



Exploring the Role of Artificial Intelligence in Shaping Venture Creation in Nigeria

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Abstract

Artificial Intelligence (AI) is revolutionizing entrepreneurial activity worldwide, yet its practical influence on venture creation in emerging economies remains underexplored. Nigeria's e-commerce sector, marked by rapid digital adoption but constrained by infrastructural gaps and trust deficits, presents a unique context to examine AI's transformative potential. This study examined the role of AI in shaping venture creation among Nigerian e-commerce firms. Anchored in the Technology–Organization–Environment (TOE) framework, the research employed a cross-sectional explanatory design, surveying 300 e-commerce firms selected via stratified purposive sampling. Data were collected using structured questionnaires administered to founders and executives, and analyzed using descriptive statistics and regression analysis at a 0.05 significance level. Results revealed that AI-driven decision support ($\beta = 0.32$, $p = 0.001$), AI-enabled customer engagement ($\beta = 0.41$, $p < 0.001$), and AI-enabled market intelligence ($\beta = 0.27$, $p = 0.007$) significantly enhance venture creation, whereas AI-powered process automation ($\beta = 0.21$, $p = 0.058$) and AI-enabled financial management ($\beta = 0.09$, $p = 0.452$) were not significant. The findings indicate that Nigerian entrepreneurs are technologically and organizationally prepared to adopt AI in consumer-facing and intelligence-driven functions, but infrastructural and institutional barriers limit its impact in operational and financial areas. The study concludes that AI serves as a strategic enabler of entrepreneurial growth and competitiveness in Nigeria's digital economy. A key recommendation is for policymakers to invest in digital infrastructure and strengthen consumer trust mechanisms to fully unlock AI's transformative potential for e-commerce ventures.

Keywords: Artificial Intelligence, E-commerce, Financial management, Market intelligence, Process automation, Venture creation.

1.0 Introduction

Venture creation remains one of the most vital drivers of economic diversification and inclusive growth in Nigeria. Despite being Africa's largest economy with a Gross Domestic Product (GDP) of approximately \$477 billion in 2022, Nigeria continues to face daunting challenges of youth unemployment (estimated at 33.3%), infrastructure deficits and limited access to formal financing (National Bureau of Statistics, 2023). In such an environment, entrepreneurship has increasingly been positioned as a strategic lever for job creation, innovation diffusion and poverty alleviation. Yet, the high failure rate of start-ups estimated at nearly 80% within the first five years signals the fragility of traditional business models that rely heavily on intuition, informal networks and resource-constrained management practices.

The advent of Artificial Intelligence (AI) is reshaping this terrain by offering novel tools to entrepreneurs for designing, launching and scaling ventures in the digital age. AI technologies enhance venture creation by reducing uncertainty, augmenting decision quality and enabling new forms of customer and market interaction (Chalmers *et al.*, 2021). For instance, AI-driven decision support systems provide data-driven insights for entrepreneurs to evaluate

opportunities more effectively, while AI-enabled customer engagement tools personalize interactions that deepen brand loyalty. This is particularly significant in Nigeria's digital economy where mobile penetration has exceeded 100 million active internet users and consumer behavior is increasingly shaped by online platforms.

Beyond customer-facing applications, AI-powered process automation is streamlining core business operations by lowering transaction costs and enhancing efficiency, allowing small ventures to compete on scales previously unattainable (Shepherd & Majchrzak, 2022). Similarly, AI-enabled market intelligence tools are providing entrepreneurs with predictive analytics on consumer trends, competitor actions and regulatory changes, crucial in Nigeria's volatile policy landscape. Moreover, AI-enabled financial management solutions are expanding access to alternative credit scoring, risk profiling and real-time cash-flow analytics, thereby mitigating one of the most persistent barriers to venture growth in Nigeria: limited access to finance (Al-Mamary, 2025).

Globally, scholars have argued that the fusion of AI and entrepreneurship constitutes a paradigm shift where entrepreneurs transition from being merely resource orchestrators to becoming "machine-augmented opportunity seekers" (Dwivedi *et al.*, 2025). Within Nigeria's context, this transformation is not just an academic curiosity but a developmental imperative. Leveraging AI to shape venture creation could accelerate the emergence of resilient, innovation-led enterprises capable of scaling regionally and globally. However, empirical studies that interrogate how specific AI capabilities such as decision support, customer engagement, process automation, market intelligence and financial management which translate into enhanced venture creation in Nigeria remain sparse. This raises a critical question for both scholars and practitioners: to what extent can AI, within the constraints of Nigeria's technological, organizational and environmental context, serve as a decisive enabler of sustainable venture creation in the e-commerce sector? Moreover, the study aimed to explore the role of artificial intelligence in shaping venture creation with the following objectives;

- i. To examine the influence of AI-driven decision support (IV) on venture creation (DV) in Nigeria.
- ii. To assess the effect of AI-enabled customer engagement (IV) on venture creation (DV) in Nigeria.
- iii. To determine the effect of AI-powered process automation (IV) on venture creation (DV) in Nigeria.
- iv. To investigate the influence of AI-enabled market intelligence (IV) in shaping venture creation (DV) in Nigeria.
- v. To evaluate the contribution of AI-enabled financial management (IV) to venture creation (DV) in Nigeria.

2.0 Literature review:

2.1 Artificial Intelligence as a Transformative Tool

Artificial Intelligence (AI) has rapidly evolved into a disruptive general-purpose technology, widely recognized for its capacity to reshape industries, redefine organizational processes and reconfigure the global competitive landscape. At its core, AI encompasses a constellation of computational techniques such as machine learning, natural language processing, computer vision and predictive analytics that simulate and augment human cognition at scale (Dwivedi *et al.*, 2025). Unlike traditional digital tools that primarily automate routine operations, AI introduces adaptive and generative intelligence, enabling systems to learn from data, refine

outputs and continuously optimize decisions without explicit programming. This dynamic, self-improving nature positions AI not as a static artefact but as a strategic resource with pervasive implications across all domains of enterprise and society.

The distinguishing feature of AI lies in its ability to reduce uncertainty in high-variability environments. By processing vast, unstructured datasets and detecting hidden patterns, AI enhances decision accuracy, accelerates response times and expands the scope of possible strategic options. For instance, predictive analytics provide foresight into consumer demand shifts, while reinforcement learning enables systems to recommend optimal resource allocation strategies under uncertainty. These functions directly address one of the most persistent challenges in organizational and entrepreneurial contexts: the need to make informed decisions in dynamic and incomplete information settings (Chalmers *et al.*, 2021).

AI further extends its impact through automation of knowledge-intensive tasks. Beyond simple mechanization, AI-driven automation executes complex functions such as fraud detection, credit scoring and supply-chain orchestration that previously required specialized human expertise. This capacity to substitute and augment human judgment at scale transforms organizational efficiency and unlocks opportunities for entirely new modes of production and service delivery. In particular, the integration of AI into consumer-facing functions creates personalized engagement ecosystems that continuously adapt to individual preferences, thereby raising switching costs and reinforcing customer loyalty (Shepherd & Majchrzak, 2022). A more profound dimension of AI's role is its ability to act as a generative technology, facilitating the discovery of opportunities that humans may overlook. By mining latent consumer needs, simulating alternative scenarios and generating novel solutions, AI effectively expands the frontier of innovation. Dwivedi *et al.* (2025) argued that this generative capacity marks a transition from tool-based efficiency to capability-enhancing augmentation, where AI becomes an integral partner in strategic sensing and innovation. In this sense, AI is not merely a support mechanism for entrepreneurs but a foundational driver that shapes the possibilities of what ventures can emerge, scale and sustain in the digital economy.

Importantly, the relevance of AI as an independent variable is accentuated in developing country contexts such as Nigeria. Here, structural inefficiencies ranging from weak infrastructure to fragmented financial systems constrain entrepreneurial activity. AI offers a counterbalance by enabling ventures to circumvent institutional voids through alternative credit scoring, digital customer intelligence and predictive logistics planning. By bridging data gaps and lowering entry barriers, AI creates conditions for new firm formation and survival in environments traditionally hostile to entrepreneurial emergence. In this way, AI functions not just as a performance enhancer, but as a contextual equalizer that redefines the terms of participation in the digital economy.

Thus, conceptualizing AI as the independent variable situates it as a multi-dimensional force encompassing decision support, customer engagement, process automation, market intelligence and financial management that directly and indirectly influences venture creation outcomes. Its adoption alters the structure of opportunities available, the efficiency of resource mobilization, and the scalability of new business models. In entrepreneurial research, this underscores AI's role not as a peripheral enabler but as the core driver of venture creation dynamics in the digital age.

2.1.1 AI-Driven Decision Support

AI-driven decision support represents one of the most critical applications of artificial intelligence in entrepreneurship. It involves the integration of predictive analytics, data mining, and machine learning to inform decisions on pricing, product selection, inventory levels and strategic resource allocation. In e-commerce, where decision speed and accuracy often determine survival, these systems provide real-time insights that reduce the uncertainty entrepreneurs face in volatile digital markets (Chalmers *et al.*, 2021). In Nigeria's e-commerce ecosystem characterized by fluctuating consumer demand, seasonal purchasing behavior and unpredictable logistics costs. AI-based decision tools empower entrepreneurs to respond proactively to market dynamics. Instead of relying solely on intuition, founders can forecast demand surges, optimize product assortments and dynamically adjust pricing to maintain competitiveness. As Shepherd and Majchrzak (2022) argued, AI-driven decision support enhances entrepreneurial judgment by merging human intuition with machine intelligence, thereby allowing Nigerian ventures to make more precise, data-grounded strategic choices in environments marked by high risk and limited buffers.

2.1.2 AI-Enabled Customer Engagement

Customer engagement is widely recognized as the lifeblood of e-commerce and AI technologies have transformed this domain by making personalization scalable. Tools such as chatbots, recommendation engines and AI-enabled sentiment analysis facilitate tailored interactions that foster deeper consumer trust and loyalty. In Nigeria, where e-commerce firms contend with low consumer trust in online transactions and high competition from informal retail markets, AI-enabled customer engagement provides a powerful differentiator. Personalized recommendations increase purchase likelihood, while chatbots enhance responsiveness by providing 24/7 assistance, thereby building confidence in platforms (Chen, 2024). Moreover, these tools allow firms to segment customers based on behavior and purchasing history, which is critical for effective retention strategies in a price-sensitive market. Dwivedi *et al.* (2025) highlighted that AI personalization strengthens customer relationships by creating a sense of individualized attention, which is particularly important in the Nigerian context where repeat purchases are essential for venture sustainability. By fostering loyalty and long-term engagement, AI-enabled customer systems directly enhance the survival and scalability of new e-commerce ventures.

2.1.3: AI-Powered Process Automation

Process automation represents another transformative application of AI, aimed at improving operational efficiency and scalability. Unlike conventional mechanization, AI-powered automation involves intelligent orchestration of core business processes, including order fulfillment, payment processing, logistics coordination and returns management. For e-commerce firms in Nigeria, operational inefficiencies such as delayed deliveries, high transaction costs and logistical fragmentation remain major constraints on venture performance. AI-based automation mitigates these challenges by streamlining workflows, reducing human error and ensuring consistency in service delivery (Shepherd & Majchrzak, 2022). For example, automated systems can optimize delivery routing in congested urban centers, track inventory in real-time and even predict maintenance requirements for logistics equipment. Rastogi (2025) argued that automation not only reduces operational overheads but also enables small firms to achieve scale without proportional increases in resources. In Nigeria's highly competitive digital marketplace, such lean scalability can be the difference between venture survival and premature exit.

2.1.4: AI-Enabled Market Intelligence

AI-enabled market intelligence equips entrepreneurs with sophisticated tools for monitoring market trends, predicting consumer demand and tracking competitor strategies. This function is particularly critical in Nigeria, where e-commerce firms face dynamic and fragmented consumer behavior shaped by cultural diversity, regional disparities and shifting economic conditions. By aggregating and analyzing diverse data sources ranging from social media sentiment to competitor pricing AI systems provide predictive insights that enhance opportunity recognition and innovation (Chalmers *et al.*, 2021). Such intelligence allows Nigerian e-commerce ventures to anticipate demand surges around cultural festivals, tailor product offerings to regional preferences and react swiftly to competitive pricing pressures. Dwivedi *et al.* (2025) emphasized that AI-driven market intelligence strengthens the entrepreneur's ability to "sense" opportunities and reduce the risks associated with entering uncertain markets. For Nigerian e-commerce firms, which often operate in thin-margin environments, the ability to forecast demand and identify emerging niches is critical for sustaining growth and achieving first-mover advantages.

2.1.5: AI-Enabled Financial Management

Access to finance remains one of the most pressing challenges for Nigerian entrepreneurs, particularly in the e-commerce sector where firms often lack collateral and face skepticism from traditional lenders. AI-enabled financial management addresses this challenge by providing alternative credit scoring, fraud detection, and real-time financial analytics. By analyzing unconventional data points such as transaction histories, customer reviews and digital payment patterns, AI systems broaden access to credit for firms excluded from traditional banking systems (Al-Mamary, 2025). This innovation is particularly vital in Nigeria, where many start-ups struggle with liquidity constraints that stifle venture creation and growth. In addition, AI-driven fraud detection enhances trust in digital payment platforms, reducing the risks of financial losses that often undermine consumer confidence in online commerce. According to OECD (2025), the integration of AI in financial management improves the sustainability of small ventures by minimizing default risks and strengthening cashflow predictability. For Nigerian e-commerce firms, the ability to secure funding and manage financial risks more effectively directly translates into enhanced survival rates and greater prospects for scale.

2.2 E-Commerce in Nigeria: Contextual Realities that Shape AI–Venture Dynamics

Nigeria's e-commerce sector is shaped by three defining realities: platform concentration, logistics fragmentation and volatile consumer behavior. As at 2025 marketplaces such as Selar 241,000, Jiji 200,000, Konga 130,000, Jumia 64,000, dominate the landscape with over 635,000+ traders, creating dense data environments where AI tools for decision support, customer engagement and market intelligence thrive. These platform which has grown exponentially since the advent of AI allow entrepreneurs to leverage data flows for personalization and predictive analytics to scale (Rastogi, 2025).

Conversely, weak last-mile infrastructure and high delivery costs constrain growth, particularly for smaller firms. In this space, AI-powered process automation such as predictive routing, warehouse optimization, and real-time tracking can deliver outsized efficiency gains, directly addressing Nigeria's logistics bottlenecks (Fraccastoro, 2025). Consumer behavior adds further complexity: Nigerian shoppers are mobile-first, price-sensitive and prone to rapid shifts influenced by cultural and seasonal factors. This volatility elevates the value of AI-enabled

market intelligence and decision support, which help ventures anticipate demand surges, adapt pricing and reduce stockouts during peak periods like Christmas or Ramadan.

Ultimately, AI's impact is not uniform but heterogeneous across sub-sectors. Market intelligence and engagement tools are strongest in high-data marketplaces, while automation yields greater returns in logistics and fulfillment. Financial management tools cut across these contexts, easing persistent barriers to credit and payment fraud. These realities highlight that AI's influence on venture creation in Nigeria emerges most powerfully where inefficiencies are acute or data density is high (Rastogi, 2025; Fraccastoro, 2025).

2.3 Theoretical Foundation: Technology–Organization–Environment (TOE) Framework

The Technology Organization Environment (TOE) framework by Tornatzky and Fleischer in 1990 provides a comprehensive lens for examining how firms adopt and integrate innovations such as artificial intelligence. TOE argued that adoption is shaped by three interrelated contexts: technological readiness (availability and perceived benefits of AI tools), organizational factors (resources, skills, leadership orientation) and environmental conditions (competitive intensity, regulatory structures and market dynamics).

This framework is particularly relevant for Nigerian e-commerce ventures. On the technological side, AI-driven tools like decision support systems, customer engagement engines, and financial management platforms are increasingly accessible through cloud-based solutions. However, adoption varies depending on firms' ability to invest and manage digital infrastructures. At the organizational level, Nigerian start-ups often operate with lean resources, meaning that leadership vision, entrepreneurial agility and capacity for process automation determine how effectively AI is leveraged for venture creation. Finally, the environmental dimension is critical: Nigerian firms face infrastructural bottlenecks, regulatory uncertainties and consumer trust deficits, making AI adoption both a necessity and a differentiator in surviving competition. By situating AI adoption within the TOE framework, the study can explain not only whether but also *why* and *how* Nigerian e-commerce ventures deploy AI differently across sub-sectors. It highlights that AI's role in venture creation is not simply technological but emerges from the interplay of organizational capacities and environmental realities.

3.0 Methodology

This study adopts a cross-sectional explanatory design to examine how artificial intelligence (AI) adoption shapes venture creation among e-commerce firms in Nigeria. The population covers active players in marketplaces, direct-to-consumer retail, logistics and payment-enabled platforms. As at 2025 marketplaces such as Selar, Jiji, Konga and Jumia accounted for 241,000; 200,000; 130,000 and 64,000 respectively dominating the landscape with over 635,000+ traders. These players accounted for 85% of the digital commerce activities in the country. With a target sample of about 399 firms derived using Yamane sample determination technique out of over 635,000 estimated traders on the platforms, but 300 traders successfully returned the instruments which was sufficient for robust statistical analysis. Firms were selected through stratified sampling to ensure coverage of different platforms, sub-sectors and complemented by snowballing via industry networks. Respondents were the key decision-makers such as founders, traders or managers. Data were collected using a structured 5 points likert scale closed ended google form questionnaire administered online, with follow-ups by phone calls

and emails where necessary. The instrument measured firm characteristics, AI adoption across five proxies (decision support, customer engagement, process automation, market intelligence and financial management) and venture creation outcomes such as revenue growth, customer base expansion, product launches and survival prospects. Reliability were confirmed through Cronbach's alpha (≥ 0.70) and test-retest checks, while validity was established via expert review, pilot testing and factor analysis. Data analysis was at the 0.05 significance level which involved descriptive statistics to profile firms and multiple regression models to estimate the effect of each AI proxy on venture creation outcomes, with diagnostic tests for robustness. Ethical protocols including informed consent, confidentiality and institutional approval guided the process, while contextual realities such as infrastructural challenges and uneven digital maturity are considered to ensure findings reflect Nigeria's e-commerce ecosystem.

4.0 Results and Discussion

Table 1: Descriptive Statistics of E-commerce Firms in Nigeria (N = 300)

Variable	Mean	Std. Dev.	Min	Max
Firm Age (years)	4.2	2.1	1	12
Number of Employees	36.5	21.7	5	110
AI-Driven Decision Support (1–5 scale)	3.4	0.9	1	5
AI-Enabled Customer Engagement (1–5 scale)	3.7	1.0	1	5
AI-Powered Process Automation (1–5 scale)	3.1	1.1	1	5
AI-Enabled Market Intelligence (1–5 scale)	3.6	0.8	2	5
AI-Enabled Financial Management (1–5 scale)	2.9	1.2	1	5
Venture Creation (Growth Index, 1–100)	62.3	15.4	28	95

Source: Field survey (2025)

Table 4.1 The descriptive statistics show that Nigerian e-commerce firms are relatively young (mean age ~4 years), small-to-medium in scale (average 36 employees) and still in the early-to-mid stages of AI adoption (most proxies score between 3.0–3.7 on a 5-point scale). Venture creation outcomes (mean 62/100) indicate modest but uneven growth. This reflects a dynamic but fragile e-commerce ecosystem where firms experiment with AI but adoption depth is uneven, with financial management tools (mean 2.9) lagging behind decision support and customer engagement. Nigerian e-commerce firms recognize AI's potential in customer-facing and market intelligence applications but face constraints in financial and process automation due to infrastructural bottlenecks. Chalmers *et al.* (2021) argued that AI adoption in entrepreneurial contexts often starts with customer-facing solutions where returns are most visible, while operational AI takes longer to mature.

Table 2: Correlation Matrix

Variable	1	2	3	4	5	6
1. AI Decision Support	1					
2. AI Customer Engagement	.42*	1				
3. AI Process Automation	.38*	.44*	1			
4. AI Market Intelligence	.51*	.36*	.41*	1		
5. AI Financial Management	.29	.33*	.30	.35*	1	
6. Venture Creation (Growth Index)	.47*	.53*	.39*	.41*	.18	1

*Significant at $p < 0.05$

The Table 4.2 correlation matrix shows significant positive relationships between most AI proxies and venture creation. The strongest correlation is between AI-enabled customer engagement ($r = .53^*$) and venture creation, followed by AI decision support ($r = .47^*$). AI financial management shows the weakest link ($r = .18$, not significant). These correlations confirm that customer engagement and decision-making are central to survival in Nigeria's competitive and trust-deficit e-commerce market, where retaining customers is more critical than process efficiencies. Entrepreneurs should prioritize AI that improves customer interactions and supports managerial decision-making before heavy investments in backend automation or financial AI. Shepherd and Majchrzak (2022) noted that AI personalization fosters consumer loyalty and accelerates venture growth, particularly in digital markets where trust is fragile.

Table 4.3: Multiple Regression Results Predicting Venture Creation

Predictor (IV)	B (Beta)	Std. Error	t-value	p-value	Significance
AI-Driven Decision Support	0.32	0.09	3.56	0.001	Significant
AI-Enabled Customer Engagement	0.41	0.08	5.13	0.000	Significant
AI-Powered Process Automation	0.21	0.11	1.91	0.058	Not Sig.
AI-Enabled Market Intelligence	0.27	0.10	2.70	0.007	Significant
AI-Enabled Financial Management	0.09	0.12	0.75	0.452	Not Sig.

Model Summary: $R^2 = 0.49$, Adjusted $R^2 = 0.47$, $F(5, 294) = 56.3$, $p < 0.001$

Objective 1: To examine the effect of AI-Driven Decision Support on venture creation among e-commerce firms in Nigeria

The Table 4.3 regression results show a significant positive effect ($\beta = 0.32$, $p = 0.001$), indicating that firms adopting AI for decision support experience stronger venture outcomes. In Nigeria's unstable business climate marked by inflation, exchange rate volatility and unpredictable consumer trends. AI-driven tools help entrepreneurs optimize pricing, manage inventory and allocate scarce resources more effectively. This capacity to act on real-time insights reduces uncertainty and improves the chances of survival and growth. AI decision support enhances strategic agility, a critical factor for e-commerce firms competing against informal retail and navigating weak institutional structures. Chalmers *et al.* (2021) emphasized AI's role in reducing entrepreneurial uncertainty, while Shepherd and Majchrzak (2022) stressed AI as a partner in entrepreneurial judgment. TOE Technologically feasible and organizationally empowering, AI decision support is particularly valuable in Nigeria's uncertain environment.

Objective 2: To investigate the influence of AI-Enabled Customer Engagement on venture creation

Customer engagement shows the strongest effect ($\beta = 0.41$, $p = 0.000$), confirming its centrality in venture success. Nigerian consumers often face trust issues with online shopping, ranging from fraud concerns to poor service experiences. AI tools like chatbots, recommendation engines and personalized marketing improve trust, encourage repeat purchases and enhance loyalty. This makes customer engagement a decisive factor in scaling digital ventures. Firms that invest in personalized AI engagement strategies can overcome Nigeria's consumer

skepticism, achieve higher retention, and grow faster than competitors. Dwivedi *et al.* (2025) showed personalization boosts customer satisfaction and growth; Chen (2024) highlights its importance in emerging digital markets. TOE enables scalable personalization, organizationally easing workload and environmentally offsetting consumer distrust.

Objective 3: To assess the effect of AI-Powered Process Automation on venture creation

The effect of automation is positive but not significant ($\beta = 0.21$, $p = 0.058$), suggesting that while automation has potential, it is not yet translating into tangible growth outcomes. Nigeria's infrastructural challenges such as unreliable power supply, poor logistics networks and fragmented supply chains limited the efficiency benefits of automation in e-commerce operations. Many Nigerian e-commerce firms remain unable to fully exploit backend automation and smaller ventures may find automation costly relative to their immediate survival needs. Rastogi (2025) noted that automation benefits are highly context-dependent and weaker in markets with infrastructural gaps.

Objective 4: To determine the effect of AI-Enabled Market Intelligence on venture creation

Market intelligence significantly predicts venture creation ($\beta = 0.27$, $p = 0.007$), underscoring its strategic importance. In Nigeria's rapidly evolving market, shaped by youthful consumers, rising smartphone adoption and volatile incomes. AI intelligence helps firms anticipate demand, track competitor pricing, and respond quickly to shifts in policy or regulation. This ability strengthens opportunity recognition and competitive positioning. Firms that use AI for predictive insights gain market agility and are better positioned to capture emerging opportunities in Nigeria's fluid consumer landscape. Chalmers *et al.* (2021) stressed its role in strategic foresight. Technological Organizational environment provide foresight, organizationally enhancing adaptability to Nigeria's dynamic environment.

Objective 5: To evaluate the effect of AI-Enabled Financial Management on venture creation

Financial AI tools show no significant effect ($\beta = 0.09$, $p = 0.452$), pointing to their weak role in current e-commerce outcomes. Despite AI's global potential in credit scoring, fraud detection and cash flow management, Nigerian firms face systemic challenges: limited integration with fintech platforms, unreliable financial data, and barriers to SME credit access. Until institutional reforms improve credit markets and fintech integration, AI-enabled financial management will have little practical impact on entrepreneurial growth in Nigeria. Al-Mamary (2025) highlighted AI's role in financial sustainability but notes effectiveness depends on institutional maturity. The theory of TOE aligned that Technological potential exists, but environmental and institutional weaknesses dilute organizational gains. This objective is not supported, reflecting the limits of financial AI under Nigeria's underdeveloped financial infrastructure.

5.0 Conclusion and recommendations

5.1 Conclusion

This study set out to examine how Artificial Intelligence (AI) shapes venture creation among e-commerce firms in Nigeria, using five key proxies such as AI-driven decision support, AI-enabled customer engagement, AI-powered process automation, AI-enabled market

intelligence and AI-enabled financial management, framed within the Technology Organization Environment (TOE) model. The results revealed that AI-driven decision support, customer engagement and market intelligence are strong and significant predictors of venture creation, demonstrating that AI enables entrepreneurs to make better strategic decisions, deepen consumer trust through personalization and adapt to dynamic markets with predictive insights. However, AI-powered process automation and financial management showed insignificant effects, largely due to persistent infrastructural bottlenecks, fragmented logistics systems, weak institutional support and systemic financing barriers that characterize Nigeria's business environment. These findings suggest that while Nigerian entrepreneurs and firms demonstrate readiness to adopt AI, especially in consumer-facing and intelligence-driven areas, the broader environment continues to constrain its effectiveness in operational and financial domains. Thus, AI in Nigeria's e-commerce sector functions not just as a tool for efficiency but as a strategic enabler of entrepreneurial resilience, growth and competitiveness, with its impact realized unevenly across domains depending on the interaction of technological readiness, organizational capacity and environmental conditions. The study therefore concludes that realizing AI's full potential for venture creation in Nigeria requires coordinated efforts from entrepreneurs, policymakers, investors and fintech innovators to dismantle systemic barriers while scaling adoption of AI solutions most relevant to the Nigerian context.

5.2 Recommendations

The following recommendations were informed by the study;

- i. Entrepreneurs should invest in affordable AI-based analytics platforms to optimize pricing, inventory, and demand forecasting, enabling them to navigate Nigeria's volatile market with greater accuracy.
- ii. Government should strengthen digital consumer protection and data privacy frameworks to enhance trust, which will amplify the effectiveness of AI tools in customer acquisition and retention.
- iii. Innovation hubs and logistics-tech startups should co-create modular automation solutions (e.g., order tracking dashboards, delivery optimization tools) that SMEs can adopt without heavy capital requirements.
- iv. Venture capitalists and angel investors should prioritize funding for e-commerce firms leveraging AI-driven market intelligence, as these businesses are more resilient and adaptive to fast-changing consumer preferences and regulatory shifts.
- v. Fintech firms should design AI-driven credit scoring and fraud detection models tailored to SMEs, expanding access to finance and strengthening the sustainability of new ventures.

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