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Digital Technology Adoption and Growth of Youth Entrepreneurship in Kaduna State

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ABSTRACT
The digital revolution has transformed global entrepreneurship, offering young business owners unprecedented opportunities for innovation and growth. However, in Kaduna State, Nigeria, the potential of digital technologies to catalyze youth entrepreneurship remains overlooked and unevenly realized. While digital tools like e-commerce platforms and cloud computing show limited adoption among young entrepreneurs. This study investigates the effect of digital technology adoption on the growth of youth entrepreneurship in Kaduna State. A survey research design was employed, targeting 375 registered young entrepreneurs drawn using Krejcie and Morgan's (1970) sample size table. Primary data was collected through structured questionnaire and analyzed using Partial Least Squares Structural Equation Modelling (PLS-SEM). The findings revealed that cloud computing does not have a statistically significant effect on youth entrepreneurship growth. However, e-commerce, crowdfunding, and digital payment platforms exhibited a significant positive effect, enhancing business accessibility, funding opportunities, and transaction efficiency. Based on these findings, it was recommended that government agencies, entrepreneurship development centres, and private sector stakeholders should promote affordable cloud services for youth entrepreneurs. Moreover, youth entrepreneurs should be encouraged to adopt e-commerce channels to expand market reach beyond local boundaries.

Keywords: *Adoption, Cloud Computing, Digital Technology, E-commerce, Youth Entrepreneurship*

INTRODUCTION
The rise of youth entrepreneurship globally reflects the increasing influence of digital technology in transforming business and entrepreneurial ventures. Youth entrepreneurship has become a fundamental driver of economic growth and innovation worldwide, with increasing recognition of its role in job creation, poverty reduction, and technological advancement (UNDP, 2025). Globally, developed economies such as the United States and Germany have established strong entrepreneurial ecosystems, supported by digital technology, funding opportunities, and favourable policies that enable young entrepreneurs to scale their businesses (Gupta et al., 2023). In emerging markets, countries like China and India have witnessed a surge in youth-led start-ups, particularly in the technology and e-commerce sectors, driven by increased internet penetration and government-backed funding initiatives (Kim et al., 2023).

However, in developing regions, including Nigeria, youth entrepreneurship remains constrained by limited access to capital, weak infrastructure, and regulatory challenges, despite growing efforts to foster digital

entrepreneurship and financial inclusion (Ngwenya & Mashau, 2019). The current state of youth entrepreneurship in these regions is characterised by high business failure rates and limited scalability, whereas the desired state is one where young entrepreneur has enhanced access to funding, digital resources, mentorship, and policy support to sustain and grow their ventures. Bridging this gap requires a combination of targeted policies, digital transformation, and entrepreneurial education to create a more supportive ecosystem for youth-driven enterprises globally.

Furthermore, the integration of cloud computing in entrepreneurship has transformed business operations worldwide, particularly benefiting young entrepreneurs by providing scalable, cost-effective, and efficient digital resources. Globally, cloud computing enables start-ups to leverage computing power without the need for large capital investments, leading to increased innovation and market competitiveness (DeStefano et al., 2023). In regions such as North America and Europe, cloud-based infrastructure has facilitated business growth through enhanced accessibility to artificial intelligence (AI) tools, big data analytics, and seamless digital collaboration (Duan et al., 2023). In emerging economies, cloud computing is also playing a critical role in overcoming barriers to entry for young entrepreneurs. Studies have shown that the adoption of cloud-based solutions significantly boosts productivity among small and medium enterprises (SMEs) in Asia and Latin America (Waqar et al., 2023). In Africa, cloud computing adoption remains in a developing phase due to infrastructure limitations, yet research indicates that its expansion has the potential to drive youth-led business growth, particularly in digital start-ups (Ngwenya & Mashau, 2019). The benefits of cloud computing in youth entrepreneurship are evident in enabling cost-efficient operations, remote business management, and scalable market entry.

In developing regions, including Nigeria, youth entrepreneurship remains constrained by limited access to finance, weak infrastructure, and regulatory bottlenecks, resulting in high business failure rates and limited scalability despite growing efforts to promote digital entrepreneurship and financial inclusion (Ngwenya & Mashau, 2019). Bridging this gap requires targeted policies, digital transformation, and entrepreneurship education to create a supportive ecosystem for sustainable youth-led enterprises.

Globally, the integration of cloud computing has transformed entrepreneurial operations by providing scalable, cost-effective digital resources that reduce entry barriers for young entrepreneurs. In advanced economies, cloud-based infrastructure enhances innovation through access to artificial intelligence, data analytics, and digital collaboration tools, while in emerging economies it significantly improves SME productivity and competitiveness (DeStefano et al., 2023; Duan et al., 2023; Waqar et al., 2023). Although cloud adoption in Africa is still developing due to infrastructural constraints, evidence suggests it holds strong potential to support youth-led digital start-ups by enabling efficient operations, remote management, and scalable market entry (Ngwenya & Mashau, 2019).

In addition, the rise of E-commerce platforms has significantly contributed to youth entrepreneurship by creating vast market opportunities through digital transactions. Globally, businesses are increasingly relying on e-commerce to reduce operational costs, improve market reach, and enhance customer engagement through AI-driven recommendations and automated services (Gaikwad et al., 2024). In Asia and Europe, live commerce platforms are revolutionizing digital entrepreneurship, enabling real-time product demonstrations and interactive customer engagement (Kim et al., 2023). Meanwhile, African entrepreneurs are embracing e-commerce solutions to bridge geographical barriers and facilitate seamless transactions, although challenges such as limited payment infrastructure and internet penetration persist (Rahmah, 2022). Research indicates that e-commerce significantly boosts youth entrepreneurship by lowering entry barriers, increasing accessibility to global markets, and improving business sustainability (Fan & Zhai, 2023). However, policy gaps and infrastructural challenges continue to hinder the full adoption of e-commerce as a driver of youth-led enterprises, particularly in developing economies.

Youth entrepreneurship is increasingly recognized as a critical driver of economic development, employment creation, and innovation in both developed and developing economies. Globally, countries such as the United

States, China, and Germany have successfully leveraged digital technologies, financial inclusion mechanisms, and entrepreneurship education to stimulate youth-led enterprises, thereby contributing significantly to economic resilience and technological advancement (Gupta et al., 2023). In emerging economies, particularly across Asia and Latin America, youth entrepreneurship has been strengthened through access to digital platforms, government-supported financing schemes, and expanding market opportunities. Nevertheless, challenges such as regulatory constraints and intense market competition remain prevalent (Kim et al., 2023). In contrast, despite increasing recognition of youth entrepreneurship as a viable response to unemployment and economic stagnation in Africa, young entrepreneurs continue to encounter substantial barriers, including limited access to finance, inadequate digital infrastructure, weak policy frameworks, and insufficient entrepreneurial training and support systems (Ngwenya & Mashau, 2019).

The issue lies in the persistent barriers that hinder the sustainable growth of youth-led enterprises, particularly in developing regions. While studies such as Zhang (2022) have highlighted the role of cloud computing in enhancing business efficiency, the adoption rate of digital technology among youth entrepreneurs remains low, particularly in Africa, due to high costs and digital illiteracy. Furthermore, Rahmah (2022) noted that although e-commerce platforms offer significant potential for business expansion, infrastructural deficits and unreliable digital payment systems limit their effectiveness for young entrepreneurs in low-income economies. Crowdfunding, a major financing tool for start-ups in developed economies, remains underutilised in Africa due to weak investor confidence and regulatory uncertainties (Kumar et al., 2024). Similarly, Bhuiyan et al. (2024) argued that while digital payment platforms have revolutionised transactions worldwide, inconsistent financial policies and cybersecurity concerns have limited their adoption among young entrepreneurs in emerging markets.

This relevance of addressing these issues is crucial for fostering economic growth, reducing youth unemployment, and enhancing global competitiveness. Studies by DeStefano et al. (2023) indicated that digital technology can significantly enhance entrepreneurial success, but there is a need for a tailored approach that considers regional disparities in infrastructure, financial accessibility, and regulatory frameworks. Despite the increasing body of research on youth entrepreneurship, gaps remain regarding the practical integration of digital technology into entrepreneurial ecosystems in resource-limited settings. Many existing studies focus on either technology adoption or entrepreneurship independently, without adequately exploring the intersection of cloud computing, e-commerce, crowdfunding, and digital payment systems in youth entrepreneurship growth, particularly in Africa.

Therefore, the objective of this study is to investigate the role of digital technology adoption specifically cloud computing, e-commerce platforms, crowdfunding, and digital payment systems in the growth of youth entrepreneurship in Kaduna State. While the specific objectives are to:

i. evaluate the effect cloud computing on the growth of youth entrepreneurship in Kaduna State.

ii. investigate the effect of E-commerce on the growth of youth entrepreneurship in Kaduna State.

In order to evaluate the effect of digital technology adoption on the growth of youth entrepreneurship in Kaduna State, the following research hypotheses are proposed:
H_{01}: Cloud computing has no significant effect on the growth of youth entrepreneurship in Kaduna State.
H_{02}: E-commerce has no significant effect on the growth of youth entrepreneurship in Kaduna State.

LITERATURE REVIEW

Growth

Growth in business is often understood as the increase in a company's market share, revenue, or profit over time. This type of growth is typically achieved through strategies such as market penetration, product development, and mergers and acquisitions (García-García et al., 2020). It can also involve expanding the

company's operations geographically or diversifying its product line to reach new customer segments (Vahlne & Johanson, 2017). Additionally, growth in business may refer to the scaling of operations to increase production capacity or improve efficiency, often enabled by technological advancements or process innovations (Schilling & Shankar, 2019). Organizational growth pertains to the development of an organization's structure, culture, and capabilities. This study viewed growth as the expansion of market share, revenue, or customer bases, driven by strategic initiatives aimed at innovation and market penetration.

Digital Technology Adoption

Digital technology adoption refers to the process through which individuals, organisations, or societies embrace and implement new digital tools and systems to enhance their operations or daily activities. According to Yang et al. (2021), digital technology adoption involves adopting technologies that significantly improve efficiency, sustainability, and innovation among manufacturers and business partners. Digital technology adoption was described by Kane et al. (2019) as the process by which organisations integrate new digital tools and systems into their operations to improve efficiency and achieve strategic objectives. They emphasised that adoption was not simply about acquiring technology but involved embedding it into organisational routines and culture to realise value.

Cloud Computing

Cloud computing according to Mell and Grance (2017), is a model enabling ubiquitous, convenient, on-demand network access to a shared pool of configurable computing resources such as networks, servers, storage, applications, and services. They stated that these resources could be rapidly provisioned and released with minimal management effort or service provider interaction. Crowdfunding was defined by Soreh (2017) as a method of raising capital through collective contributions from individuals, a concept that, although not novel, had gained exponential attention in recent decades. Halim (2024) added that crowdfunding campaigns were typically structured with a completed roadmap and a set deadline, where contributors made backing decisions characterised by delayed gratification, receiving promised rewards only after the campaign concluded. Johan and Reardon (2024) described crowdfunding platforms such as Kickstarter and Patreon as trustworthy intermediaries facilitating connections between investors and entrepreneurs, thereby enhancing the accessibility and efficiency of fundraising.

E-Commerce Platform

E-commerce platform according to Abdullah (2017) referred to a digital medium that facilitate the sale of goods and services through the internet, revolutionising interactions between buyers and sellers. Alfaro et al. (2021) defined E-commerce platforms as technological solutions allowing companies to engage with consumers efficiently, thereby creating opportunities to enhance business operations. Grzybowska and Sobstyl (2020) described E-commerce as a rapidly growing segment of the digital market that evolved in response to increased mobile device usage and internet penetration. Das et al. (2022) asserted that an E-commerce platform functioned as an online site that hosted, organised, and circulated content while facilitating transactions among various stakeholders.

Cloud Computing and Growth of Youth Entrepreneurship

Zeng et al. (2022) investigated the role of cloud computing in fostering innovation and entrepreneurship education in universities. The study was conducted in China, using a mixed-method research design, with a population comprising students and faculty members from multiple universities. A stratified random sampling technique was applied, resulting in a final sample of 250 participants. Data were collected using online surveys and structured interviews, and a thematic analysis approach was used. The study indicated that cloud computing platforms provided significant benefits in enhancing collaboration, accessibility to learning resources, and cost-effectiveness in entrepreneurship training. However, the study was critiqued for its limited generalisability to non-academic entrepreneurial settings.

Agyemang and Damoah (2020) conducted a quantitative study in Ghana focusing on the impact of cloud

computing on the growth of youth entrepreneurship. The research utilised a cross-sectional survey design, targeting young entrepreneurs aged 18-35. The population comprised approximately 2,000 young entrepreneurs, with a sample of 300 selected through purposive sampling technique. Data were collected via structured questionnaires, ensuring a comprehensive understanding of how cloud computing influences business operations. The analysis employed descriptive and inferential statistics, revealing that cloud computing significantly enhances operational efficiency and reduces costs for young entrepreneurs. However, the study did not delve deeply into the specific challenges faced by these entrepreneurs in adopting cloud technologies, which could have provided a more nuanced understanding of the barriers to implementation.

E-Commerce Platform and Growth of Youth Entrepreneurship

Qi et al. (2022) investigated how e-commerce platforms contribute to supply chain resilience, particularly in response to disruptions such as the COVID-19 pandemic. The study focused on a Chinese e-commerce platform, collecting data from operational reports and supplier performance metrics. Using regression analysis, the research found that strong integration between platforms and suppliers through information sharing, joint planning, and logistics coordination enhanced supply chain stability. However, excessive reliance on procurement automation had a negative impact. A limitation of the study is its focus on China, making it difficult to generalise findings to other regions with different supply chain structures.

Naruetharadhol et al. (2023) studied consumer acceptance of an e-commerce platform selling imperfect (ugly) vegetables in Thailand. The research used cluster analysis and structural equation modeling to assess how health-consciousness influences purchasing decisions. A survey of 390 consumers was conducted across four provinces. The results indicated that highly health-conscious consumers were more willing to purchase imperfect vegetables, while lower health-conscious segments showed minimal interest. The study highlighted the need for targeted marketing to shift consumer perceptions. However, a limitation was its focus on health-conscious consumers, ignoring other potential market segments.

Technology Acceptance Model

In 1985, Fred Davis proposed the Technology Acceptance Model (TAM), a framework that explores how users come to accept and use new technologies. TAM posits that the adoption of technology is influenced by three key factors: perceived usefulness, perceived ease of use, and the user's attitude toward using the technology. According to Acheampong et al. (2017), attitudes, beliefs, and ultimately planned behavior play crucial roles in determining whether an individual will utilize a specific technology. This implies that before a technology can be adopted, individuals must assess its usefulness, understand how it will be applied, and cultivate an attitude that influences its acceptability.

The strengths of TAM lie in its practical application for organizations looking to implement new digital technologies. Wu and Chen (2017) note that TAM helps organizations evaluate how a digital technology can assist in achieving their marketing goals. By understanding user attitudes toward a particular technology, businesses can tailor their strategies to effectively target specific market segments. For instance, the attitudes of a customer base toward platforms like social media or the internet can guide companies in selecting appropriate digital strategies for optimal market penetration.

However, a notable weakness of TAM is its limited consideration of external factors that may influence technology acceptance, such as social influence or the technological infrastructure available to users. While the model effectively addresses individual attitudes and perceptions, it may overlook broader contextual elements that impact users' decisions to adopt technology. This limitation is particularly relevant in discussions surrounding the adoption of computing devices and digital payment platforms, where external factors such as peer influence and technological support can significantly affect user acceptance.

In relation to E-commerce and digital marketing, TAM emphasizes the importance of understanding user

perceptions and attitudes in fostering technology adoption. As organizations navigate the digital landscape, leveraging insights from TAM can enhance their marketing strategies and improve customer engagement. The model's emphasis on user attitudes prior to technology use is especially relevant in a rapidly evolving digital environment, where businesses must adapt to changing consumer preferences and behaviors to maintain competitive advantages in the marketplace.

METHODOLOGY

This study adopted a survey research design to evaluate how digital technology adoption affect the growth of youth entrepreneurship in Kaduna State. The study population comprise of all registered youth entrepreneurship that operate in Kaduna State. According to Kaduna State Bureau of Statistics (2022) there are 3027 registered young entrepreneurs in Kaduna State Nigeria. A sample of 341 was drawn from the targeted population using Krejcie and Morgan's (1970) sample size table with a 95% level of confidence and a 3.5% margin of error. However, the sample size was increased by 10% to cover emergent issues of unreturned and wrongly filled questionnaires (Israel, 2013), which can be explained as follows:

$$\frac{10}{100} \times \frac{341}{1} = 34.1$$

$$341+34.1 = 375.1$$

Therefore, the estimated sample size for the study is 375. Purposive sampling technique was employed to sample only registered young entrepreneurship within Kaduna State, Nigeria. For the purpose of this study, primary data was collected using a structured questionnaire.

Furthermore, the questionnaire containing questions related to the growth of youth entrepreneurship, the use of cloud computing, E-commerce, the adoption crowd funding, and digital payment platforms that was adapted from the work of (Gran-Henriksen & Bjerke, 2022). The questions in this section are aimed at understanding how digital technology adoption influences the growth of youth entrepreneurship. Respondents were required to answer these questions using a 5-point Likert scale, where they can indicate their level of agreement or disagreement with each statement. The response options are as follows: Strongly Agree (SA) = 5, Agree (A) = 4, Neutral (N) = 3, Disagree (D) = 2, and Strongly Disagree (SD) = 1.

Validity and Reliability

As a result, 30 copies of questionnaire were piloted within Kaduna metropolitan city, and the respondents were not part of the main research. In this study, content validity was determined by having an expert who in this case is the supervisor and three lecturers from entrepreneurship and business administration, were requested to check whether the contents of the questionnaire addressed the study objectives. The content of the questionnaire was ensured to cover all relevant aspects of the subject being measured so as to ascertain that questionnaire cover every applicable subject measured. Evaluation of the reliability was done using a Cronbach alpha test, using data. As a result, this study strived for an alpha correlation coefficient of at least 0.7.

Table 1: Reliability Test Table

Variables	Number of Items	Alpha Value
Growth	5	0.758
Cloud Computing	5	0.823
E-commerce	5.	0.798

Source: Pilot Study (2025)

The test was done to determine whether the questionnaire used in data collection was suitable. The 0.7 threshold for Cronbach's Alpha (α) was applied where items with α greater equal to or more prominent than 0.7 would have a much higher reliability value. Table 3.1 indicates the 0.7 threshold was met by all the variables which was evidence that the questionnaires were reliable.

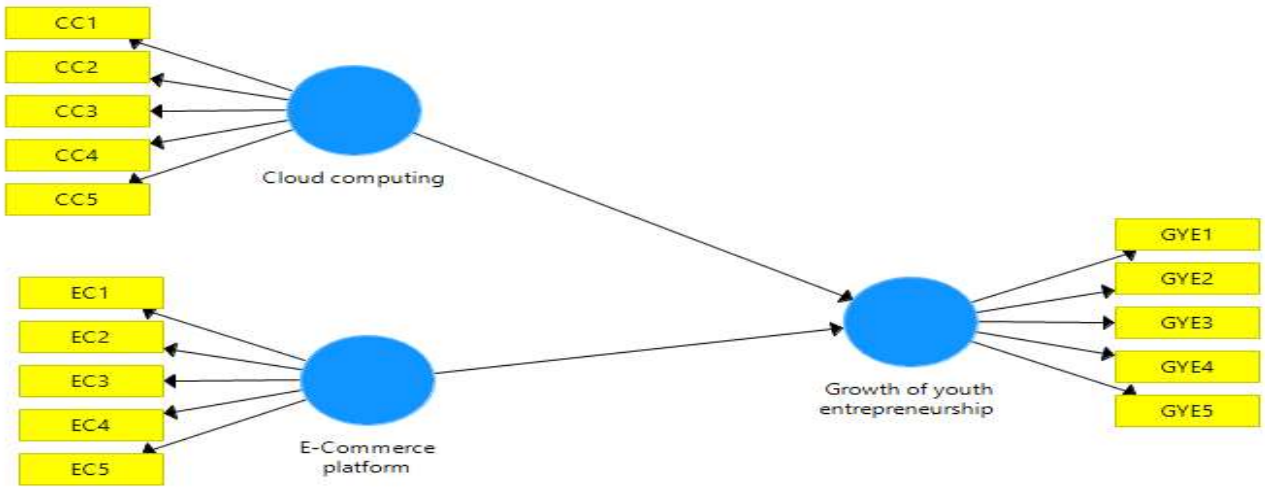
Table 2: Variables Measurement

Variables	Measurement	Source
Cloud Computing	Ordinal	Marston et al. (2011), Armbrust et al. (2010), Rittinghouse & Ransome (2017)
E-commerce	Ordinal	Turban et al. (2018), Laudon & Traver (2020), Chaffey (2019)
Entrepreneurship Growth	Ordinal	Smidt & Jokonya (2023), Wong & Kemp (2017), Adeosun et al. (2020)

Source: Researchers' Computation, 2025

Furthermore, the quantitative data collected for this study was processed using SPSS, employing various analytical techniques such as frequency distribution tables and percentages to summarise and present the data. However, Partial Least Squares Structural Equation Modelling (PLS-SEM) technique was employed to analyse the relationships between multiple latent (unobserved) variables and observed variables. The model is presented as thus:

Figure 1: Graphical Model



Note: Growth is the dependent variable, while cloud computing, E-commerce, are the independent proxies.

DATA ANALYSIS AND DISCUSSION

Table 3: Questionnaire Response Rate

Variables	Frequency	Percentage (%)
Questionnaires Distributed	375	100
Questionnaires Returned	364	97.07
Eliminated after Data Cleaning	8	2.13
Total Respondents after Data Cleaning	356	94.93

Source: *Field Survey, 2025*

Table 3 presented the questionnaire response rate for the study on digital technology adoption and the growth of youth entrepreneurship in Kaduna State. A total of 375 questionnaires were distributed to youth entrepreneurs across the study area, out of which 364 were successfully returned, representing a response rate of 97.07 per cent. This high retrieval rate reflected strong respondent cooperation and indicated the relevance

of the study to the target population. Following data screening and cleaning procedures, 8 questionnaires were excluded due to incomplete responses and inconsistencies, resulting in 356 usable questionnaires. The final valid response rate of 94.93 per cent exceeded the minimum threshold recommended for quantitative survey studies and provided a robust dataset for further analysis. The high response rate enhanced the reliability of the findings and reduced the likelihood of non-response bias.

In PLS-SEM (Partial Least Squares Structural Equation Modeling), the measurement model is a critical part of the analysis. The measurement model specifies the relationships between observed variables (indicators) and their underlying latent constructs. It is composed of two main components: reflective and formative indicators. Reflective indicators are those that reflect the underlying construct they were measuring, while formative indicators contributed to defining the underlying construct. The measurement model was estimated through the calculation of factor loadings, which indicated the strength of the relationship between each observed variable and its underlying latent construct.

In this study, all indicators assessed in SmartPLS met the commonly accepted threshold of 0.7 for factor loadings, indicating strong reliability and validity of the measurement model. Additionally, these indicators met the Average Variance Extracted (AVE) threshold and were statistically significant, further supporting their inclusion in the final model. This approach ensured that the measurement model remained both statistically robust and conceptually comprehensive. (Collier, 2020; Hair et al., 2014). The result is shown in Figure 2 and Table 4.6.

Figure 2: Measurement Model

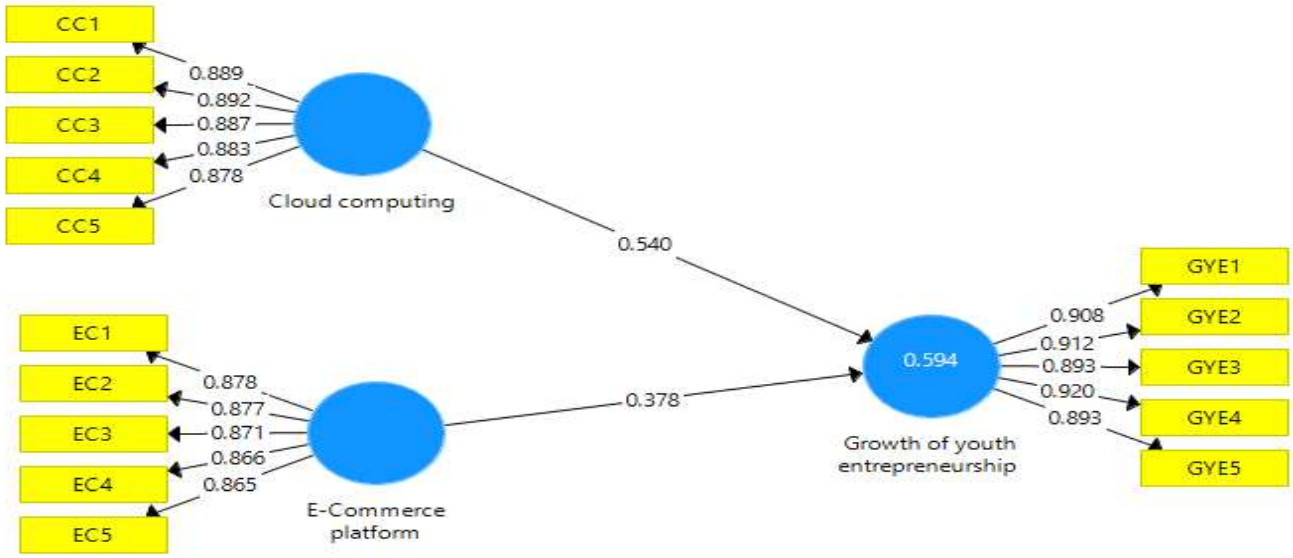


Table 4: Convergent Validity and Reliability of the Constructs and Indicators

Items	Loadings	Cronbach's Alpha	Composite Reliability	Average Variance Extracted (AVE)
	Cloud computing	0.877	0.910	0.671
CC1	0.889			
CC2	0.892			
CC3	0.887			

CC4	0.883			
CC5	0.878			
	E-Commerce platform	0.878	0.911	0.672
EC1	0.878			
EC2	0.877			
EC3	0.871			
EC4	0.866			
EC5	0.865			
	Growth of youth entrepreneurship	0.829	0.879	0.594
GYE1	0.908			
GYE2	0.912			
GYE3	0.893			
GYE4	0.920			
GYE5	0.893			

Source: *SmartPLS Output, 2025*

Table 4 presents the convergent validity and reliability results for cloud computing, e-commerce platform, and growth of youth entrepreneurship. All indicator loadings exceeded the minimum threshold of 0.70, indicating strong item reliability and showing that each item adequately measured its respective construct. The Cronbach's Alpha values for cloud computing (0.877), e-commerce platform (0.878), and growth of youth entrepreneurship (0.829) were all above the recommended benchmark of 0.70, confirming satisfactory internal consistency among the measurement items. Composite Reliability values also surpassed the acceptable level of 0.70, further confirming construct reliability in line with established PLS-SEM standards. The Average Variance Extracted (AVE) values for all constructs were above 0.50, indicating that each construct explained more than half of the variance in its indicators. These results confirm adequate convergent validity and suggest that the measurement model was reliable and suitable for further structural analysis in the context of digital technology adoption and youth entrepreneurship growth in Kaduna State.

Table 5: Heterotrait-Monotrait (HTMT) Ratio

	Cloud computing	E-Commerce platform	Growth of youth entrepreneurship
Cloud computing			
E-Commerce platform	0.400		
Growth of youth entrepreneurship	0.722	0.618	

Source: *SmartPLS Output, 2025*

Table 5 reports the Heterotrait-Monotrait (HTMT) ratio, which assesses discriminant validity. An HTMT value below 0.85 is considered acceptable, while values above 0.90 indicate a lack of discriminant validity (Henseler et al., 2015).

Table 6: Coefficient of Determination

	R Square	**R Square Adjusted**
Growth of youth entrepreneurship	0.594	0.590

Source: *SmartPLS Output, 2025*

Table 6 shows the coefficient of determination for the endogenous construct, growth of youth entrepreneurship. The R^2 value of 0.594 indicates that digital technology adoption explained 59.4% of the variation in youth entrepreneurship growth in Kaduna State. This level of explanatory power reflects a strong

model and suggests that cloud computing and e-commerce platforms jointly played a substantial role in driving entrepreneurial growth among youths. The adjusted R^2 value of 0.590 further supports the robustness of the model by showing minimal shrinkage after adjusting for the number of predictors. These findings demonstrate that digital technology adoption accounted for a significant proportion of changes in youth entrepreneurship growth.

Figure 3: Structural model

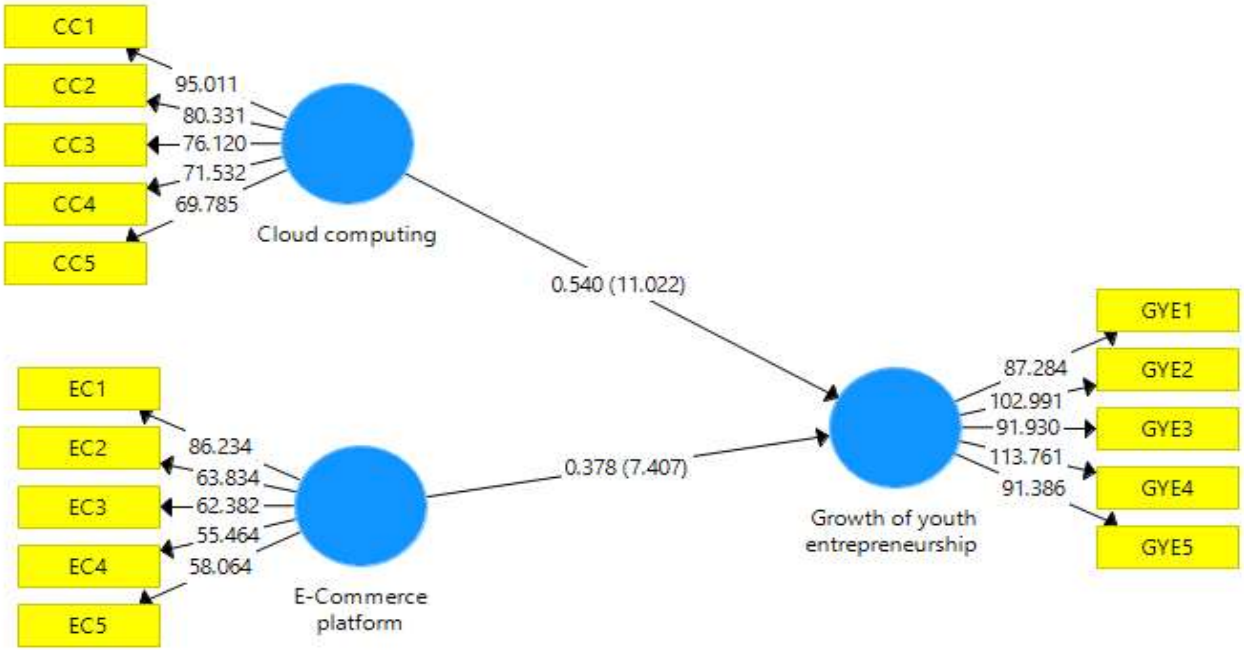


Table 7: Path Coefficient

Hypotheses	Beta	Sample Mean	Standard Deviation	T Statistics	P Values
Cloud Computing -> Growth of Youth Entrepreneurship	0.540	0.541	0.049	11.022	0.000
E-commerce -> Growth of Youth Entrepreneurship	0.378	0.378	0.051	7.407	0.000

Source: *SmartPLS Output, 2025*

Table 7 shows the structural relationships between digital technology adoption and growth of youth entrepreneurship in Kaduna State. Cloud computing had a strong positive and significant effect on youth entrepreneurship growth, with a beta coefficient of 0.540, a t-statistic of 11.022, and a p-value of 0.000. This result indicates that increased use of cloud-based services significantly improved the growth of youth-owned enterprises by enhancing efficiency, scalability, and cost reduction. This finding supports Zeng et al. (2022), who reported that cloud computing improved collaboration and resource accessibility in entrepreneurial activities, and Agyemang and Damoah (2020), who found a significant positive effect of cloud computing on youth entrepreneurship growth in Ghana through improved operational efficiency and reduced costs.

E-commerce platforms also showed a positive and significant effect on growth of youth entrepreneurship, with a beta value of 0.378, a t-statistic of 7.407, and a p-value of 0.000. This suggests that adoption of e-commerce platforms enhanced market access, customer reach, and sales performance of youth-owned businesses. This result aligns with Qi et al. (2022), who found that e-commerce platforms improved business performance through better digital integration and coordination, and Naruetharadhol et al. (2023), who

showed that e-commerce platforms influenced consumer purchasing behaviour and supported niche market expansion. Overall, the findings confirm that cloud computing and e-commerce platforms significantly drove youth entrepreneurship growth in Kaduna State.

CONCLUSION AND RECOMMENDATIONS

The study investigated how digital technology adoption on the growth of youth entrepreneurship in Kaduna State. In conclusion, digital technology adoption plays a crucial role in fostering the growth of youth entrepreneurship in Kaduna State. Cloud computing significantly influence youth entrepreneurship growth, e-commerce was also found to be essential driver of youth entrepreneurship growth. These technologies enhance operational efficiency, provide alternative financing, and facilitate financial transactions, enabling youth entrepreneurs to thrive in a competitive business environment.

Based on the findings, the following recommendations were raised:

Government agencies, entrepreneurship development centres, and private sector stakeholders should promote affordable cloud services for youth entrepreneurs. Training programmes should focus on practical use of cloud tools for record keeping, collaboration, inventory management, and data security in order to improve business efficiency and scalability.

Youth entrepreneurs should be encouraged to adopt e-commerce channels to expand market reach beyond local boundaries. Government agencies should support the development of reliable digital payment systems and logistics infrastructure to strengthen e-commerce operations and reduce transaction barriers faced by youth-owned businesses. Additionally, providing access to affordable digital tools such as e-commerce platforms and marketing software will empower young entrepreneurs to establish and grow their online businesses.

REFERENCES

Abdullah, M. N. (2017). E-commerce web platform development. *E-commerce Journal*, 1(1), 1-10.

Agyemang, G., & Damoah, J. (2020). Cloud computing and the growth of youth entrepreneurship in Ghana. *Journal of Entrepreneurship and Innovation in Emerging Economies, 6*(2), 123-134. https://doi.org/10.1177/2516366720901234

Agyemang, G., & Damoah, J. (2020). Cloud computing and the growth of youth entrepreneurship in Ghana. *Journal of Entrepreneurship and Innovation in Emerging Economies, 6*(2), 123-134. https://doi.org/10.1177/2516366720901234

Alfaro, J. B., Alas, J. L. S. D., & Dimla, P. R. (2021). Development of e-commerce platform for agribusiness company. *1st International Conference in Information and Computing Research (iCORE)*, 6-10. https://doi.org/10.1109/iCORE54267.2021.00020

Bhuiyan, M. R. I., Akter, M. S., & Islam, S. (2024). How does digital payment transform society as a cashless society? An empirical study in the developing economy. *Journal of Science and Technology Policy Management, 15*(1), 72-98.

Collier, J. E. (2020). *Applied structural equation modeling using AMOS: Basic to advanced techniques*. Routledge.

Das, M., Dash, A., Jaiswal, S., Mathew, B., Saha, P., & Mukerjee, A. (2022). Platform governance. *GetMobile: Mobile Computing and Communications*, 26(1), 14-20. https://doi.org/10.1145/3539668.3539674

Davis, S. R. M. (2021). Digital marketing strategies in Canadian startups: A qualitative approach. *International Journal of Entrepreneurial Behavior & Research*, 27(4), 925-943. https://doi.org/10.1108/IJEBR-06-2020-0365

Gaikwad, D., Ingale, P., Divekar, P., Changede, S., & Bhuwad, S. (2024). AI-enabled e-commerce platform. *International Journal of Advanced Research in Science, Communication and Technology*.

García-García, R., Agulló-Tomás, E., & Gutiérrez-López, L. R. (2020). Exploring the relationship between

organizational learning capability and performance in the Spanish hospitality industry: A case study. *European Research on Management and Business Economics, 25*(1), 1-8.

Grzybowska, K., & Sobstyl, B. (2020). The comparison of e-commerce platforms. *E-commerce Studies*, 5(2), 20-30.

Gupta, B. B., Gaurav, A., & Panigrahi, P. (2023). Analysis of the development of sustainable entrepreneurship practices through knowledge and smart innovative-based education system. *International Entrepreneurship and Management Journal, 19*(5), 923-940.

Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2013). *Multivariate datysis* (7th ed.). Pearson.

Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2014). *A primer on partial least squares structural equation modeling (PLS-SEM)*. SAGE Publications.

Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2021). *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)* (3rd ed.). Sage Publications.

Halim, M. (2024). The impact of FinTech on crowdfunding efficiency. *International Journal of Financial Innovation*, 12(3), 45-60.

Johan, S., & Reardon, J. (2024). Trust and crowdfunding platforms. *Entrepreneurship Theory and Practice*, 48(2), 345-367.

Kaduna State Bureau of Statistics (2022). Official publication of Kaduna State bureau of statistics (KDBS). 3rd quarter newsletter. Retrieved from: https://kdbs.ng/publication/2

Kane, G. C., Palmer, D., Phillips, A. N., Kiron, D., & Buckley, N. (2019). *Accelerating digital innovation inside and out: Agile teams, ecosystems, and ethics*. MIT Sloan Management Review. https://sloanreview.mit.edu/projects/accelerating-digital-innovation/

Kim, J., He, N., & Miles, I. (2023). Live commerce platforms: A new paradigm for e-commerce platform economy. *Journal of Theoretical and Applied Electronic Commerce Research, 18*, 959-975.

Kumar, J., Rani, M., Rani, G., & Rani, V. (2024). Crowdfunding adoption in emerging economies: Insights for entrepreneurs and policymakers. *Journal of Small Business and Enterprise Development, 31*(1), 105-125.

Mell, P., & Grance, T. (2017). The NIST definition of cloud computing. *National Institute of Standards and Technology Special Publication 800-145*. https://doi.org/10.6028/NIST.SP.800-145

Naruetharadhol, P., Wongsaichia, S., Pienwisetkaew, T., Schrank, J., Chaiwongjarat, K., Thippawong, P., Khotsombat, T., & Ketkaew, C. (2023). Consumer intention to utilize an e-commerce platform for imperfect vegetables based on health-consciousness. *Foods, 12*.

Ngwenya, C., & Mashau, P. (2019). Entrepreneurship literacy among youth SMMEs in Ethekwini Municipality. *Gender and Behaviour, 17*(4), 12479-12492.

Qi, Y., Wang, X., Zhang, M., & Wang, Q. (2022). Developing supply chain resilience through integration: An empirical study on an e-commerce platform. *Journal of Operations Management*.

Schilling, M. A., & Shankar, R. (2019). *Strategic management of technological innovation* (6th ed.). McGraw-Hill Education.

United Nations Development Programme. (2025, April 17). *Unlocking economic opportunity for youth*. https://www.undp.org/speeches/unlocking-economic-opportunity-youth

Vahlne, J. E., & Johanson, J. (2017). The Uppsala model on evolution of the multinational business enterprise: From internalization to coordination of networks. *International Marketing Review, 30*(3), 189-210.

Yang, M., Fu, M. D., & Zhang, Z. (2021). The adoption of digital technologies in supply chains. *Technological Forecasting and Social Change*.

Zeng, W., Qin, F., Li, L., Li, Y., & Bai, N. (2022). Ecosystem of innovation and entrepreneurship education in universities based on cloud computing. *2021 International Conference on Big Data Analytics for Cyber-Physical System in Smart City*, 1(1), 45–53.