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CLOUD SERVICES AND ORGANIZATIONAL PERFORMANCE OF PRIVATE UNIVERSITIES IN KENYA

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ABSTRACT
Universities are key sources of knowledge and serve as important channels for disseminating information through teaching, training, research, and community engagement. To remain competitive and fulfill their mission and vision, universities need to adopt enabling technologies such as cloud computing. This study aimed to examine how cloud-computing services influence organizational performance, focusing on private universities, with a case study of the Management University of Africa (MUA). The specific objective in the research is to assess the effect of cloud services adoption, the influence of cost efficiency. The research utilized the Resource-Based View (RBV) theory. Descriptive statistics were used to explore the relationships among cloud service adoption and organizational performance, while inferential statistics were applied to draw conclusions and generalizations. The results revealed that both cloud service adoption and cost efficiency had a strong positive influence on performance, with correlation coefficients of 0.929 and 0.934, respectively. The overall model explained approximately 89% of the variation in performance, underscoring cloud computing and cost management as critical drivers of success. The study concludes that private universities can significantly enhance their performance by effectively leveraging cloud services and managing costs efficiently, while also optimizing the use of time, personnel, and other resources. Recommendations include improving system integration, involving more staff in budgeting processes, and using data-driven approaches for decision-making. Future research should expand the scope to include more universities and consider qualitative methods such as interviews or focus groups for deeper insights.
Keywords: *Cloud Services, Resource Utilization, Organizational Performance, Resource Based Theory, Kenya*

INTRODUCTION
Globally, a key advantage of cloud services for private universities is their ability to function without physical constraints. In today's era of rapid technological progress and expanding global connectivity, cloud computing has emerged as a

critical enabler for enhancing the organizational performance of private universities worldwide. This transformational shift towards cloud-based solutions has not only revolutionized the way these institutions operate but has also redefined the landscape of higher education on a global scale. In the face of the 2019 corona virus (COVID-19) pandemic, private universities swiftly turned to cloud computing as a strategic tool to reinforce their organizational performance (Tawfik & Elmaasrawy, 2023). A report by Grand View Research (2023) highlights a projection of the market value of cloud computing by companies, showing that it will expand by a massive rate progression of 14.1% per year from 2020 to the year 2030. According to the Grand View Research report, the market is divided into several regions—Europe, Asia Pacific, the Middle East, North America, Africa, and Latin America—which are further classified into individual countries (Wulf et al., 2021).

Cloud services in Africa are on the rise, driven by both global cloud providers and local players. The African perspective on cloud computing recognizes the technology's potential to revolutionize education provision, and this trend is contributing to the digital transformation of businesses and educational services across the continent, aside from the hurdles that need to be solved to reap the full potential benefits (Al-Mutawa & Al Mubarak, 2023). In a region where access to quality education has historically been limited, cloud technologies offer a lifeline. Cloud computing technologies enable universities to reach remote and underserved reserve communities, breaking down geographical barriers. A student in a remote village can now access the same educational resources as their urban counterparts, fostering inclusivity. Tawfik & Elmaasrawy (2023) regard cloud computing is the highest adopted technology in the wake of and after the COVID-19 pandemic. Despite the numerous benefits of cloud computing, its adoption is hindered by several challenges, the most common being security concerns, business and client trust issues, and legal and compliance requirements.

Kenyan organizations are aligning themselves strategically to benefit from the pros of cloud computing advancements, among which are cost savings, flexibility, upgradability, and convenience, which eventually lead to business efficiency and effectiveness. Private universities in Kenya have harnessed the power of the cloud for storing and managing large quantities of information with unequaled capability (Muthaura & Kinyua, 2021). These institutions, once reliant on traditional methods of data storage and management, have now embraced cloud computing. The adoption of cloud computing in Kenyan private universities allows universities to focus on their core mission of teaching and research while outsourcing IT infrastructure management to reliable cloud providers (Ndege, Awino and Ogutu, 2020).

STATEMENT OF THE PROBLEM

According to the Commission for University Education (2023), Kenya has 89 accredited universities, the majority of which are public, while slightly over a third are private. The effects of COVID-19 on universities have been substantial, encompassing financial challenges, changes in enrollment dynamics, and the need for adaptation and innovation. Private universities in Kenya face a myriad of challenges in today's competitive higher education landscape, for instance, they need to constantly adapt to changing student expectations, advancements in technology, and evolving pedagogical approaches (Smith & Johnson, 2020). Mugimu (2021) commends that higher education institutions need to be centers of excellence for knowledge creation if Africa is to remain relevant and competitive in a knowledge-driven economy.

Integrating cloud computing into a private university's operations can streamline administrative processes, enrich teaching and learning experiences, enhance data management, and lower operational costs. However, the extent to which cloud technologies can significantly improve the organizational performance of private universities remains underexplored. By offering on-demand access to computing resources, applications, and storage via the internet, cloud computing presents a promising solution to these challenges. Private universities that do not adopt cloud computing may face various challenges related to cost, scalability, security, and competitiveness (Smith & Johnson, 2020).

In the cloud computing ever evolving landscape, the first hurdle private universities encounter is the rapid pace of technological advancement. Keeping up with the latest tools and trends in an era of digital transformation can be daunting. Not adopting cloud computing in private universities can lead to operational inefficiencies, higher IT infrastructure costs, and reduced accessibility. It hinders remote learning and collaboration, limits scalability, and poses security risks. Failure to embrace cloud technology may put these institutions at a competitive disadvantage in the modern educational landscape (Kaputa et al, 2022).

The effect of cloud services, cost efficiency, and resource utilization in private universities' decision-making in the Kenyan context is still largely unexplored. Studies about cloud technologies focuses mostly on Western countries, ignoring how it functions in developing nations. This study seeks to examine the relationship between cloud computing services and the organizational performance of private universities. It aims to evaluate how these institutions utilize cloud computing resources and the resulting outcomes in terms of efficiency, effectiveness, and competitiveness. By investigating this relationship, the research intends to offer valuable insights that can help private universities make informed decisions on cloud adoption strategies and optimize their organizational performance. The study therefore proposes use of cloud computing to improve the organizational performance of private universities in Kenya.

OBJECTIVE

The main objective of the study is to examine the effect of cloud computing services on organizational performance of private universities in Kenya: a case study of The Management University of Africa.

RESEARCH QUESTION

In what ways does cloud services influence organizational performance of private universities in Kenya?

SIGNIFICANCE OF THE STUDY

This study investigates how the adoption of cloud computing influences the organizational performance of private universities in Kenya by examining key factors such as cost efficiency, resource utilization, scalability, data security, and service delivery. It aims to provide insights that can help university administrators, IT professionals, and policymakers make informed decisions about integrating cloud services to enhance institutional effectiveness, operational efficiency, and compliance with evolving educational and technological demands, while also contributing to academic knowledge on the relationship between cloud adoption and organizational performance in higher education.

LITERATURE REVIEW

Theoretical Review

Resource Based View (RBV)

The Resource-Based View (RBV) was first introduced by Birger Wernerfelt in 1984 and later expanded by Jay B. Barney in 1991, with further contributions from other scholars. RBV emphasizes achieving a sustainable competitive advantage by selecting and developing resources that are valuable, distinctive, difficult to replicate, and beneficial to the organization. According to Barney (1991), a company's resources fall into three categories: organizational capital resources, human capital resources, and physical capital resources. When effectively managed, these resources can drive superior performance and long-term success. For resources to deliver such benefits, they must be valuable, rare, inimitable, and non-substitutable (Barney, 1991). Within the RBV framework, cloud computing emerges as a strategic resource that can enhance an organization's competitive advantage. It extends beyond physical assets such as servers and computers to include intangible assets like employee expertise, an innovative organizational culture, and the strategic application of technology to improve customer relations and enhance the quality of goods and services. According to Ng'etich and Kipkorir (2023), only resources that are owned and controlled by the organization have a positive impact on achieving high organizational performance

Empirical Literature Review

Cloud computing refers to the provision of computing resources such as storage, processing power, and software applications over the internet, enabling users to access them on demand without the need for on-site servers or hardware (Muhairat, 2020). Delivered on a pay-per-use basis, cloud computing offers notable advantages including cost-effectiveness, scalability, accessibility, and flexibility, making it particularly valuable for private universities aiming to enhance their operational performance (Khayer & Nguyen, 2020). One key benefit of cloud computing is the increased availability and accessibility of information systems. By leveraging cloud infrastructure, organizations can ensure uninterrupted access to systems and data from any location at any time, which can significantly improve user satisfaction and system success. Additionally, cloud platforms allow for seamless scalability, enabling institutions to adjust resources in response to growth or fluctuating demands (Muhairat, 2020; Khorraminia et al., 2019). From a financial perspective, cloud adoption can reduce costs compared to traditional on- premises systems by removing the need for substantial upfront investments in hardware and infrastructure (Technavio, 2023). This cost efficiency not only supports the success of information systems but also strengthens overall financial performance. However, cloud computing also presents challenges, particularly regarding data security and privacy. Ensuring compliance with relevant regulations and safeguarding information stored in the cloud are critical, as lapses in these areas can undermine both system and organizational success (Latifian, 2022). Overall, as Latifian (2022) notes, cloud computing can significantly influence the success of information systems by enhancing availability, scalability, cost-efficiency, and user experience, while also requiring careful management of associated security and privacy risks. Understanding these dynamics and implementing robust strategies is essential to fully realizing the potential of cloud-based solutions.

METHODOLOGY

This study adopts a descriptive survey quantitative approach to examine the relationship between cloud computing services and organizational performance in private universities in Kenya. This approach was chosen for its suitability in describing the relationships among the variables outlined in the conceptual framework. Data was collected using a questionnaire composed of closed-ended questions, carefully designed to investigate the key issues relevant to the study. The Management University of Africa (MUA) has two campuses and several branches nationwide; this research focuses specifically on the South C campus. The population was categorized into three organizational levels: top management, middle management, and operational staff (MUA, 2024). The target population consisted of 80 employees of the Management University of Africa.

This study employed a census sampling technique, which involves collecting data from every member of the target population rather than selecting a subset. The use

of census sampling aims to ensure the comprehensiveness and accuracy of the study's findings (Bell, Bryman & Harley, 2022). Data collection was conducted using questionnaires as the primary instrument. Specifically, a structured online questionnaire was developed and administered through Google Forms, chosen for its accessibility, ease of distribution, and capability to collect and organize data in real time. Descriptive statistics were computed for each survey question to identify patterns and distributions within the responses. To examine the relationships between the dependent variable and the four independent variables, the study employed regression analysis.

This statistical technique is appropriate for determining the strength and nature of these relationships and supports drawing valid conclusions.

$Y=\beta0+\beta1X1+\varepsilon$

Where:

Y = Cloud Computing (Dependent Variable)

X1 = organizational performance (Independent Variable)

$\beta0$ = Constant

$\beta1$ = Regression Coefficient

ε = Error Term

FINDINGS AND DISCUSSIONS

Response Rate

Of the 80 participants, 75 were received via the Google Form and 5 were non-respondents despite reminders. The resulting response rate was 93.75% which is more than the recommended criteria for survey studies. Survey researchers typically indicate that the acceptable response rate is 70% and anything above 90% is excellent and demonstrates good engagement from the respondents (Babbie, 2007). The high response rate achieved in the study can be attributed to several factors, including the ease and accessibility of the survey, which was generated using Google Forms, the researcher's timely and thoughtful reminders to participants, and the participants' perception of the topic's relevance and significance to their context. These elements collectively encouraged prompt participation and completion of the survey.

Table 1: Response Rate

Response	Frequency	Percentage (%)
Responded	75	93.75
Not Responded	5	6.25
Total	**80**	**100.00**

Descriptive Statistics on Cloud Services

This study investigated the role of cloud services in affecting organizational performance, concentrating on how personnel at the Management University of Africa view their institution's utilization of cloud-based technologies. Four specific statements were employed to evaluate this area: ease of integration of cloud systems, availability and dependability of cloud services, data security and privacy, and the capacity to scale services based on organizational needs. Participants rated their agreement on a scale from 1 (strongly disagree) to 5 (strongly agree).

Table 290: Cloud services on organizational performance

Statement	Mean	Std. Deviation
Our cloud services are easily integrated with existing systems and platforms.	2.80	1.433
The availability and reliability of our cloud systems meet our operational demands.	2.92	1.496
Our cloud service provider ensures strong data security and privacy protocols.	2.99	1.447
Our organization can scale cloud services up or down depending on our needs.	3.28	1.361

Valid N (listwise) = 75

Findings from indicate varying perceptions regarding several key attributes of cloud services. The data, presented in terms of mean scores and standard deviations, offers insights into user experiences across different operational aspects. The results from the cloud services section show that staff had different opinions about how well these systems are working at the university. The highest average score was 3.28 for the statement about scalability, meaning that many respondents felt the cloud services could be increased or reduced depending on the university's needs. This suggests that flexibility is one area where cloud services are performing fairly well. The lowest average score was 2.80, for the statement about how easily cloud services connect with the systems already in use. This shows that integration may be a challenge for some users.

Other statements about the availability and reliability of the systems and the security and privacy of data had average scores of 2.92 and 2.99, which are close to the middle of the scale. This means that some staff are satisfied with these areas, but others are not. In all four statements, the standard deviation was above 1.3, showing that responses varied quite a bit. This means that people had mixed experiences some found the cloud services helpful and reliable, while others may have faced challenges or were unsure. These results suggest that while there are some strengths, there are also areas that need improvement, especially in making sure the systems work well with existing tools and are reliable for all users.

Oredo (2022) in research on Exploring the role of organizational mindfulness on cloud computing and firm performance emphasized that cloud adoption significantly improves firm performance, but only when paired with organizational mindfulness meaning structured practices like strategic alignment, integration planning, and proactive monitoring. Using PLS-SEM analysis, the study demonstrated strong positive pathways from cloud adoption to organizational performance, particularly when companies actively ensured compatibility, security, and adaptive scalability. Our findings partially align with these insights but reveal critical gaps. While respondents rated cloud scalability relatively higher (M = 3.28, SD = 1.361), integration with existing systems scored the lowest (M = 2.80, SD = 1.433), suggesting difficulties in seamless adoption. Similarly, availability and reliability of cloud services were rated modestly (M = 2.92, SD = 1.496), while data security scored slightly better at (M = 2.99, SD = 1.447). These results indicate that while some flexibility exists, organizations struggle with interoperability, system reliability, and comprehensive security measures. According to Oredo (2022), these weaknesses reflect a lack of mindfulness in cloud adoption, which can limit its positive effect on performance. Without deliberate governance and integration strategies, cloud investments may not translate into the substantial performance gains observed in Oredo's study.

Wangui and Muchelule (2023) investigated the effect of cloud computing adoption on the performance of county governments in Kenya and reported a strong positive relationship between cloud adoption and organizational performance, supported by regression analysis ($p < 0.05$). The study concluded that successful cloud implementation significantly improved service delivery, operational efficiency, and cost-effectiveness in Nyandarua County. Key success factors included seamless system integration, consistent reliability, robust data security, and scalability. This research's findings, however, show that these critical areas of cloud adoption are only moderately implemented in the organizations surveyed.

The highest-rated aspect was the ability to scale cloud services based on organizational needs (M = 3.28, SD = 1.361), suggesting some flexibility exists. In contrast, integration with existing systems received the lowest rating (M = 2.80, SD = 1.433), pointing to interoperability challenges. Availability and reliability scored modestly (M = 2.92, SD = 1.496), while data security and privacy measures scored slightly better (M = 2.99, SD = 1.447). These averages indicate that organizations are far from the optimal levels of cloud readiness that Wangui and Muchelule (2023) associated with strong performance gains. While respondents acknowledge some benefits, such as scalability, the relatively low scores for integration and reliability may prevent organizations from realizing the full performance potential of cloud adoption, as demonstrated in Wangui's study. Without addressing these gaps, particularly in interoperability and system dependability, the performance impact of cloud services is likely to remain limited.

Correlation Analysis

Table 91: Correlation Analysis

Variable		Organization performance
Cloud services	Pearson Correlation	.929**
	Sig. (2-tailed)	.000
	N	75
	Sig. (2-tailed)	
	N	75

A strong positive linear relationship was observed between perceptions of cloud services and organizational performance, with a Pearson correlation coefficient of .929. This indicates that as organizations perceive their cloud services more favorably in terms of integration, reliability, security, and scalability, there is a strong tendency for their overall performance to be higher. The statistical significance of this correlation (Sig. = .000) confirms that this relationship is highly unlikely to be coincidental, suggesting a meaningful connection between the two variables within the sample of 75 respondents. The current study's correlation analysis reveals that Cloud services had a strong link (r=.929). The findings were statistically significant (p<.001), emphasizing the critical role of digital adoption in improving business outcomes. These results align with a similar study by Mulwa, Kimitei, and Mohammed (2025), who found that various digital transformation components, including cloud computing, artificial intelligence (AI), enterprise resource planning (ERP), and e-tendering positively influenced firm performance in Kenyan government corporations. Their regression analysis provided significant standardized beta coefficients for cloud computing (β=0.157), AI (β=0.276), ERP (β=0.178), and e-tendering (β=0.636), all at p<.05. It is worth noting that while cloud computing had the smallest beta coefficient, it still contributed significantly to performance.

FINDINGS

Cloud Services and Organizational Performance

The study found that most respondents had mixed views about cloud services at the university. While some aspects were working well, others needed improvement. The staff at the university have mixed feelings about cloud services. They perceive scalability positively: the cloud can grow or shrink depending on the need. However, integration with existing systems was much more problematic. The study revealed that staff members at the university had mixed views about the effectiveness of cloud services. While many respondents appreciated the scalability of cloud platforms, indicating that the systems could easily grow or shrink depending on demand, concerns remained about integration with existing systems. Staff expressed uncertainty about whether cloud applications worked smoothly with the tools they were already familiar with. This

finding resonates with Kandregula (2022), who noted that while scalability is often a key strength of multi-cloud environments, integration challenges can undermine the perceived value of these services.

Despite these concerns, cloud services demonstrated a strong positive relationship with organizational performance in the inferential analysis. Correlation results showed that better cloud adoption was associated with improvements in revenue growth, competitiveness, and achievement of strategic goals. This aligns with Malik et al. (2022), who highlighted that cloud systems can significantly enhance efficiency by optimizing infrastructure use and enabling organizations to meet performance demands more effectively. In this sense, the university's cloud adoption appears to contribute positively to its institutional outcomes, even if staff perceptions remain cautious.

The regression analysis further confirmed the significance of cloud services as a predictor of organizational performance. Alongside cost efficiency, cloud systems had one of the strongest positive effects, reinforcing the argument that technology infrastructure is a critical driver of institutional growth. According to Acosta-Prado et al. (2023), technology-driven practices such as cloud adoption are central to creating sustainable value, as they support competitiveness, agility, and operational excellence. This supports the interpretation that cloud platforms provide a solid foundation for long-term performance improvements at the university.

However, the mixed staff views on integration suggest that the university has not yet fully realized the potential of its cloud investments. If cloud services are not seamlessly integrated with existing tools, employees may face difficulties in their daily operations, which could limit the efficiency benefits. Muthaura and Kinyua (2021) argue that resource alignment is crucial for performance gains; without aligning cloud systems with existing workflows, the institution may underutilize its technology investments. This highlights the importance of strategic integration planning in future improvements.

Another consideration is the visibility of benefits from cloud adoption. Respondents may not always see the operational efficiencies gained, especially if improvements occur in the background. As Ngaruiya, K'aol, and Njenga (2023) observed, effective portfolio management requires not only implementing new systems but also ensuring that staff understand how these systems contribute to broader organizational outcomes. By improving communication and training, the university could strengthen staff confidence in cloud platforms and enhance the realized benefits of adoption.

In conclusion, the findings show that cloud services are a strong driver of organizational performance at the university, but challenges remain in integration and staff awareness. While scalability and flexibility are highly valued, difficulties in blending cloud applications with existing tools have led to mixed perceptions. Nonetheless, statistical evidence confirms that cloud adoption supports revenue growth, competitiveness, and strategic achievement. Moving forward, greater emphasis on integration, training, and clear communication of cloud-related benefits are essential in maximizing the impact of these technologies on performance (Abdi, Nzili, & Kiama, 2024).

CONCLUSION

This study set out to examine the influence of cloud computing services on organizational performance in private universities, with a focused case study on the Management University of Africa. Specifically, the research investigated how cloud services relate to the dependent variable, organizational performance. The findings of this study have shown that cloud services play a significant role in enhancing organizational performance at the Management University of Africa. Among the four indicators measured, integration, availability and reliability, data security and privacy, and scalability, respondents gave the highest ratings to scalability, indicating that the university's cloud systems are adaptable and responsive to changing operational demands. This flexibility is essential in a dynamic educational environment, especially where digital tools are increasingly relied upon for teaching, learning, and administration.

However, integration of cloud services with existing systems received the lowest mean score, highlighting a challenge that may hinder smooth adoption and use of cloud technologies. This suggests that while the university has made progress in adopting cloud services, there may still be gaps in compatibility, user experience, or technical capacity that need to be addressed to maximize benefits. This show a conclusion drawn from this study is that cloud services are a vital enabler of institutional performance in private universities. Their impact is not only technological but also strategic, supporting broader goals of operational excellence, competitiveness, and digital transformation. For these benefits to be fully realized, however, attention must be given to improving system integration and ensuring that staff are well-supported in using cloud-based tools effectively.

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