JETMASE
Journal of Emerging Trends in Management Sciences and Entrepreneurship
Volume 8 (1), Pages 1- 18 January 2026
ISSN: 2384-762X
https://www.jetmase.com

# Cloud Computing System Use and its Effects on Entrepreneurial Venture Performance of Information Technology Firms in Delta State.

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**ABSTRACT**: Despite the growing global adoption of cloud-based systems, the extent to which cloud computing influences entrepreneurial venture performance remains inconclusive. This study examined the effect of cloud computing system use on entrepreneurial venture performance of Information Technology (IT) firms in Delta State. This study used a closed-ended online administered questionnaire to collect data from 1200 respondents. Data was collected from June 2025 to November 2025. The respondents of the study were CEOs, managers and executives of Information Technology firms in Delta State, Nigeria. The multiple regression method was utilized to analyze the data. The findings indicated that technological, organizational, and environmental factors had a significant effect on performance of entrepreneurial ventures of IT firms in Delta State. The study recommends that Entrepreneurial ventures should prioritize investment in robust cloud computing infrastructure and technical capabilities, firms should establish flexible policies, adaptive structures and a culture that encourages innovation and learning and Entrepreneurial ventures should actively seek and utilize government programs, regulatory incentives and external support mechanisms that promote cloud computing adoption. The study puts forward important practical implications for entrepreneurial ventures to follow in effectuating the linkages among the constructs in a meaningful and coherent manner.

**Keywords**: cloud computing, technological construct, organizational construct, environmental constructs entrepreneurial performance.

## 1. INTRODUCTION

The digital transformation of businesses across various industries, driven by emerging technologies including Internet of Things (IoT), big data analytics, artificial intelligence, blockchain, and cloud computing, has become a rapidly evolving trend (Akter et al., 2022). Technological innovation plays a crucial role in the creation of products and services. Today, offerings are assessed not only for their utility and functionality but also for their ease of use, efficiency, and delivery speed. Innovation through technology spans multiple sectors and industries, and organizations must successfully embrace digital transformation to

achieve significant business advancements, such as enhancing customer experience and engagement, optimizing operations, and developing novel business models; otherwise, they risk being overtaken by competitors that do (Calderon-Monge & Ribeiro Soriano, 2024). Cloud computing (CC) has emerged as a transformative force, enabling organizations to store, process, and manage data over the internet rather than relying on traditional infrastructure (Shawe, 2024). Cloud computing delivers adaptable resources, operational agility, and economical solutions, making it especially advantageous for small and medium-sized enterprises (SMEs) that typically operate under limited resources (SMEs) and entrepreneurial ventures that typically operate under resource limitations (Mkhize et al., 2025).

According to Chung, Franses & Pennings (2024), Entrepreneurial ventures, especially start-ups and small businesses, operate in highly dynamic environments characterized by uncertainty, limited capital, and a need for rapid innovation. These ventures require technological solutions that enhance their ability to respond quickly to market changes, improve operational efficiency, and support business growth. Cloud computing systems offer such advantages by reducing the need for large upfront investments in IT infrastructure, enabling remote collaboration, improving data accessibility, and supporting innovation through affordable digital platforms (Mkhize et al., 2025).

Over the past decade, the adoption of cloud computing among entrepreneurs has increased significantly because of its perceived advantages, including enhanced business agility, improved customer engagement, and access to advanced analytics tools (Mkhize et al., 2025). However, despite its potential, the effect of cloud computing on entrepreneurial performance remains an area that requires deeper empirical investigation. Numerous ventures still encounter obstacles including concerns over data security, difficulties with system integration, insufficient technical skills, and dependence on internet connectivity, all of which affects the overall effectiveness of cloud adoption. (Merlo et al., 2025).

Earlier research (Mkhize et al., 2025; Enonuya et al., 2024; Jayeola et al., 2022) investigating the impact of cloud computing adapotion on SMEs' performance has identified factors such as managerial innovativeness, limitations in education and training, and shortcomings in strategic planning and financial resources. However, there is broad recognition of the scarcity of studies exploring the joint effect of technological and organizational factors on SMEs' adoption of cloud computing systems (Jayeola et al., 2022; Malatji, 2022).

Most previous scholars have employed the Technology Acceptance Model (Davis, 1989) and the Unified Theory of Acceptance and Use of Technology (Venkatesh et al., 2003). This article employs the Technology, Organizational, Environmental (TOE) framework (Tornatzky & Fleischer, 1990) to investigate the effects of cloud computing system use on entrepreneurial venture performance. Therefore, this research investigates the effect of cloud computing systems use on entrepreneurial venture performance of Information Technology (IT) firms with technological organizational and environmental constructs serving as key factors. This paper extends the scope of research on cloud computing by examining the different factors that measure entrepreneurial venture performance. Ultimately, this study adds to the existing body of literature on the integration of cloud computing system within entrepreneurial ventures.

## Objective of the Study

The major objective of this study is to evaluate the effect of cloud computing system use on entrepreneurial venture performance of Information Technology (IT) firms in Delta State. The specific objectives are:

1. To assess the effect of the Technology constructs on entrepreneurial venture performance of IT firms in Delta State.
2. To examine the effect of the organizational constructs on entrepreneurial venture performance of IT firms in Delta State.
3. To assess the effect of environmental constructs on entrepreneurial venture performance of IT firms in Delta State.

## 2. LITERATURE REVIEW

### 2.1 THEORETICAL FRAMEWORK

Existing studies using the Technological, Organizational, and Environmental (TOE) framework have explored a range of factors, identifying them as critical determinants for the adoption and utilization of various information systems. For instance, Soto-Acosta et al. (2017) employed the TOE framework to develop a conceptual model assessing the impact of human resource practices and web-based knowledge sharing on innovation performance among manufacturing SMEs in developing countries. Similarly, Hoque et al. (2025) investigated the factors driving sustainable practices and their effect on competitive capabilities through the TOE lens, specifically applying the framework to examine how cloud computing systems influence the performance of entrepreneurial ventures.

Introduced by Tornatzky and Fleischer (1990), the TOE framework provides a comprehensive approach to understanding the determinants of technology adoption and implementation in organizations. It posits that the decision to adopt a particular technology is shaped by three interrelated contexts technological, organizational, and environmental each offering unique insights into the internal and external conditions that affect how effectively an organization incorporates new technologies to improve performance. Within the technological dimension, entrepreneurs need to carefully assess factors such as the interoperability, scalability and security of cloud computing systems to ensure they align with organizational goals and operational requirements.

The organizational dimension emphasizes the importance of fostering managerial commitment, enhancing employees' digital competencies, and promoting a culture of innovation to facilitate the effective integration and utilization of cloud-based technologies while the environmental dimension highlights the critical role of supportive government policies, reliable digital infrastructure, and competitive market dynamics in promoting the successful adoption and sustained use of cloud computing systems(Jewapatarakul & Ueasangkomsate, 2024).

This implies that the positive impact of cloud computing on entrepreneurial venture performance is contingent upon the synergistic interaction among the technological, organizational, and environmental factors. Entrepreneurial ventures that strategically invest in suitable technological solutions, strengthen their internal organizational capabilities and operate within a conducive external environment are more likely to achieve superior levels of innovation, operational efficiency and market competitiveness (Alzate-Alvarado et al., 2025). However, the absence of readiness or support inside any one

of these dimensions can significantly constrain the potential performance outcomes associated with cloud computing adoption.

## 2.2 CONCEPTUAL REVIEW/ HYPOTHESES DEVELOPMENT

### 2.2.1 Cloud computing

Humphrey (2023) defines cloud computing as the delivery of computing services including servers, storage, databases, networking, software and analytics over the internet ("the cloud"), enabling users to access these resources as needed. Similarly, the National Institute of Standards and Technology (NIST) describes cloud computing as a model that provides ubiquitous, convenient, and on-demand network access to a shared pool of configurable computing resources which can be rapidly provisioned and released with minimal management effort or interaction with the service provider (Mell & Grance, 2011, as cited in Alzide, 2024). This definition highlights the distinguishing characteristics that set cloud computing apart from traditional information technology (IT) systems. Recent studies also points out five core features of cloud computing which include; self-service on demand, broad network access, resorce pooling, rapid elasticity and measured service(Humphrey, 2023; Alzide, 2024).On-demand self-service enables users to access computing resources, such as storage or virtual servers, whenever they need them without requiring manual intervention from service providers. Wide network access ensures that these services can be accessed from any location through various devices, fostering mobility and remote work capabilities. Resource pooling enables cloud providers to efficiently serve multiple clients through multi-tenant models while rapid elasticity enables users to adjust resources up or down based on their evolving requirements. Lastly, monitored service denotes the pay-per-use pricing model that optimizes resource use and reduces waste.

Mell & Grance (2011) classified Cloud computing into three primary service models: Infrastructure as a Service (IaaS), Platform as a Service (PaaS), and Software as a Service (SaaS). IaaS provides virtualized computing infrastructure, including servers and storage that enables users to deploy and manage operating systems and applications. PaaS provides a development environment that enables users to build and deploy applications without managing the underlying infrastructure. SaaS, the most widely recognized model among end-users delivers software applications over the internet, with examples including Google Workspace, Salesforce, and Microsoft 365 (Humphrey, 2023). Regarding deployment models, cloud computing can take several forms: public, private, hybrid, and community clouds. Public clouds, managed by third-party providers, deliver services to multiple users via the internet, making them cost-effective but less customizable. Private cloud are dedicated to single organization, offering greater control and security at a higher cost. Hybrid clouds combine elements of both public and private infrastructures, allowing organizations to balance flexibility with data confidentiality. Community clouds are shared among among organizations with similar needs or regulatory requirements. The growing uptake of cloud computing is largely driven by its extensive benefits. For entrepreneurial ventures and small businesses, it reduces the need for large upfront investments in hardware and IT personnel through a flexible pay-as-you-go model that supports lean operations. Cloud computing also boosts organizational agility by enabling rapid scaling, fostering innovation, and enhancing collaboration through shared digital environments (Alzide, 2024). Furthermore, many cloud platforms provide access to advanced technologies,

including artificial intelligence, big data analytics, and Internet of Things (IoT) applications, allowing ventures to harness data-driven insights and strengthen their competitive advantage.

Nevertheless, despite these advantages, challenges such as data security risks, privacy issues, and regulatory compliance remain significant barriers to cloud computing, especially for small ventures with limited cybersecurity capabilities. (Alzide, 2024). Dependence on reliable internet connectivity also poses a problem in regions with poor digital infrastructure. The success of cloud computing use often depends on organizational readiness, including the technical skills, leadership support, and change management capacity required to incorporate cloud solutions effectively (Humphrey, 2023).

### 2.2.2 Technology Constructs

The effectiveness, dependability, and scalability of cloud computing systems are heavily shaped by the level and type of technological support (TA) available, including technical expertise, robust technical infrastructure, and ongoing system maintenance. These elements serve as critical proxies, collectively ensuring the seamless functioning and ongoing enhancement of cloud-based systems (Oyeniran et al., 2024). Babashahi et al. (2024) stated that TA in cloud computing begins with the synergy between human expertise and technological resources. Technical expertise ensures that cloud systems are properly designed, configured and managed while technical infrastructure provides the physical and virtual foundation that supports operations. Conversely, system maintenance, sustains these systems through continuous updates, monitoring, and optimization. The combination of these elements enables organizations to deploy cloud environments which are not only functional but also adaptable to evolving user demands and technological advances. A key dimension of technology assistance lies in the capacity to integrate automation and predictive capabilities into cloud operations. According to Zhao et al. (2021), machine learning and artificial intelligence guided by expert knowledge are increasingly used to automate maintenance and optimize infrastructure utilization. Predictive maintenance techniques are used to analyze data patterns to detect potential failures before they occur, reducing operational disruptions and improving system reliability.

A recent study by Al-Said Ahmad et al. (2024) conducted an exploratory empirical study that applied chaos engineering principles to cloud-native applications. The authors deliberately introduced system faults across different user loads to evaluate how resilience and performance are maintained under stress. Their findings revealed that systems equipped with strong monitoring, fault-handling mechanisms, and resilient design maintained high levels of availability and acceptable performance even during fault conditions. This evidence suggests that technological constructs encompassing expertise in designing resilient architectures, infrastructure capable of managing faults, and continuous maintenance through monitoring are essential for preserving system reliability in dynamic and adverse conditions. Similarly, Neicu et al. (2020) investigated the effect of cloud computing on organizational outcomes in small and medium enterprise (SMEs), with a particular focus on cloud service quality and perceived cloud infrastructure quality as critical factors influencing the effectiveness of cloud-based systems in business environments. Using data collected from 315 employees across multiple SMEs, the authors applied Structural Equation Modelling (SEM) through

the WarpPLS technique to asses the relationships among cloud service quality, perceived benefits, user satisfaction, and broader organizational outcomes. The findings showed that perceived cloud service quality and cloud infrastructure capability exert a significant positive effect on user satisfaction. Employees who experienced higher levels of service reliability, system stability, and responsiveness were more satisfied with their organization's cloud systems. Importantly, the study further demonstrated that greater user satisfaction was linked to improved organizational outcomes, including enhanced efficiency, increased productivity, and better decision-making processes. These results implies that cloud infrastructure and quality of service are not merely technical considerations rather, they play an essential role in shaping performance-related outcomes for SMEs.

However, Syarifudin & Zaenal Abidin, (2024) conducted an investigation rooted in the Stimulus–Organism–Response (SOR) theoretical framework to examine how cloud service quality influences customer-related outcomes within organizations. The study utilized a structured questionnaire administered to users of cloud-based services to gather quantitative data, which was then analyzed through Structural Equation Modeling (SEM). The main constructs examined were cloud service quality, customer satisfaction, customer loyalty, and organizational performance. The findings revealed a nuanced pattern of relationships. Although cloud service quality showed a positive association with customer satisfaction, not all subsequent relationships were statistically significant. Notably, the relationship between customer satisfaction and customer loyalty, while positive in direction, was not statistically significant. This indicates that improvements in cloud service quality do not automatically or consistently lead to increased customer loyalty. As a result, the study highlights that the influence of cloud service quality on subsequent behavioral outcomes, such as customer loyalty, may be constrained or dependent on specific contextual factors. The findings implies that the benefits associated with cloud technology quality are not universal and may vary depending on user perceptions, contextual factors, and organizational environments. Given this, the first hypothesis was formed:

H1: Technology Constructs has significant effects on entrepreneurial venture performance of IT firms in Delta State.

### 2.2.3 Organizational Construct

An organizational construct encompasses the internal, non-technical characteristics of an organization, including its policies, governance structures, culture, leadership support, change management practices, training, and defined roles and responsibilities (Abdelrahman et al., 2025). Supportive policies act as formal mechanisms through which organizations institutionalize cloud computing adoption. According to Folorunso et al. (2024), such policies establish a governance framework that sets standards, allocates resources, and ensures adherence to security and regulatory requirements. Milhem et al. (2025) conducted a study on small and medium-sized enterprises (SMEs) in Bahrain and found that supportive organizational policies and active leadership engagement significantly increased the likelihood of adopting cloud-based human resource management systems. The researchers noted that when organizations establish clear policies and readiness plans, they are better able to coordinate between technical teams and managerial stakeholders, thereby reducing implementation barriers. Similarly, Lawan et al. (2021) emphasized in their

systematic review of organizational cloud adoption that top management support and formal governance mechanisms are among the most consistent determinants of successful adoption outcomes across industries. These findings imply that supportive policies not only shape decision-making but also provide the strategic direction necessary for technical adoption to translate into organizational value.

Moreover, strong change management capabilities help ensure that organizational members are ready and willing to respond to the changes introduced by cloud computing. Migrating to the cloud often involves redesigned workflows, updated security protocols, and a transfer of responsibilities from on-premises systems to service providers. Without careful management of this transition, resistance, confusion, and productivity loss may occur. Shirpoor et al. (2023) in their study of the Ministry of Communication and Information Technology in Afghanistan, found that organizations with structured change management processes, such as staff training, stakeholder engagement, and process realignment, experienced smoother transitions to cloud technologies and higher post-adoption satisfaction. The authors observed that resistance to change was minimized when employees understood the benefits and when leadership communicated a clear rationale for the transformation.

However, Aligarh et al. (2023) conducted a study in Indonesia involving 197 MSMEs to examine the factors influencing cloud computing adoption using the Technological, Organizational, and Environmental (TOE) framework. It revealed that "top management support" an organizational construct, did not significantly affect cloud computing adoption among these MSMEs. This finding challenges traditional assumptions of the TOE framework, implying that organizational elements such as managerial endorsement may not always be pivotal in smaller or more entrepreneurial settings. The results suggest that cloud computing technologies have become sufficiently accessible, intuitive, and affordable, diminishing the necessity for formal managerial approval. As a result, individual employees or operational teams may independently perceive the benefits and practicality of cloud solutions and proceed with adoption without strong top-level involvement. In accordance with the statements indicated above, the following hypothesis was formed:

H2: Organizational Constructs has significant effects on entrepreneurial venture performance of IT firms in Delta State.

### 2.2.4 Environmental Constructs

Environmental constructs refer to factors originating outside the organization that influence its strategic decisions and technology adoption. Key components include competitors, government regulations, industry conditions, suppliers, customers, and societal expectations. In the context of technology adoption particularly the use of cloud computing in entrepreneurial ventures, environmental regulations and social influence are recognized as major drivers (Qatawneh, 2024). Empirical studies also show that external pressures from trading partners, suppliers and competitors significantly affect the adoption and utilization of cloud computing systems within IT firms (Chen et al., 2023).

Al-Sharafi et al. (2023) examined the determinants of cloud computing integration and its impact to sustainable performance among small and medium-sized enterprises (SMEs) using the Techology, Organization, and Environment (TOE) framework, the study focused on the role of government support

operationalized through policy incentives, financial aid and regulatory measures in facilitating cloud adoption in entrepreneurial ventures. Data was collected from 415 SMEs, and a hybrid methodology combining Partial Least Squares Structural Equation Modelling (PLS-SEM) and Artificial Neural Network (ANN) analysis was employed. Results showed that government support is a significant precursor to cloud computing integration, underscoring the importance of policy incentives and external assistance in encouraging SMEs to adopt and implement cloud-based technologies. Furthermore, cloud integration positively and significantly impacted sustainable performance, improving financial, environmental, and social outcomes. The study demonstrates that government support indirectly enhances SME performance by enabling effective cloud computing adoption.

However, a systematic review by Mkhize et al. (2025) analyzed the impact of cloud computing adoption and usage on SME performance over a ten-year period (2014–2024). The review synthesized findings from multiple quantitative and qualitative studies to identify patterns, overarching trends, and contextual factors that influence the effectiveness of cloud adoption in SMEs. It paid particular attention to external influences, such as government incentives and policy support, in promoting cloud adoption and improving firm performance. The analysis indicated that while many studies reported positive outcomes such as enhanced operational efficiency, cost savings, scalability, and competitive advantage results varied widely across contexts and regions. Persistent barriers, including inadequate technical readiness, security concerns, limited organizational resources, and gaps in managerial expertise, were frequently highlighted. These challenges sometimes prevented SMEs from fully realizing the performance benefits of cloud technologies, even when services were accessible and supported by government policies. The findings suggest that government incentives alone are insufficient to guarantee improvements in SME performance. While supportive policies encourage cloud adoption their impact is mediated by organizational capabilities, technological infrastructure and the broader institutional environment. Therefore the following hypothesis was formed:

H3: Environmental Constructs has significant effects on entrepreneurial venture performance of IT firms in Delta State.

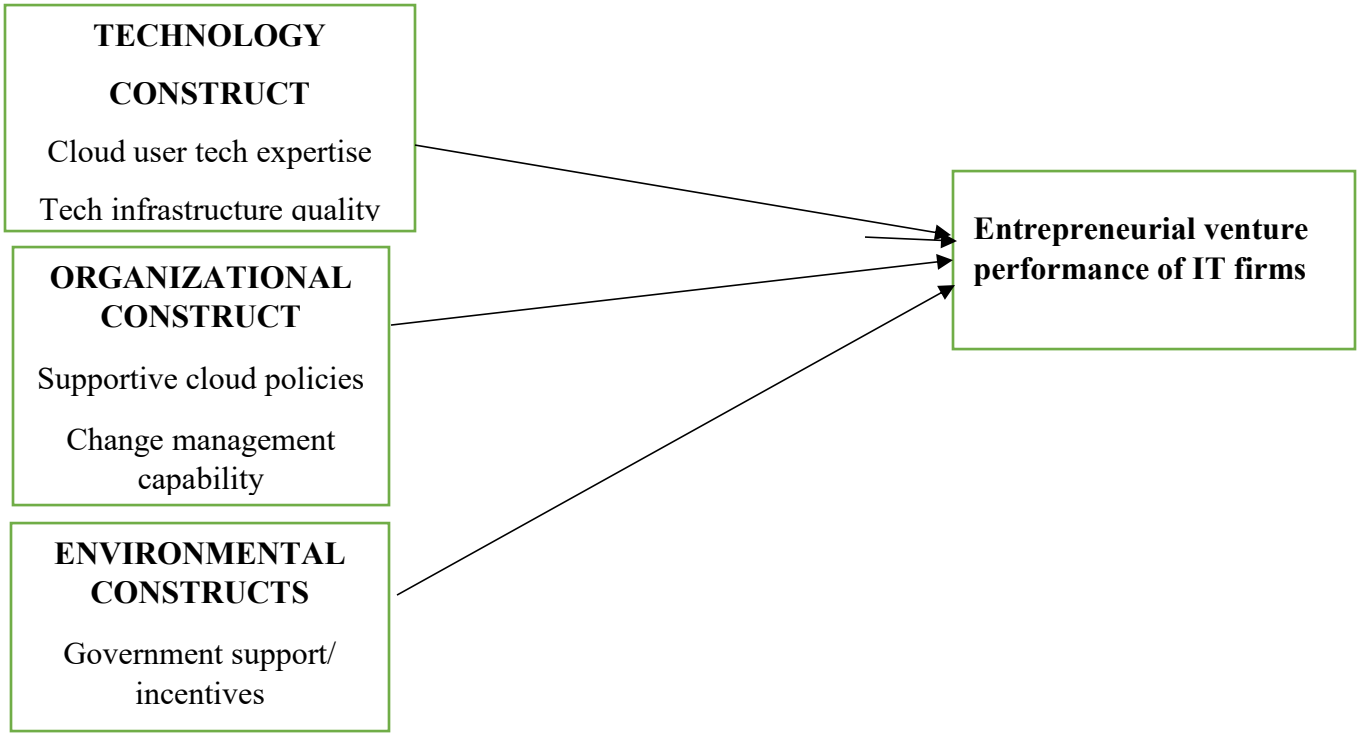
### 2.2.5 Cloud computing system use and Entrepreneurial venture performance

Cloud computing has become a key driver of digital transformation for entrepreneurial ventures, providing immediate access to computing resources, lower upfront costs, and rapid scalability (Alka, Sreenivasan & Suresh, 2025). Empirical studies consistently report positive relationships between cloud adoption and firm-level outcomes. Several quantitative investigations have found that cloud adoption improves operational efficiency, expands service delivery capabilities, and increases firms' ability to rapidly scale new products and services (Yang, Li & Liu, 2025; Oredo & Dennehy, 2023). Khayer et al. (2020) identified cloud adoption as a significant predictor of improved SME performance, achieved through increased flexibility and lower upfront IT investment, thereby enabling smaller ventures to compete more effectively with larger incumbents. Recent literature syntheses have noted recurring performance gains, but stress that results depend on mediating variables, such as the type of cloud service used, the firm's absorptive capacity, and environmental enablers (Donat et al., 2025). Mkhize et al. (2025) conclude that

cloud computing tends to produce positive outcomes for IT firms overall performance; however, the evidence is mixed across geographies and industries, indicating important boundary conditions for performance effects.

Yang, Li, & Liu, (2025) observed that the mechanisms linking cloud use to performance are both direct and indirect. Direct effects include lower IT capital requirements, pay-per-use cost structures, and faster application deployment. Indirect effects occur when cloud platforms facilitate new organizational practices and external collaborations, thereby increasing the firm's innovation throughput and market reach. Nevertheless, not all entrepreneurial ventures realize measurable performance gains after adopting cloud services. An econometric analysis of firm-level data conducted by Schiersch & Duso, (2023) examined the relationship between cloud computing adoption, IT investment and firm productivity, aiming to determine whether implementing cloud technologies leads to measurable iprovements in organizational performance while accounting for various firm-level factors. Using a large multi-industry dataset, the researchers employed econometric modeling to isolate the effect of cloud adoption on productivity, controlling for both tangible and intangible capital, including other software and digital investments. The results revealed that, after considering these additional variables, the impact of cloud adoption on productivity is minimal and statistically insignificant indicating that its contribution may be more limited than commonly assumed. Put differently, when factors such as capital intensity, workforce composition, and concurrent digital transformations are accounted for, cloud computing adoption alone does not significantly boost firm productivity. This finding challenges the prevailing notion that cloud integration inherently enhances performance outcomes. The study further noted that the lack of a significant effect was particularly evident for more complex cloud applications, suggesting that the benefits of such systems heavily depend on complementary investments and firm-specific capabilities. Overall, these results imply that adopting cloud computing does not guarantee immediate or measurable improvements in business performance.

## CONCEPTUAL FRAMEWORK




**Source**: Author's conceptualization (2025)

The conceptual framework illustrates how both technological, organizational and environmental constructs of cloud computing system affects the performance of entrepreneurial ventures. The framework begins with the technology construct, which includes cloud user technical expertise and the quality of technological infrastructure. Alongside the technological construct is the organizational construct which is composed of supportive cloud policies and change-management capabilities and environmental constructs which is composed of government support/ incentives.

## 3.0 RESEARCH METHODS

A descriptive survey research design using quantitative approach was employed. A sample size of 300 respondents was selected from the population 1200 respondents comprising CEOs, managers, and executives of IT firms in Delta State using Taro Yamane's formula.

$$n = \frac{N}{1 + N(e)^2}$$

$$\frac{1200}{1 + 1200(0.05)^2}$$

$$\frac{1200}{4}$$

$$n = 300$$

An online Google form was utilized to collect data from respondents. An Email invitation was sent to all respondents, which contained all information regarding the questionnaire and the code of ethics, stating that their information would remain anonymous, confidential, and voluntary. A 5- point Likert-scale questionnaire was used measuring variables such as Technology Constructs (TC), Organizational Constructs (OC), Environmental Constructs (EC), and Entrepreneurial Ventures Performance (EVP). To ensure the validity and relevance of the survey, the opinions of two experts based in Delta State were sought and reliability was confirmed with a Cronbach Alpha of 0.87. Data were analyzed using regression analysis with SPSS 25 statistical tool. To determine the effect of cloud computing system use on entrepreneurial performance, multiple regression was conducted between entrepreneurial venture performances (dependent variable) and technology constructs, organizational constructs and environmental constructs using data from field survey at 5% level of significance. The results are shown in tables 1, 2 and 3 below.

## 4.0 DATA ANALYSIS, RESULTS AND DISCUSSION OF FINDINGS

**Table 1: Multiple Regression Analysis among the constructs of cloud computing system**

**Coefficients[a<]**

| Model | | Unstandardized Coefficients B | Std. Error | Standardized Coefficients Beta | t | Sig. |
|---|---|---|---|---|---|---|
| 1 | (Constant) | 1.738 | 1.010 | | 1.731 | .086 |
| | TC | .420 | .074 | .382 | 6.00 | .000 |
| | OC | .347 | .062 | .320 | 5.559 | .000 |
| | EC | .290 | .081 | .260 | 3.619 | .001 |

a. Dependent Variable: Entrepreneurial Ventures Performance
Source: SPSS output of field survey, 2025

Table 1 shows that the result from multiple regression analysis revealed that all the constructs of cloud computing system use (technology, organizational and environmental constructs) has significant positive effect on entrepreneurial venture performance of IT firms. It recorded that technology constructs (TC) has positive effect on entrepreneurial ventures performance ($\beta = 0.380$, $p < 0.001$), organizational constructs ($\beta = 0.320$, $p < 0.001$) and environmental construct ($\beta = 0.260$, $p < 0.001$). The $\beta$ value shows the effect of these constructs on entrepreneurial venture performance.

**Table 2: Model Summary of Multiple Regression**

**Model Summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | .714[a] | .510 | .503 | .921 |

a. Predictors: (Constant), TC, OC, EC

Table 2 presents the model summary for the multiple regression analysis. The results indicate that technological constructs (TC), organizational constructs (OC), and environmental constructs (EC) collectively exert a significant influence on the performance of entrepreneurial ventures. The R value of 0.714 reflects a strong positive relationship between these predictors and venture performance, suggesting that improvements in technological, organizational, and environmental factors are associated with enhanced outcomes. The $R^2$ value of 0.510 indicates that 51% of the variance in entrepreneurial venture performance is explained by the three constructs, demonstrating a moderately strong predictive capability of the model. The Adjusted $R^2$ of 0.503, only slightly lower than $R^2$, confirms the model's robustness after accounting for the number of predictors. Additionally, the standard error of the estimate (0.921) suggests that the model predicts performance with reasonable accuracy, although some degree of variability remains.

Table 3: Fitness of the Model Analysis (ANOVAa)

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 385.920 | 3 | 128.770 | 58.220 | .000[b] |
| | Residual | 373.870 | 291 | 1.250 | | |
| | Total | 763.500 | 294 | | | |

a. Dependent Variable: Entrepreneurial venture performance
b. Predictors: (Constant), TC, OC, EC.
Source: SPSS output of Field survey,2025

Table 3 presents the F-ratio which evaluates whether the overall regression model provides a good fit for the data. The regression sum of squares (385.920) relative to the residual sum of squares (373.870) indicates that a substantial portion of the total variation in entrepreneurial performance is accounted for by TC, OC, and EC. The F-value of 58.220 is notably high, demonstrating that the overall model is statistically significant, as confirmed by $p < 0.05$. This indicates that the model fits the data well and that the predictors collectively exert a strong influence on the performance outcomes of entrepreneurial ventures.

**Findings**

The study finds that:

i Technology Constructs has significant effects on entrepreneurial venture performance of IT firms in Delta State.
ii. Organizational Constructs has significantly affects entrepreneurial

venture performance of IT firms in Delta State.

iii. Environmental Constructs has significant effects on entrepreneurial venture performance of IT firms in Delta State.

**Discussion of findings**

The findings of the study confirm that the constructs of cloud computing systems, technological constructs (TC), organizational constructs (OC), and environmental constructs (EC) have a significant and positive impact on enhancing the performance of entrepreneurial ventures, particularly within IT firms. Multiple regression results indicate that all three constructs are significant predictors of venture performance, with technological constructs showing the strongest standardized effect ($\beta = .382$, $p < .001$). This supports the observations of Katz, Jung, and Goldman (2024), who note that access to sufficient technical resources, expertise, and guidance enables businesses to effectively integrate and leverage cloud-based technologies. Strong technological support mechanisms therefore play a critical role in reducing perceived complexity and uncertainty in adopting new digital tools, facilitating smoother implementation and sustained usage.

Organizational constructs also exhibited a substantial positive effect ($\beta = .320$, $p < .001$), highlighting that supportive policies, internal structures, managerial backing, readiness for digital transformation, and organizational culture significantly influence how effectively ventures adopt and utilize cloud computing tools. This finding underscores the importance of a supportive organizational environment, aligning with Wiese, Lehmann, and Beckmann (2024), who emphasize that management commitment, flexible structures, and adaptive policies enhance the acceptance and integration of innovative technologies. Effective change management ensures that employees are adequately prepared for technological transitions, reducing resistance and fostering a culture of digital transformation.

Environmental constructs ($\beta = .260$, $p < .001$) were also significant predictors of entrepreneurial performance, indicating that external factors such as market conditions, competitive pressures, regulatory support, and the maturity of the technological ecosystem play an important role in driving the effectiveness of cloud adoption and its impact on performance outcomes. These findings are consistent with Al-Sharafi et al. (2023), who highlight that government support acts as a key precursor to cloud computing integration, with policy incentives and external assistance motivating entrepreneurial ventures to adopt and implement cloud-based technologies effectively.

## 5. CONCLUSION

The study investigated the effects of cloud computing system usage on the performance of entrepreneurial ventures within IT firms. The results indicated that all cloud computing constructs, technological (TC), organizational (OC), and environmental (EC) have significant and positive impacts on venture performance. The technological construct, encompassing technical expertise, infrastructure quality, and system maintenance, emerged as a key enabler of cloud utilization, ensuring system reliability and operational efficiency. Similarly, organizational constructs, including supportive policies, leadership commitment, and effective change management, were instrumental in fostering organizational readiness and internal alignment for successful technology adoption. The environmental construct, particularly

government support and incentives, also played a critical role in motivating entrepreneurial ventures to adopt and integrate cloud-based technologies. The findings further demonstrated that effective cloud computing utilization strongly enhances entrepreneurial performance by improving agility, scalability, and innovation capability, confirming that the benefits of digital transformation are realized when robust technological support is paired with sound organizational structures (Rubio-Andrés et al., 2024).

Several theoretical and practical implications arise from these findings. First, the study extends the Technology, Organization, and Environment (TOE) framework by providing empirical evidence that technological and organizational readiness jointly drive technology adoption and improve performance outcomes. This reinforces the understanding that successful digital transformation depends on the interplay of technological capabilities, organizational preparedness, and environmental factors rather than on isolated determinants.

Second, given that entrepreneurial ventures heavily rely on internal competencies to leverage digital tools, management should prioritize continuous investment in technical capacity building, including training programs, skill development initiatives, and strategic partnerships with cloud service providers to enhance technical expertise and operational efficiency. Third, since organizational structures and leadership engagement significantly influence cloud computing utilization, entrepreneurs should establish governance frameworks that clearly define roles, responsibilities, and policies supporting digital adoption. Actively involving leadership in digital initiatives will promote accountability, strategic alignment, and more effective technology integration.

**Recommendations**

1. Entrepreneurial ventures should prioritize investment in robust cloud computing infrastructure and technical capabilities. This includes ensuring access to reliable cloud platforms, skilled IT personnel and continuous technical support.
2. Firms should establish flexible policies, adaptive structures and a culture that encourages innovation and learning.
3. Entrepreneurial ventures should actively seek and utilize government programs, regulatory incentives and external support mechanisms that promote cloud computing adoption.

**Suggestions for Further Research**

The research was conducted within a specific regional context, which may restrict the generalizability of its findings to larger organizations operating in different industries or geographical settings. Future comparative research across diverse contexts would enhance the external validity of the results and provide a broader understanding of how contextual differences influence cloud adoption. Finally, entrepreneurial performance in this study was assessed using perceptual indicators rather than objective financial measures. Although subjective evaluations offer valuable managerial perspectives, they may not fully capture the economic impact of cloud computing. Future research could enhance the robustness of performance assessments by incorporating objective data, such as revenue growth, profitability, or innovation metrics.

## REFERENCES

Abdelrahman, M., Papamichail, K. N., Hammady, R., Kurt, Y., Abdallah, W.,

Shixiong Liu, L., & Kapser, S. (2025). Organisational Culture and Knowledge Management Systems Adoption: Examining Employee Usage in Multinational Corporations. *Global Journal of Flexible Systems Management*, 1-29.

Akter, S., Michael, K., Uddin, M. R., McCarthy, G., & Rahman, M. (2022). Transforming business using digital innovations: the application of AI, blockchain, cloud and data analytics. *Annals of Operations Research*, *308*(1), 7-39.

Aligarh, F., Sutopo, B., & Widarjo, W. (2023). The antecedents of cloud computing adoption and its consequences for MSMEs' performance: A model based on the Technology-Organization-Environment (TOE) framework. *Cogent Business & Management*, *10*(2), 2220190.

Alka, T. A., Sreenivasan, A., & Suresh, M. (2025). Entrepreneurial strategies for sustainable growth: a deep dive into cloud-native technology and its applications. *Future Business Journal*, *11*(1), 14.

Al-Sharafi, M. A., Iranmanesh, M., Al-Emran, M., Alzahrani, A. I., Herzallah, F., & Jamil, N. (2023). Determinants of cloud computing integration and its impact on sustainable performance in SMEs: An empirical investigation using the SEM-ANN approach. *Heliyon*, *9*(5).

Al-Said Ahmad, A., Al-Qora'n, L. F., & Zayed, A. (2024). *Exploring the impact of chaos engineering with various user loads on cloud native applications: An exploratory empirical study. Computing.* SpringerLink. https://link.springer.com/article/10.1007/s00607-024-01292-z

Alzate-Alvarado, A. L., Ribes-Giner, G., & Moya-Clemente, I. (2025). Influence of technological capability, management teams and access to finance on sustainable entrepreneurship over time. *International Entrepreneurship and Management Journal*, *21*(1), 89.

Alzide, S. (2024). *Cloud computing: Evolution, challenges, and future prospects*. *Journal of Information Technology, Computing, and Artificial Intelligence*, 14(3), 45–58. https://www.jitcai.org

Babashahi, L., Barbosa, C. E., Lima, Y., Lyra, A., Salazar, H., Argôlo, M.,& Souza, J. M. D. (2024). AI in the workplace: A systematic review of skill transformation in the industry. *Administrative Sciences*, *14*(6), 127.

Calderon-Monge, E., & Ribeiro-Soriano, D. (2024). The role of digitization in business and management: a systematic literature review. *Review of managerial science*, *18*(2), 449-491.

Chen, M., Wang, H., Liang, Y., & Zhang, G. (2023). Net and configurational effects of determinants on cloud computing adoption by SMEs under cloud promotion policy using PLS-SEM and fsQCA. *Journal of Innovation & Knowledge*, *8*(3), 100388.

Chung, B., Franses, P. H., & Pennings, E. (2024). Conditions that make ventures thrive: from individual entrepreneur to innovation impact. *Small Business Economics*, *62*(3), 1177-1200.

Davis, F. D. (1989). *Perceived usefulness, perceived ease of use, and user acceptance of information technology.* MIS Quarterly, 13(3), 319–340.

Donat, V., Haertel, C., Staegemann, D., Daase, C., Pohl, M., Dreschel, D., ... & Turowski, K. (2025). Examining the Impact of Cloud Computing on Organizational Performance: A Systematic Literature Review.

Enonuya, O. T., Paul, I., Yirenkyiwaa, N. R., & Peter, I. E. (2024). Determinants of Cloud Computing Adoption Amongst SMEs in the UK Technology Sector. *Asian Journal of Economics, Business and Accounting*, *24*(11), 514-531.

Feng, K., & Haridas, D. (2025). A unified model integrating UTAUT-Behavioural intention and Object-Oriented approaches for sustainable adoption of Cloud-Based collaborative platforms in higher education. *Scientific Reports*, *15*(1), 24767.

Folorunso, A., Adewa, A., Babalola, O., & Nwatu, C. E. (2024). A governance framework model for cloud computing: Role of AI, security, compliance, and management. *World Journal of Advanced Research and Reviews*, *24*(2), 1969-1982.

Hoque, M. A., Rasiah, R., Furuoka, F., Kumar, S., Adnan, Z. H., & Chowdhury, N. H. (2025). Antecedents and firm performance of sustainable technology adoption in the clothing industry: A study based on the technology–organization–environment framework. *Sustainable Futures*, *10*, 101381.

Humphrey, C. (2023). *Cloud computing.* In F. Maggino (Ed.), *Encyclopedia of Quality of Life and Well-Being Research.* Springer. https://link.springer.com/referenceworkentry/10.1007/978-3-031-17299-1_3011

Jayeola, O., Sidek, S., Abd Rahman, A., Mahomed, A. S. B., & Hu, J. (2022). Cloud computing adoption in small and medium enterprises (SMEs): A systematic literature review and directions for future research. *International Journal of Business and Society*, *23*(1), 226-243.

Jewapatarakul, D., & Ueasangkomsate, P. (2024). Digital organizational culture, organizational readiness, and knowledge acquisition affecting digital transformation in SMEs from food manufacturing sector. *Sage Open*, *14*(4), 21582440241297405.

Katz, R., Jung, J., & Goldman, M. (2024). Cloud Computing and firm performance: a SEM microdata analysis for Israeli firms. *Digital Policy, Regulation and Governance*, *26*(3), 295-316.

Khayer, A., Talukder, M. S., Bao, Y., & Hossain, M. N. (2020). Cloud computing adoption and its impact on SMEs' performance for cloud supported operations: A dual-stage analytical approach. *Technology in Society*, *60*, 101225.

Kwabena, G. Y., Qiang, M., Wenyuan, L., Qalati, S. A., & Erusalkina, D. (2019). Effects of the digital payment system on SMEs performance in developing countries; a case of Ghana. *EPRA International Journal of Economic and Business Review*, *1*, 79-87.

Lawan, M. M., Oduoza, C., & Buckley, K. (2021). A systematic review of cloud computing adoption by organizations.

Malatji, J. S. (2022). *The adoption of efficient technology in emerging markets within State Owned Bank in South Africa* (Master's thesis, University of the Witwatersrand, Johannesburg (South Africa)).

Mell, P., & Grance, T. (2011). *The NIST definition of cloud computing.*

National Institute of Standards and Technology, U.S. Department of Commerce.

Merlo, T. R., Fard, F., & Hawamdeh, S. (2025). Cloud Computing's Impact on the Digital Transformation of the Enterprise: A Mixed-Methods Approach. *Sustainability*, *17*(13), 5755.

Milhem, M., Ayyash, M. M., Ateeq, A., Alzaghal, Q., Alzoraiki, M., Almuraqab, N. A. S., & Almeer, S. (2025). An integrated adoption model of cloud computing-based human resource management by SMEs in developing countries: evidence from Bahrain. *Frontiers in Sustainability*, *6*, 1503423.

Mkhize, A., Mokhothu, K. D., Tshikhotho, M., & Thango, B. A. (2025). Evaluating the Impact of Cloud Computing on SME Performance: A Systematic Review. *Businesses*, *5*(2), 23.

Neicu, A. I., Radu, A. C., Zaman, G., Stoica, I., & Răpan, F. (2020). Cloud computing usage in SMEs. An empirical study based on SMEs employees perceptions. *Sustainability*, *12*(12), 4960.

Oredo, J. & Dennehy, D. (2023). Exploring the role of organizational mindfulness on cloud computing and firm performance: the case of Kenyan organizations. *Information Systems Frontiers*, *25*(5), 2029-2050.

Owoseni, F. D., Ekpudu, J. E., & Oluwaniyi, E. D. (2025). Effect of Cloud Computing on Organizational Performance in the Nigerian Oil and Gas Companies. *Nigerian Journal of Management Studies*, *27*(3), 242-262.

Oyeniran, O. C., Modupe, O. T., Otitoola, A. A., Abiona, O. O., Adewusi, A. O., & Oladapo, O. J. (2024). A comprehensive review of leveraging cloud-native technologies for scalability and resilience in software development. *International Journal of Science and Research Archive*, *11*(2), 330-337.

Rönkkö, M., & Cho, E. (2022). An updated guideline for assessing discriminant validity. *Organizational research methods*, *25*(1), 6-14.

Qatawneh, N. (2024). Building a framework to drive government systems' adoption of cloud computing through IT knowledge .*Discover Sustainability*, *5*(1), 282.

Rubio-Andrés, M., Linuesa-Langreo, J., Gutiérrez-Broncano, S., & Sastre-Castillo, M. Á. (2024). Tackling digital transformation strategy: how it affects firm innovation and organizational effectiveness. *The Journal of Technology Transfer*, 1-26.

Schiersch, A., & Duso, T. (2023). Let's Switch to the Cloud: Cloud Adoption and its Effect on IT Investment and Productivity.

Shawe, R. (2024). Cloud Computing: Purpose and Future. *Journal of Software Engineering and Applications*, *17*(10), 763-769.

Shirpoor, M., & Ranimi, N. (2023). A study of organizational changes that occur to the adoption of cloud computing technologies in organizations: Ministry of Communication and Information Technology in Afghanistan. *Journal of Computer Science and Technology Studies*, *5*(4), 51-61.

Soto-Acosta, P., Popa, S., & Palacios-Marqués, D. (2017). Social web knowledge sharing and innovation performance in knowledge-intensive manufacturing SMEs. *The Journal of Technology Transfer*, *42*(2), 425-440.

Syarifudin, N. A., & Zaenal Abidin, S. (2024). Exploring the Impact of Cloud Service Quality on Customer Loyalty towards Cloud Service Providers: A Stimulus Organism Response (SOR) Approach. *Journal of Advances in Information Systems and Technology*, *6*(2), 236-255.

Tornatzky, L. G., & Fleischer, M. (1990). *The processes of technological innovation.* Lexington Books.

Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). *User acceptance of information technology: Toward a unified view.* MIS Quarterly, 27(3), 425–478.

Wiese, S. A., Lehmann, J., & Beckmann, M. (2024). Organizational culture and the usage of Industry 4.0 technologies: Evidence from Swiss businesses. *arXiv preprint arXiv:2412.12752*.

Yang, D., Li, R., & Liu, S. (2025). Exploring the Influence of Cloud Computing on Supply Chain Performance: The Mediating Role of Supply Chain Governance. *Journal of Theoretical and Applied Electronic Commerce Research*, *20*(2), 70.

Zhao, Z., Peng, Y., & Xie, J. (2021). *Machine learning–centric resource management in cloud computing: A review*. *Journal of Cloud Computing*, 10(1), 1–20.