

# Effect Of Digital Technology on The Performance of Smes in North East, Nigeria

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*Abstract- This study examined the effect of digital technology on the performance of small and medium scale enterprises in North east Nigeria. The study adopted a survey research design. The population of the study comprised 71,545 registered SMEs operating within the North East region of Nigeria. However, the Taro Yamane (1967) formula was used to determine a sample size of 398 respondents. The study further employed a convenience sampling technique to select and reach the respondents. Data were collected using a structured questionnaire designed on a 5-point Likert scale. The collected data were then analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM). The study found a positive and significant effect of both online payment systems and artificial intelligence adoption on the performance of SMEs in North east. Base on the study findings, it recommends that SMEs in should adopt more artificial intelligence tools and make sure they are used effectively in daily operations. This can be done by investing in affordable AI solutions and training staff to build digital skills. Finally, SMEs should strengthen the use of online payment systems by encouraging cashless transactions and using secure digital platforms. With proper training and reliable internet access, these tools will help improve efficiency, reduce errors, and enhance overall business performance.*

**Key Words:** *Digital Technology, Online Payment Systems, Artificial Intelligence Adoption and Performance.*

## I. INTRODUCTION

Small and medium enterprise (SMEs) performance has attracted increasing attention in recent years due to its central role in driving economic growth, employment, and innovation in developing economies such as Nigeria. As the business environment becomes more dynamic and competitive, the ability of SMEs to improve efficiency, expand market reach, and sustain growth has become closely linked to their level of technological adoption (Ezeudu & Mutezo 2025). In this regard, digital technology has emerged as a

transformative force that is reshaping how SMEs operate and compete.

Technologies such as online payment systems and artificial intelligence enable firms to automate processes, improve transaction speed and accuracy, enhance customer experience, and make better strategic decisions. These new technologies assist organizations in collecting data, information, and transforming them into knowledge (Ardolino et al., 2018).

The adoption of electronic payment systems enhances operational efficiency and overall firm outcomes, while Alrfai et al. (2023) highlight that artificial intelligence adoption improves organizational agility and performance.

Looking at the situation as it applies to Nigeria and particularly in the North East region, the growing relevance of digital technology presents new opportunities for SMEs to strengthen their performance and remain competitive in both local and broader markets.

Consequently, the integration of digital technologies into SME operations is increasingly seen as an important pathway for enhancing business performance in a rapidly evolving digital economy (Bughin et al. 2021).

However, this study will be focusing on two dimensions of these technology tools namely: online payment systems and artificial intelligence adoption. Online payment systems are digital platforms that enable businesses to carry out financial transactions electronically through channels such as mobile banking, point-of-sale (POS) terminals, debit or credit cards, and online transfers (Abudaqa et al., 2022).

Their use shapes how organizations perform by improving the speed and accuracy of transactions, reducing delays, and ensuring smoother financial operations.

They also enhance record-keeping and transparency, which supports better financial control and accountability within the organization. In addition, the ease and convenience of electronic payments improve customer experience, which can lead to increased patronage and stronger market presence (Al-Hattami et al. 2021).

Artificial intelligence adoption refers to the use of smart technologies such as machine learning, data analysis tools, automation, and chatbots in everyday business operations (Idris & Mohamad, 2020).

Its application influences how organizations perform by improving the speed and quality of decision-making, reducing errors, and enhancing the efficiency of business processes. By automating routine tasks and enabling faster data processing, it supports smoother operations and better use of organizational resources.

It also strengthens the ability of firms to respond to customer needs and market changes in a timely manner, leading to improved service delivery and competitiveness. Through these improvements in efficiency, accuracy, and responsiveness, artificial intelligence adoption contributes to enhanced organizational performance.

Small and medium-sized enterprises (SMEs) in North-East Nigeria play a vital role in promoting economic growth, job creation, and regional development; however, their performance is constrained by several challenges, particularly in the adoption and effective use of digital technologies.

Despite government initiatives such as the Digital Nigeria Programme and various capacity-building efforts aimed at promoting digital entrepreneurship, many SMEs in the region are unable to fully leverage these opportunities due to entrenched structural constraints.

Consequently, the level of digital technology adoption remains low, limiting their ability to benefit from innovation for business expansion and operational efficiency.

This challenge is further exacerbated by region-specific factors, including persistent insecurity, inadequate digital infrastructure, limited internet access, high costs of digital adoption, and low levels of digital literacy among business owners.

Together, these barriers hinder the uptake of digital solutions and weaken the competitiveness and sustainability of SMEs in an increasingly technology-driven economy.

The general objective of this study is to examine the effect of digital technology on the performance of SMEs in North East, Nigeria. The specific objectives of this study are to:

- i Evaluate the effect of online payment systems on the performance of SMEs in North East, Nigeria.
- ii Investigate the effect of artificial intelligence adoption on the performance of SMEs in North East, Nigeria.

Ho1: Online payment systems have no significant effect on the performance of SMEs in North East, Nigeria.

Ho2: Artificial intelligence adoption has no significant effect on the performance of SMEs in North East, Nigeria.

## II. LITERATURE REVIEW

### Concept of SMEs Performance

Shamsudin et al. (2023) defined SME performance as the overall outcomes of business activities measured through financial indicators like profit and revenue as well as non-financial indicators such as employee performance and customer satisfaction.

It is the extent to which small and medium-sized enterprises achieve their desired goals in terms of growth, profitability, efficiency, and sustainability. It is a multidimensional concept that includes both financial and non-financial outcomes such as sales growth, employment generation, market share, and innovation.

It is the level of success achieved by small firms in both financial and non-financial dimensions, emphasizing productivity, efficiency, and organisational effectiveness. Furthermore, it is also the capacity of enterprises to contribute to economic growth through improved productivity, profitability, and operational efficiency, especially in developing economies.

Yahaya and Nadarajah (2023) described SME performance as the ability of firms to achieve sustainable competitive advantage through effective use of resources, innovation, and strategic orientation. Small or medium-sized business performs well when it can use what it has such as money, skills, technology, and workforce in a smart and efficient way.

It also involves the firm's ability to introduce new ideas, improve products or services, and adapt to changes in the business environment. In addition, having a clear strategy helps the business make better decisions and stay ahead of competitors. When all these are properly managed, the firm is not only able to succeed in the short term but also maintain its success over a long period.

#### Digital Technology

Alam et al. (2025) stated that digital technology is a combination of interconnected systems such as artificial intelligence, cloud computing, big data, and the Internet of Things, which work together to improve productivity, innovation, and economic development.

It is a broad and includes multiple advanced tools that support organisational growth. Furthermore, they're digital tools and platforms that support task completion, collaboration, and problem-solving in different environments, emphasizing its practical application in achieving organisational goals.

These tools do not only support human activities but also shape how people interact, think, and make decisions in modern society, showing its deep influence beyond technical functions.

Nassani et al. (2024) postulated that digital technology is a set of advanced tools and systems that enable organisations to transform their operations, enhance innovation, and improve decision-making processes.

This implies that digital technology is not just about devices, but also about how organisations use these tools to improve performance and efficiency.

It is a driver of transformation that creates new products, services, and opportunities by integrating digital tools into everyday activities, especially in dynamic environments. This shows that digital technology plays a key role in shaping modern business operations and interactions.

#### Online Payment Systems

Kou et al. (2024) explained that online payment systems are critical tools for SMEs, as they enable broader market access, support e-commerce activities, and improve operational efficiency by automating payment processes and record-keeping.

It enhances customer experience, trust, and satisfaction by offering multiple payment options and ensuring transaction transparency, thereby positively impacting business performance.

Furthermore, they are an essential component of digital technology adoption for modern enterprises, particularly small and medium-sized businesses, as they improve financial operations, reduce transaction costs, and enable faster, safer payments.

Alam et al. (2023) described online payment systems as digital financial infrastructures that facilitate seamless, real-time transactions between buyers and sellers while ensuring security, reliability, and ease of use.

These systems allow money to move electronically almost instantly, eliminating the need for physical cash or manual processing of payments. They are designed to be secure, protecting sensitive information such as credit card numbers or bank account details from fraud or theft. Reliability refers to the system's ability to process transactions consistently without errors or downtime, ensuring that businesses and customers can trust it.

Ease of use emphasizes that both sellers and buyers can complete payments quickly and efficiently without technical difficulties, which enhances user experience.

#### Artificial intelligence adoption

Hang and Kim (2025) portrayed that it is the process by which businesses integrate intelligent systems and technologies like machine learning, predictive analytics, and automation into their operations to enhance decision-making, efficiency, and innovation. It enables firms to turn complex data into actionable insights, anticipate customer needs, and respond to market changes more quickly. AI helps businesses make sense of huge amounts of data quickly, turning it into useful insights that guide decisions in planning, marketing, and managing customer relationships.

It doesn't just react to what's happening it also helps companies predict future trends, stay ahead of the competition, fine-tune supply chains, and respond to customers' needs more effectively.

Li et al. (2024) described artificial intelligence adoption as the integration of intelligent systems into business processes to optimize workflow, reduce errors, and enhance customer experience.

It enables small and medium enterprises to gain a competitive edge by improving productivity, streamlining supply chains, and offering personalized services to customers. Furthermore, it supports predictive decision-making, risk management, and innovation, allowing firms to respond faster to market changes and opportunities.

It is a key component of digital technology for SMEs, providing tools to improve efficiency, innovation, and performance in increasingly competitive and dynamic markets.

#### Online Payment Systems and Performance

Ezeudu and Mutezo (2025) investigated the relationship between electronic payment (e payment) adoption and SME performance in Enugu State, Nigeria.

A quantitative, cross sectional research design was employed, sampling 220 registered SMEs using simple random sampling from the Nigerian Corporate Affairs Commission database. Primary data were collected via self administered questionnaires using five-point Likert scales.

Data analysis involved Pearson product moment correlation to examine relationships between adoption factors and perceived performance. Results of the study showed positive and significant correlations between e payment adoption dimensions (e.g., perceived usefulness, ease of use, relative advantage) and SME performance, suggesting that greater e payment acceptance is associated with improved productivity and competitiveness.

The study recommended that SME owners invest in user friendly, fraud free e payment solutions and train employees on their use. It also urged policymakers to promote supportive digital infrastructure and e payment policies. However, the study's reliance on perceived performance rather than objective performance data (e.g., sales, profitability) limits the strength of causal inference.

Thapa (2025) examined how electronic payment systems (EPS) affect SME financial performance in Birendranagar, Surkhet, Nepal. The study adopted a quantitative approach combining descriptive and causal designs. The study looked at 150 small and medium-sized businesses in retail, service, and manufacturing, chosen using convenience sampling.

The study used structured questionnaires to gather information. The study used simple statistics to show adoption patterns and ran correlation and regression tests in SPSS to see how EPS usage affected financial results. The findings showed that businesses using EPS had better revenue growth, ran more efficiently, and had smoother transactions.

The study suggested that using EPS is important for improving SME performance, especially in semi-urban areas, and recommended that banks and policymakers make EPS easier to access and help business owners understand how to use it.

Nonetheless, the study's results may not apply to all areas because the sample was not randomly chosen and focused on businesses more likely to use technology.

#### Artificial Intelligence Adoption and Performance

Arachie et al. (2025) investigated how the adoption of artificial intelligence (AI) affects business performance among SMEs in south-eastern Nigeria.

The study used a quantitative survey design, distributing structured questionnaires online to 371 digitally literate SME owners drawn from a population of 11,231 registered SMEs across five states.

Using purposive sampling, the study targeted those already exposed to digital tools. Descriptive and inferential statistics, including regression analysis, were applied. The results showed that while many SMEs were aware of AI tools, actual use was lower; however, those that used AI reported improvements in CRM performance, suggesting AI contributes positively to performance outcomes.

The authors recommended capacity building, subsidised access to AI tools, and inclusion of AI support in SME development policies to help firms fully leverage AI for competitiveness and customer satisfaction.

Abdul Wahab and Radmehr (2024) examined the impact of AI assimilation on overall firm performance in small and medium sized enterprises (SMEs) in Lebanon.

The study used a cross-sectional quantitative approach. The study sampled 417 SME owners and managers selected through probability sampling techniques, with data gathered via structured questionnaires on AI usage and three performance dimensions: absorptive capacity, customer agility, and firm performance.

Analysis using Partial Least Squares Structural Equation Modeling (PLS SEM) tested how AI assimilation relates to performance both directly and through mediating factors like organizational and customer agility.

The study recommended that SMEs strengthen internal capabilities and restructure processes to support AI integration and develop agility skills to maximize performance benefits. However, replicating such study in Nigeria might yield a different result

#### Technology Acceptance Model

The Technology Acceptance Model (TAM) was developed by Davis (1986) and is one of the most widely used theories for explaining technology adoption behavior.

The theory proposes that an individual's or organization's decision to adopt a new technology is mainly influenced by two key beliefs: perceived usefulness and perceived ease of use (Davis, 1986).

Perceived usefulness refers to the degree to which a user believes that using a particular technology will enhance performance, while perceived ease of use refers to the extent to which the technology is believed to be free of effort to use.

According to Davis (1986), these two factors shape the user's attitude toward the technology, which in turn influences behavioural intention and actual usage. Over time, researchers have extended TAM by introducing external variables such as training, social influence, and system quality, which indirectly affect technology adoption by shaping user perceptions (Venkatesh & Davis, 2000).

Several recent studies support the relevance of TAM in explaining technology adoption and its outcomes. For instance, Thomas (2025) conducted a quantitative study on SMEs in the UAE hospitality sector using a sample of 315 respondents and structural equation modeling.

The findings showed that perceived usefulness and perceived ease of use significantly influenced AI adoption intention, confirming the core assumptions of TAM. Similarly, Relifra (2025) examined AI adoption and functional performance in MSMEs using a TAM-UTAUT framework.

The study employed survey data and statistical modeling techniques and found that perceived value and ease of use strongly influenced adoption decisions, which in turn improved business performance outcomes.

Despite its strengths, some studies question the completeness of TAM. Badghish (2024), in a study of SMEs in Saudi Arabia using a survey method and the Technology-Organization-Environment (TOE) framework, found that organizational and environmental factors such as firm readiness and external pressure played a stronger role than perceived usefulness and ease of use in influencing AI adoption.

In another study, Schwaeke (2025) noted that many firms adopt AI not necessarily because of perceived ease or usefulness, but due to competitive pressure and industry trends, suggesting that TAM may overlook important external drivers of technology adoption.

However, despite these criticisms, the Technology Acceptance Model remains highly relevant for this study. As such this study employed the use of the TAM.

### III. METHODOLOGY

The study adopted a survey research design. The population of the study consisted of (71,545) registered SMEs in the North East of Nigeria, according to SMEDAN (2021).

However, the Taro Yamane (1967) formula was used to determine a sample size of 398 respondents. Convenience sampling techniques was used and the procedure involves selecting participants based on their availability and willingness to participate to enable the collection of data.

The study used primary data. Data were collected using a 5-point Likert scale structured questionnaire. The data collected were analyzed using smart-PLS SEM.

The test of reliability and validity was conducted to ensure that the constructs accurately represented in the study using Partial Least Squares Structural Equation Modeling (PLS-SEM).

This is typically assessed using Cronbach's Alpha, Composite Reliability (CR), and rho\_A, with threshold values generally above 0.70 indicating acceptable reliability (Hair et al., 2021). Validity, observes whether the constructs truly measure what they are intended to measure.

Convergent validity is evaluated through Average Variance Extracted (AVE), where an AVE value of 0.50 or higher confirms that the indicators share sufficient variance.

The model of the regression analysis is specified thus:

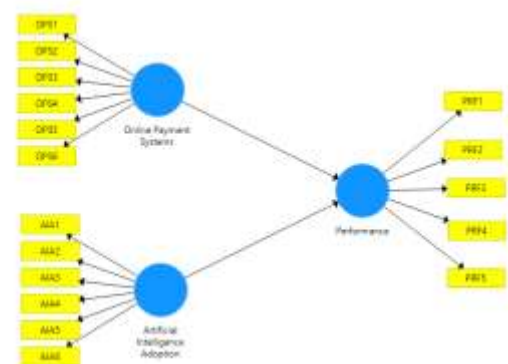


Table 1.1: Reliability of study scale

	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
Artificial Intelligence Adoption	0.943	0.943	0.955	0.778
Online Payment Systems	0.904	0.906	0.926	0.676
Performance	0.922	0.926	0.941	0.762

Source: Smart PLS Output, 2026

Composite reliability of Jöreskog's (1971) was applied to test for the internal consistency of the items. All the values fall within the Hair, et al., (2019) rating of good consistency. The Cronbach alpha value was above 0.60 which is the minimum threshold as recommended by Sekaran (2010).

To test for the convergent validity, the average variance extracted (AVE) was used. All the latent variables showed values greater than 0.50 which indicates that the constructs explain at least 50 percent of the variance of its items.

According to Henseler et al., (2015), the Fornell-Larcker criterion does not perform well when explaining discriminant validity, particularly when

the indicator loadings on a construct differ only slightly.

As a replacement, they proposed the Heterotrait-Monotrait (HTMT) ratio of the correlations which is the mean value of the item correlations across constructs relative to the (geometric) mean of the average correlations for the items measuring the same construct (Voorhees et al., 2016). Discriminant validity problems are present when HTMT values are higher than 0.90 for structural models (Henseler, et al., 2015).

	Artificial Intelligence Adoption	Online Payment Systems	Performance
AIA1	0.846		
AIA2	0.921		
AIA3	0.879		
AIA4	0.896		
AIA5	0.898		
AIA6	0.850		
OPS1		0.773	
OPS2		0.827	
OPS3		0.834	
OPS4		0.881	
OPS5		0.787	
OPS6		0.828	
PRF1			0.826
PRF2			0.900
PRF3			0.894
PRF4			0.884
PRF5			0.857

Source: Smart PLS Output, 2026

The table presents the outer loading values for three latent constructs: Artificial Intelligence Adoption (AIA), Online Payment Systems (OPS), and Performance (PRF), each measured using multiple indicators. In partial least squares structural equation modeling (PLS-SEM), outer loadings indicate the strength of the relationship between observed indicators and their corresponding latent constructs.

These values range between 0 and 1 and show how well each item reflects the construct it is intended to measure. Generally, outer loadings of 0.70 and above are considered acceptable, indicating that the indicators reliably measure their constructs.

For the Artificial Intelligence Adoption (AIA) construct, the outer loadings range from 0.850 to 0.921 across six indicators. AIA2 records the highest loading value of 0.921, making it the strongest indicator of artificial intelligence adoption and suggesting that it contributes greatly to explaining the construct. AIA5 also shows a very strong loading of 0.898, closely followed by AIA4 at 0.896 and AIA3 at 0.879, all of which indicate strong relationships with the construct.

AIA1, with a loading of 0.846, and AIA6, with 0.850, are the lowest among the indicators but still exceed the acceptable threshold of 0.70, confirming that they are reliable measures of the construct. Overall, all indicators demonstrate strong and consistent representation of Artificial Intelligence Adoption, with AIA2 standing out as the most dominant item.

For the Online Payment Systems (OPS) construct, the outer loadings range from 0.773 to 0.881 across six indicators. OPS4 has the highest loading of 0.881, indicating that it is the strongest indicator of online payment systems and contributes most significantly to explaining the construct.

OPS3 and OPS6 also show strong loadings of 0.834 and 0.828 respectively, while OPS2 records 0.827 and OPS5 shows 0.787, all of which remain above the acceptable benchmark. OPS1 has the lowest loading at 0.773, but it still meets the required threshold, confirming its adequacy as a measurement item. Overall, the indicators demonstrate acceptable

to strong reliability, with OPS4 emerging as the most influential item.

For the Performance (PRF) construct, the outer loadings range from 0.826 to 0.900 across five indicators. PRF2 records the highest loading of 0.900, making it the strongest indicator of organizational performance and showing a very strong contribution to the construct.

PRF3 and PRF4 also demonstrate high loadings of 0.894 and 0.884 respectively, indicating strong relationships with the performance construct. PRF5 records a loading of 0.857, while PRF1, with a loading of 0.826, is the lowest among the indicators but still exceeds the acceptable threshold of 0.70. Overall, all indicators strongly represent the Performance construct, with PRF2 emerging as the most dominant indicator.

Table 2 Heterotrait-Monotrait Ratio (HTMT)

	Artificial Intelligence Adoption	Online Payment Systems	Performance
Artificial Intelligence Adoption			
Online Payment Systems	0.846		
Performance	0.852	0.863	

Source: Smart PLS Output, 2026

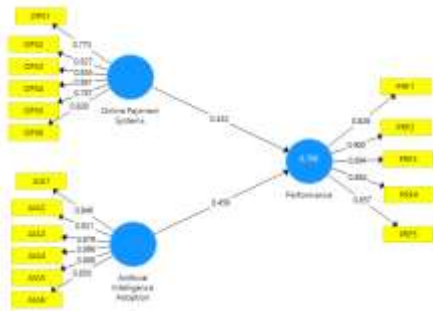
#### Model Goodness of Fit (GoF)

Sequel to the need to validate the PLS model, there is a need to assess the goodness of fit of the model as Hair, et al. (2017) suggested. This study used the standardised root mean square residuals (SRMR).

The choice of this index was based on the fact that the SRMR provides the absolute fit measure where a value of zero indicates a perfect fit. The study adopted Hu & Bentler's (1998) suggestion that a value of less than 0.08 represents a good fit while applying SRMR for model goodness of fit. The study result indicates an SRMR value of 0.048. This indicates the model is fit.

Assessing the Structural Model

Having satisfied the measurement model assessment, the next step in evaluating PLS-SEM results is to assess the structural model. Standard assessment criteria, which was considered include the path coefficient, t-values, p-values, and coefficient of determination (R2). The bootstrapping procedure was conducted using a resample of 5000.



The structural model results indicate that online payment systems and artificial intelligence Adoption jointly explain a substantial proportion of variation in Performance, with an R-square value of 0.709 (70.9%).

This implies that online payment systems and artificial intelligence adoption account for 70.9% of the changes in performance, while the remaining 29.1% is explained by other factors not included in the model.

Based on Hair et al. (2019), an R-square value of 0.709 is considered substantial, indicating a strong explanatory power of the model and providing empirical support for its predictive relevance. The result of the path analysis is presented in the table below.

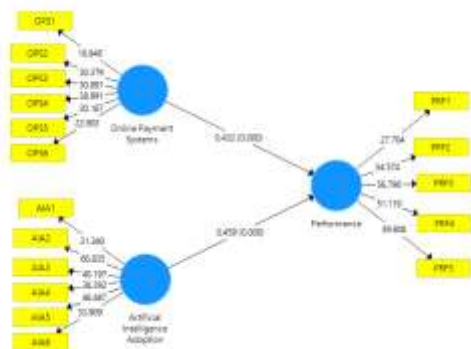


Table 3.1: Path Coefficients

Variables	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics ( O/S /TDEV)	P Values
Artificial Intelligence Adoption -> Performance	0.459	0.460	0.060	7.631	0.000
Online Payment Systems -> Performance	0.432	0.432	0.057	7.559	0.000

Source: Smart PLS Output, 2026

Results from Table 3.1

The result of the study shows that artificial intelligence adoption has a positive and significant effect on Performance. This implies that an increase in the adoption of artificial intelligence leads to improved organizational performance.

This finding is consistent with that of Abdul Wahab and Radmehr (2024), who reported that AI assimilation significantly improves firm performance through enhanced organizational capabilities and agility.

The result of the study also shows that online payment systems have a positive and significant effect on Performance. This means that increased use of online payment systems contributes to better organizational performance by improving transaction efficiency, reducing errors, and enhancing financial management processes.

This finding aligns with that of Mustapha et al. (2025), who found that electronic payment systems significantly improve operational efficiency and return on investment among firms, confirming that digital payment adoption enhances overall business performance.

## CONCLUSION

In conclusion, the findings of this study indicate that digital technology has a positive and significant effect on the performance of SMEs in North East, Nigeria. Specifically, artificial intelligence adoption and online payment systems both contribute to improved SME performance, though in different ways.

Artificial intelligence adoption plays a more strategic role by enhancing decision-making, improving operational efficiency, and strengthening the overall capabilities and competitiveness of SMEs. On the other hand, online payment systems support performance by improving transaction speed, reducing financial errors, and enhancing the efficiency of financial management processes, which helps SMEs operate more smoothly and effectively.

Therefore, the study concludes that greater adoption of digital technologies, particularly artificial intelligence and online payment systems, is essential for improving the performance and sustainability of SMEs in North East, Nigeria.

## RECOMMENDATION

- i SMEs in North East, Nigeria should increase the adoption and effective use of artificial intelligence tools in their operations. This can be achieved by investing in affordable AI-based applications, providing regular training for staff on digital skills, and partnering with technology providers to support proper implementation. In addition, SMEs should use AI-driven insights to improve decision-making, enhance customer service, and optimize business processes in order to boost overall performance.
- ii SMEs in North East, Nigeria should also strengthen their use of online payment systems by encouraging cashless transactions and integrating secure and user-friendly payment platforms into their business operations. This can be supported through staff training on digital payment tools, improving access to reliable internet services, and adopting multiple payment channels such as

mobile money and card payments. By doing so, SMEs will improve transaction efficiency, reduce errors, and enhance financial management, which will ultimately improve their performance.

## REFERENCES

- [1] AbdulWahab, M. D., & Radmehr, M. (2024). The impact of AI assimilation on firm performance in small and medium sized enterprises: A moderated multi mediation model. *Heliyon*, 10(8), 29580.
- [2] Abudaqa, A., Alzahmi, R. A., Almujaani, H., & Ahmed, G (2022). Does innovation moderate the relationship between digital facilitators, digital transformation strategies and overall performance of SMEs of UAE? *International Journal of Entrepreneurial Venturing*, 14(3), 330-350.
- [3] Alam, T., Singh, R., & Kumar, P. (2023). Digital financial services and SMEs performance: The role of online payment systems. *Journal of Financial Innovation*, 9(2), 45–63.
- [4] Al-Hattami, H. M, Hashed A. A., & Kabra J. D (2021). Effect of AIS success on performance measures of SMEs: Evidence from Yemen. *International Journal of Business Information Systems*, 36(1), 144-164
- [5] Alrfai, M. M, Alqudah, H., Lutfi A., Al-Kofahi, M., Alrawad, M., & Almaiah, M. A (2023). The influence of artificial intelligence on the AISs efficiency: Moderating effect of the cyber security. *Cogent Social Sciences*, 9(2), 2243719
- [6] Arachie, A. A., Nwosu, K. C., Ugwuanyi, S. C., & Muhammed, I. A. (2025). Artificial intelligence adoption and business performance: Evidence from small and medium enterprises in emerging markets. *International Journal of Public Administration and Management Research*, 11(2), 69–86.
- [7] Bughin, J., Kretschmer T., & Van-Zeebroeck N (2021). Digital technology adoption drives strategic renewal for successful digital transformation. *IEEE Engineering Management Review*, 49(3), 103-108.

- [8] Ezeudu, C. I., & Mutezo, A. T. (2025). Electronic payment technology adoption and SME performance: Evidence from Enugu State, Nigeria. *African Journal of Innovation and Entrepreneurship*, 4(2), 109–128.
- [9] Ezeudu, C. I., & Mutezo, A. T. (2025). Electronic payment technology adoption and SME performance: Evidence from Enugu State, Nigeria. *African Journal of Innovation and Entrepreneurship*, 4(2), 109–128.
- [10] Idris, K. M., & Mohamad R (2020). AIS usage factors and impact among Jordanian SMEs: The moderating effect of environmental uncertainty. *Journal of Advanced Research in Business and Management Studies*, 6(1), 24–38.
- [11] Kou, G., Ergu, D., & Shah, N. (2024). Online payment systems adoption in SMEs: A multi-criteria decision-making approach. *Journal of Enterprise Information Management*, 37(1), 102–121.
- [12] Nassani, A. A., Yousaf, Z., Grigorescu, A., Oprisan O., & Haffar, M (2024). Accounting information systems as mediator for digital technology and strategic performance interplay. *Electronics*, 12(8), 1866.
- [13] Rdolino, M., Rapaccini, M., Saccani, N., Gaiardelli, P., Crespi G., & Ruggeri C (2018). The role of digital technologies for the service transformation of industrial companies. *International Journal of Production Research*, 56(6), 2116-2132.
- [14] Shamsudin, A., Ghapar, M. A., Ngah, N. E., & Adenan, N. D. (2023). SME performance: Examining the relationship between training and development, employee performance evaluation and rewards. *International Journal of Academic Research in Business and Social Sciences*, 13(4), 347–356.
- [15] Thapa, A. (2025). The impact of electronic payment systems on the financial performance of small and medium enterprises in Birendranagar, Surkhet. *Journal of Entrepreneurship & Management Studies*, 2(1), 144–158.
- [16] Yahaya, H. D., & Nadarajah, G. (2023). Determining key factors influencing SMEs' performance: A systematic literature review and experts' verification. *Cogent Business & Management*, 10(3), 22-51
- [17] Zhao, X., Bilal, M., Jiying, W., Sohu, J. M., Akhtar, S., & Hassan, M. I. U. (2024). Unraveling the factors influencing digital transformation and technology adoption in high-tech firms. *International Journal of Advanced and Applied Sciences*, 12(3), 38-48