to technological advancements and can leverage innovations for strategic and operational benefits.

7. Address Digital Literacy and Change Management Challenges: Management should identify and address barriers to effective cloud adoption, such as low digital literacy, resistance to change, or limited exposure to advanced tools. Change management strategies, combined with targeted training, ensure that secretaries and office managers can fully leverage cloud platforms to enhance administrative efficiency.

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