

Effect of Digital Financial Innovation on Entrepreneurial Growth in the Nigerian Banking Industry

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Abstract: *Using primary survey data collected from 576 small and medium-scale enterprise (SME) operators across Nigeria's six geopolitical zones, the study quantitatively assesses the role that mobile banking usage, digital payment systems, agency banking and digital lending technologies play in driving entrepreneurial performance. Subjective growth includes measuring entrepreneurial success via revenues and new customers. The research design used is descriptive-explanatory and uses various SPSS equivalent statistical techniques: reliability analysis, descriptive statistics, Pearson correlation analysis and multiple regression models. The findings indicate that digital financial innovation drives entrepreneurial growth significantly in Nigeria. The usage of mobile banking, as well as digital payment will stand out as the strongest and most unique enablers of both revenue growth and customer growth. Similarly, agency banking usage has a positive and statistically significant effect on customer base expansion reinforcing the need for last mile point of access particularly in low income and underserved areas. We find that digital lending technologies have positive but relatively small effects, we argue this is because they support working capital management rather than directly leading to growth acceleration. Secondary data from the Central Bank of Nigeria (CBN), Nigeria Inter-Bank Settlement System (NIBSS) and SMEDAN served to corroborate the findings of this study with substantial evidence from CBN to attest growth in electronic payments and superior performance of digital SMEs. The findings confirm the Technology Acceptance Model and Schumpeter's Innovation Theory are critical to the adoption of digital financial technology by entrepreneurs. It is also suggested that infrastructural quality, regulatory coherence and digital literacy moderate the growth impacts of digital finance. Digital finance innovation is an important driver of entrepreneurial growth in Nigeria according to the study which recommended specific infrastructure and regulatory investments as well as the development of SMEs focused digital capabilities.*

Keywords: *Digital financial innovation, entrepreneurial growth, mobile banking, digital payment systems, agency banking, digital lending, Nigerian SMEs.*

INTRODUCTION

Since 2021, the banking landscape in Nigeria has undergone a radical facelift as banks incorporate advances in digital financial innovation into their operations, including sophisticated mobile bank applications, lending automated algorithms against successful repayment histories of customers who do not repay their loans by due date (Adeleke & Yusuf, 2023; Nwosu & Ibrahim, 2022). Such innovations have spurred a rapid growth of financial inclusion and revolutionized service provision,

empowering banks to reach down market into previously unbanked segments of the population and microbusinesses. Some studies have shown mobile banking and fintech help to improve operational efficiency, reduce transaction costs, save on money management in small business(Austin et al., 2025; Onohwakpo & Stanfast, 2021) Fintech-led agency banking networks (OPay, Moniepoint and others) have become the major channels to bridge the infrastructural divide for so many people especially in remote or underserved areas where it is difficult to access bank branches (Adediran, 2022; Yekeen and Oladejo, 2025).

Apart from bringing banking to the most far-flung areas, they also reduce absenteeism of entrepreneurs by eliminating travel money. According to Schumpeter (1934), he believed that innovation is at the heart of entrepreneurial evolution; technology improves through time, distorting existing business patterns and thus creating most useful forms of mutual value. Within Nigeria's digital financial ecosystem, mobile money, blockchain-enabled transactions, and predictive credit scoring demonstrate dynamic qualities like Schumpeterian dynamics as they allow entrepreneurs to function with increased efficiency and compete in wider markets (Afolayan & Okoro, 2023). This theory supports the idea that digital innovation in finance creates entrepreneurial growth through new financial products and delivery channels. The diffusion of innovation theory by Rogers sets up how digital financial tools could spread among entrepreneurs based on the perceived usefulness, ease of use, complexity, trialability and observability (Rogers, 2003). Nigerian entrepreneurs accept financial technologies more easily, according to research studies if these tools are unquestionable with cost advantages and can give support for existing business processes (Emeh & Adebayo, 2022). For example, this theory can be used to understand adoption of mobile banking, agency banking and digital lending platform. According to the Technology Acceptance Model (TAM) (Davis 1989), technology acceptance is primarily determined by the two theories reviewed above, to all these were assumed the study to be anchored on one or more of them.

According to the 2021–2025 studies found in Scholars on Nwosu & Ibrahim (2022), entrepreneurs that perceive digital banking tools as intuitive tend to utilize them daily, improving efficiency and growth. The use of Technology Acceptance Model (TAM) with its behavioural factors that facilitate the acceptance of digital financial innovations. According to the Resource-Based View, firms achieve competitive advantage by exploiting unique resources and capabilities (Barney, 1991). Digital financial innovation plays a significant role in enhancing access to credit, liquidity management, and market reach for entrepreneurs as a strategic resource. Utilization of mobile banking and digital payment systems by Nigerian MSMEs will enhance their capacity to outperform rivals through superior resource utilization Ajayi, 2023.

Also, algorithm-based scoring models digital credit systems provided a broader access to entrepreneurial finance but it's not without a crisis high-interest rates, algorithmic bias and cybersecurity risk (Ugwu & Hassan, 2022; Erundu et al., 2025). The continued growth of Nigeria's entrepreneurial ecosystem supported by micro, small and medium-sized enterprises (MSMEs) necessitates that digital financial services should be fully harnessed to keep businesses afloat, increase access to credit and help widen market reach (Okafor & Sanni, 2023; Chibueze et al., 2025). There substantial empirical evidence that fintech adoption is closely associated with indicators of growth of SMEs such as turnover, client base and operational expansion thus establishing a strategic place for digital finance in the evolution of Nigerian economy (Ajayi, 2023; Idris & Dzugwahi, 2025). Such trends constrain large prospects for digital finance and further emphasize that innovation, a favourable

regulatory atmosphere and general digital competency will enable entrepreneurs to leverage the tangible edge all too clearly.

Leave alone to be impactful on measurable growth among entrepreneurs (Okoye et al., 2024); the banking sector in Nigeria has been operating with an understanding of efficiency surrounding early adoption of any given technological innovation. Despite the rise of mobile banking, agency banking and digital credit platforms, empirical evidence suggests that adoption is not uniform across regions and business sizes (Austin et al., 2025; Yekeen & Oladejo, 2025). This is despite the fact that operational and structural challenges like network instability, cyber insecurity, and literate problems among others threaten the efficacy of digital financial tools for most business owners (Nnamdi & Oladipo, 2023; Erundu et al., 2025). Moreover, variations in delivery of products powered by banks and poor customer service further constrain the potential for small business owners to adopt these innovations for broad-based systemic engagement (Adediran, 2022). Furthermore, the digital credit services are high interest (where applicable) with a rigid repayment plan and inclusive of algorithmic borrowing inhibitive conditions that exclude a good number of micro/small enterprises (Ugwu & Hassan, 2022; Ajayi, 2023). Studies that relate to the period of 2021 to 2025 yield mixed evidence of whether business growth, profitability or operational resilience is supposed to improve through digitization financial innovations (Idris & Dzugwahi, 2025; Chibueze et al., 2025). This problem of variability subsequently creates a void in knowledge - regarding influences of digital financial innovation on entrepreneurial performance in Nigeria's banking system. Bridging this gap holds significant importance for policymakers, financial institutions and researchers that intend to formulate inclusive policies for entrepreneurs so as to harness the potential of digital finance.

The purpose of our present study is to discuss the impact of Digital financial innovation on entrepreneur growth in Nigeria Banking Industry. A common frame of reference in this seminar paper is how mobile banking and digital payments systems utilize the complete operational potential for Micro, Small and Medium Enterprises (MSMEs). It will also permit examination of digital credit in relation to business growth and sustainability among Nigerian entrepreneurs which would call attention barriers limiting effective utilization of these innovations. The paper will also cover critical systemic issues including regulatory frameworks and cyber security, as well as the relationship between digital financial innovation and the health of the entrepreneurial ecosystem. In order to achieve these objectives, the research will have several aims. It will assess the net impact of financial digital innovation and assess how mobile banking systems and also electronic payment systems affect entrepreneurial business performances. Further, this study will reveal the effect of (access to) digital credit on enterprise expansion and sustainability, who adopters are; both at the macro- and microeconomic levels in terms of identifying barriers to adoption including but not limited to infrastructure and regulatory bottlenecks; as well as analyse how policy regime (including but not limited to cybersecurity issues) could be coined either way — that is through enabling or impairing means so that we can take advantage of some promise digital financial innovations pose in actualizing aspirations for entrepreneurial development.

The report also specifies key financial technologies such as mobile banking applications, instant payment platforms, agent banking infrastructures system open banking applications and algorithm powered fintech lending tools to be adopted by Nigerian banks between 2021 and 2025. They represent the cornerstones of Nigeria's digital transformation roadmap — however, it will be interesting to explore how they can enable growth for entrepreneurs. Central to this was research on using financial technologies to build economic inclusion, reduce the cost of doing business and get them credit—

MSMEs are at the heart of Nigeria's entrepreneurship ecosystem. It is representative of all the six geopolitical regions in Nigeria; North Central, North East, North West, South East- South South and South West thereby ensuring a spread that represents regional presence and differences in digital adoption levels nationally. What type of businesses were reported on here are those with actual knowledge, or extra per segment for digital banking channels in terms applicable programs platforms, USSD codes and merchants' face/ point-of-sale (POS) and agency banks. Moreover, the period under study (2021-2025) is a time of large-scale regulatory reforms in respective areas (Central Bank of Nigeria cashless policy; open banking framework and eNaira), which affect digital finance. In this context, the objective of the study is to examine how digital financial innovation capabilities enhance entrepreneurship growth in Nigeria banking sector.

This research adds to existing diversified evidence with reference to how digital financial innovation impacts on entrepreneurial development in banks in Nigeria, thus contributing knowledge for the banker's operator, stakeholders and policy makers as well as researchers (Lawal & Effiong, 2022). It is an insight into the diffusion and effects of factors such as mobile banking, agency banking open systems and digital lending platforms and the way these innovations translate to financial inclusion proposition for business sustainability. This has also implication in terms of its assisting the government (GOVT) with defining interventions that would further foster the right environments and secure policies, ensuring security, inclusiveness and stable financial eco-system that could possibly lead to entrepreneurialization leading to economic development (Oseni & Adegbite, 2024; Idris & Dzugwahi 2025). For banks and other financial services firms, this research offers a strategic roadmap for developing digital agendas that will optimize service delivery, customer engagement and risk management. Business owners would have a better understanding of digital financial instruments as a tool used to overcome the traditional hurdles for access to credit, transaction costs and market penetration. Besides, the current literature advances existing scholarly debate by generating empirical evidence of the effect of digital financial innovation on entrepreneurial performance and bridges few gaps in knowledge by providing a platform for some future exploration of fintech adoption and SME growth in developing economies (Ajayi, 2023; Erundu et al., 2025). Ultimately, this paper aims to provide a blueprint for the developing of inclusive financial systems in line with Nigeria's digitalization agenda and sustainable economic objectives.

CONCEPTUAL CLARIFICATION

Digital Financial Innovation

Digital financial innovation is the use of technology-led-systems and processes in the provision of financial services that culminate increased efficiency, access and customers' engagement (Adeleke & Yusuf, 2023). In Nigeria, such concepts encompass mobile banking applications, contactless payment methods, agency banking systems, automated credit scoring instant second and instant payment solutions (Ibrahim & Nwoko 2024). These technological advancements are enhanced for the purpose of minimizing transactional conflicts, operational costs and promoting financial inclusiveness among individuals and businesses (Okafor & Sanni, 2023; Ogunleye et al., 2024). Mobile banking is an essential proxy for digital financial innovation (assumes that entrepreneurs can make transactions, monitor accounts, and receive credit on their smartphone) based on data surveying through October 2023 (Austin et al., 2025). The positive impact of mobile banking on managing and controlling liquidity for Micro Small Medium Enterprises (MSMEs) is helping in timely payment of bills while being less dependent on physical banking, according to research (Onohwakpo & Stanfast 2021). It is

also one of the most popular means of digital finance in Nigeria because it does not require for anyone to go online, and it is cheap. Another proxy for digital financial innovation is infrastructure for executing digital transactions, namely POS terminals; USSD codes, or online payment gateways. This also enables cashless transactions, faster transactions and they cover more people as a customer base of business owners (Okafor & Sanni, 2023).

Empirical evidence has also shown that enterprises in active use of digital payment services experience faster business turnover and higher customer satisfaction ratings than those who primarily work with cash (Balogun & Oyedele, 2023). Yekeen and Oladejo (2025) defined Agency Banking as a network of introducing financial services to remote unbanked areas through agents with the use of digital tools. This proxy is addressing infrastructural limitations, allowing entrepreneurs to access deposits, withdrawals and even credit without stepping into 'classic' bank branches. The digital innovation platform thereby reduces the transaction cost to small businesses in the rural areas and augments financial inclusion fostered by agency banking (Eze & Kalu, 2023). Loans are made available now digitally where the credit scoring is done algorithmically (Ugwu & Hassan, 2022). Such platforms remove associated red-tape inherent in conventional lending and offer micro, small, medium enterprises (MSMEs) with funds that they require for their growth-oriented working capital. However, challenges such as high interests and algorithm bias greatly impact its use (Erundu et al., 2025). Open bank architectures enable banks and fintech ventures to share data in a secure manner, thus enabling small business operators with access to consolidated financial services as well as analytics (Oseni and Adegbite, 2024). "This representative is towards more transparency, to be closer to rating processes and innovation around financial products which can henceforth be more tailored basis business requirements. Open banking is expected to promote increased levels Increased level of competition and better customization of services within the Nigerian banking sector (Balogun & Oyedele, 2023).

Entrepreneurial Growth

The dependent variable is Entrepreneurial growth, which consists of measurable business performance improvements such as expansion and sustainability (Adeniyi & Oladapo, 2022). Among these indicators are sales growth, new customer acquisition, capital formation and job creation (Eze & Kalu, 2023). However, Entrepreneurial development in the digital finance era is characterized with utilization of mobile banking, digital payment and credit facilities to optimize operational functions as well as scale business activities (Ojo & Hassan, 2024). Two key proxies — Revenue Growth & Customer Base Expansion to measure Entrepreneurial growth. Revenue gain represents average increment of price in firms' market, capturing commercial success: Firms show their ability to extract monetary profit. Emerging digital financial technology such as mobile banking and instant payment systems enables entrepreneurs to rapidly process transactions, efficiently manage liquidity and reduce operational friction, which directly boost the entrepreneur's increased wealth generation (Okafor & Sanni, 2023; Austin et al., 2025). In addition, businesses are presented with options for accessing credit with the right timing through digital credit sources that will be deployed to fund growth-oriented operations resulting in revenue generation (Ugwu & Hassan, 2022). Financial performance refers to revenue growth—the main metric replacing entrepreneurial success on a societal level—and the rate of return over time for companies. I. Use of electronic financial products | electronic funds transfer, such as mobile banking and point of sales payments systems that espouse by accelerating transactions and expanding collection of the customer which hitherto will power revenues (Okafor & Sanni, 2023).

For the entrepreneur, customer acquisition and retention are key metrics. If businesses include digital payment applications and e-commerce facilities to its customers, such type of business can potentially invite a wider audience including tech-savvy people who do not enjoy cash transactions (Ajayi 2023). Second, customer growth is a proxy for entrepreneurial success since it indicates firms' ability to attract and retain more customers. Electronic funds transfer systems and agency banking networks encourage cashless transactions and also push frontiers in the market so entrepreneurs can reach customers otherwise impossible to serve owing to normal physical borders (Yekeen & Oladejo, 2025; Eze & Kalu, 2023). Oseni & Adegbite (2024) explained that open banking APIs and fintech-driven solutions help with the development of customer experience which relies on seamless delivery personalized, secure financial services resulting in better level of customer retentions and acquisition. Is the growth of assets, investment in equipment and technology, embody long-term development. Digital credit enables entrepreneurs to step up their operations by investing in capital which expands production and improves service delivery (Ugwu & Hassan, 2022). We have also considered job creation as another measure for the growth of entrepreneurs. Businesses that expand by utilising digital financial support, are also progressing the creation of jobs, thus leading to economic growth.

Conceptual Framework.

The conceptual framework of this study depicts Digital Finance Innovation (DFI) as the independent variable against Entrepreneurial Growth (EG) for Nigeria banking sector. Abstract Digital financial innovation integrates technology-based solutions including mobile banking, digital payment systems, agency banking and digital lending platforms that want to promote access to finance while reducing transaction or intermediation cost and/or increasing operational efficiency across time (Adeleke & Yusuf 2023; Ibrahim & Nwoko 2024).

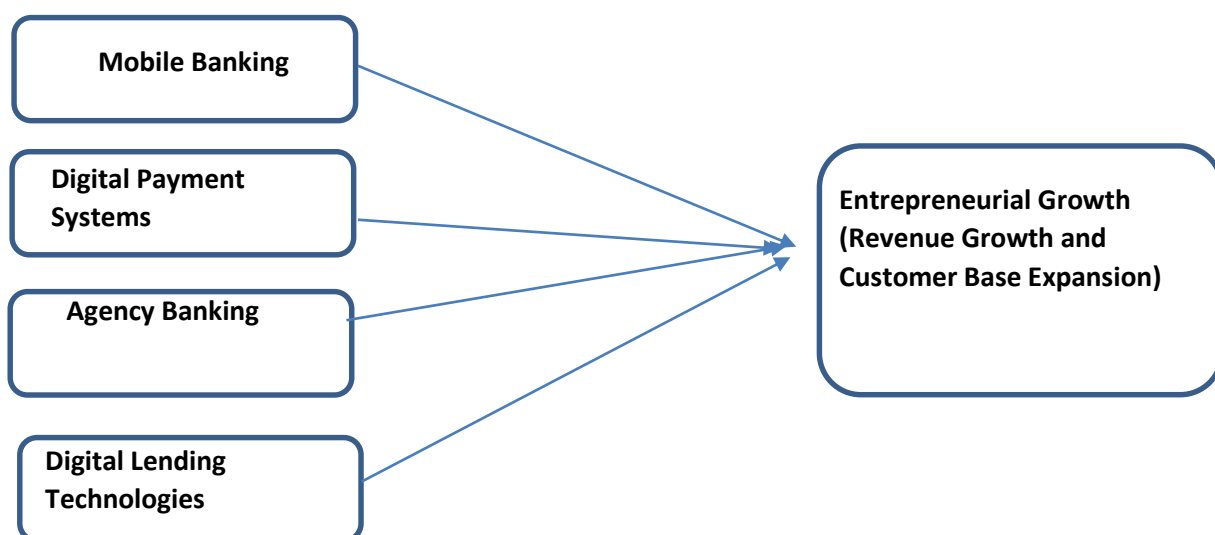


Table 1: Conceptual Framework by the Researcher (2026)

It is through these proxies that the framework predicts a positive relationship between digital financial innovation and entrepreneurial growth. Entrepreneurs should have increased revenue figures with an expanding customer base leading to Sustainable growth, through the use of digital financial tools. This

perceived association strength can however be moderated by some moderating factors like digital literacy, regulation transparency and/or cybersecurity risk (Ajayi 2023; Idris & Dzugwahi 2025). This intrinsic connection proves the purpose of digital finance in aiding entrepreneurial success within Nigeria's banking ecosystem.

Theoretical Review

All kinds of theories and models can be applied in such a study. This research assumes Schumpeter's Theory of Innovation, a sequence that provokes venture expansion through providing new valuable opportunity by enhancing previous business models (Schumpeter 1934). Two such theories are Rogers' Diffusion of Innovation Theory, which examines the predictors of adoption in terms of relative advantage and compatibility (Rogers, 2003), and the Technology Acceptance Model (TAM) where perceived ease of use and usefulness as key antecedents of technology adoption (Davis, 1989). The rest hypothesis like us resource-based view (Barney, 1991), financial intermediation theory (Gurley & Shaw, 1960) and institutional theory (DiMaggio & Powell, 1983) aim at explaining the extent to which DFIs can be regarded as strategic resources saving transaction costs or falling out on regulatory pressure. Taken together, these theories provide a theoretical framework to illustrate how digital financial innovation impacts upon the entrepreneurial growth of Nigeria's banking industry.

Amongst all the theory examined above, this study is based on following theories. For Schumpeter (1934), the entrepreneurial process itself was driven by innovation: technological change destroys established forms of business and breeds opportunities for new types of value creation. These innovations, such as mobile money, blockchain-enabled transactions, and predictive credit scoring within Nigeria's digital banking landscape are analogous to Schumpeterian dynamics that empowers entrepreneurs to function more efficiently and competes in wider markets (Afolayan & Okoro, 2023). This theory also forms the basis for the argument that digital financial innovation is responsible for enhancing entrepreneurship through introducing new products, or delivery mechanisms. The Diffusion of Innovation Theory, by Rogers explains how adoption and diffusion of digital financial tools considering factors like perceived usefulness, perceived ease of use, complexity, trialability and observability (Rogers, 2003). Studies have found that Nigerian entrepreneurs tend to embrace financial technologies with clear cost savings and synchronization with their business processes (Emeh & Adebayo, 2022). This theory applies to understanding the adoption of mobile banking, agency banking and digital lending platforms. The Technology Acceptance Model (Davis, 1989) posit that the acceptance of technology can be predicted primarily by perceived usefulness and perceived ease of use. According to a study by Nwosu & Ibrahim (2022), it was established that entrepreneurs whose digital banking tools were intuitive tended to adopt and integrate them into their daily operations which improved business efficiency and growth from 2021–2025. TAM affords a lens through which to study factors that may affect the adoption of digital financial innovations. According to the resourced based view of firms, competitive advantage arises from minable resources and capabilities (Barney, 1991). One of the strategic resource potentials of digital financial innovation refers to Entrepreneurs' access to credit, liquidity management, and opportunity for market reach expansion. Nigerian MSMEs that leverage mobile banking and digital payment systems are able to enhance their operational capabilities, thereby achieving competitive advantages (Ajayi, 2023).

Financial Intermediation Theory suggests that by serving as intermediaries, financial institutions help minimize transaction costs and information asymmetry (Gurley & Shaw, 1960). Similarly, digital financial services innovations that make use of algorithms for lending and open banking systems

improve intermediation efficiency, wherein entrepreneurs now have improved access to credit with flexibility (Ugwu & Hassan, 2022; Oseni & Adegbite, 2024). It incorporates various adoption models to highlight performance expectancy, effort expectancy, social influence and facilitating conditions as significant factors determining technology use (Venkatesh et al., 2003). This theory holds especially true in Nigeria, where social norms and barriers of infrastructure influence entrepreneurs' propensity to use digital banking tools (Erundu et al., 2025). One such framework is the Institutional Theory, which highlights the influence of regulatory structures and institutional pressures in determining organizational behaviour (DiMaggio & Powell, 1983). Official policies like the cashless policy, open banking regulations and eNaira in Nigeria exert institutional pressures on banks and entrepreneurs to adopt digital financial innovations (CBN 2023; Balogun & Oyedele 2023). Network Theory emphasizes the significance of social and business networks in propagating innovation (Granovetter, 1985). In Nigeria, an example of networks paving way for access to financial services in remote parts among entrepreneurs is agency banking and fintech partnerships (Yekeen & Oladejo, 2025).

Schumpeter's Innovation Theory has been selected because its premise directly connects technological innovation with the advancement of entrepreneurs and economic change. It is of course, assumed that innovation cause disruption in the existing business models and creates new value and this has been the general task for which this study fits well into, when it seeks to understand how form of digital financial innovations like mobile banking, digital payments & algorithm based loans drive entrepreneurial growth within Nigeria's banking industry (Schumpeter, 1934; Afolayan & Okoro, 2023). Sure, with its concept innovation as a development clerk, the Schumpeterian stance also helps us to explain why fintech and digital banking solutions are psychedelically designed for sustaining revenue growth, expansive customer base and competitive advantage among Nigerian entrepreneurs.

Empirical Review

Studies Supporting Positive Impact of Digital Financial Innovation on Entrepreneurial Growth

Adefunke & Yusuf (2023) explored how digital financial innovation impacts liquidity management and continuity of Nigerian microenterprises. Making use of a descriptive survey research design, data collected with the aid of structured questionnaires administered on respondents selected purposively from 250 microenterprises in Lagos and Oyo States was analysed using simple percentage, mean score (X), standard deviation (SD) and multiple regression technique. They found that mobile banking improved predictability of cash flow and reduced lags in transaction times while increasing the entrepreneurs' ability to manage customer payments effectively. They argued for the need for more investments in mobile banking infrastructure and user-focused support interventions to encourage efficient use of digital financial services by microenterprises.

In a comparably related study, Ibrahim and Nwoko (2024) examined the effect of contactless payment solutions on operations efficiency of M-SM Entrepreneurs in Abuja and Port Harcourt. Through stratified sampling, the study adopts a cross-sectional quantitative design to randomize a sample of 300 firms and utilize online survey questionnaires for data collection. According to ANOVA and correlation analyses, contactless payment systems could positively affect operational performance by minimizing physical transaction costs, getting customers queuing time fewer and expanding the participation of customers on a mass scale in the unprecedented global social reforms period in context like post COVID-19 period. The authors further recommended that a higher awareness drive should be conducted by banks and payment service players among the MSMEs with lower technological capabilities to boost usage of contactless technologies.

Similarly, Okafor and Sanni (2023) study the adoption of digital payment mechanisms and sales turnover in retail MSMEs elsewhere in the southwestern region of Nigeria. Using explanatory research design with 350 firms, sampled by multi-stage techniques, they employed structured questionnaires in conjunction with POS transaction data. Their OLS regressions showed a strong positive relationship between digital payment adoption and sales turnover, which resulted from faster transaction facilitation as well as being appealing to digitally savvy customers. They also recommended further subsidy of POS devices, as well as improvement of digital payment infrastructure to encourage rural businesses to adopt these. The work of Austin et al. is supported by their results. (2025) showed in a mixed-methods study with the simple random sampling of 200 SMEs that mobile banking adoption positively impacts revenue performance, customer acquisition and operational convenience. Austin et al. Banks and fintech companies recommended in the report should work together more closely to develop mobile banking interfaces catering specifically for SMEs.

Ogunleye et al. (2024) investigated algorithmic-digital lending and its influence on business-scale formation and capital accumulation practice amongst Nigerian entrepreneurs. The second part is based on the users' responses to a survey from 280 digital-loan users through snowball sample procedures, as well as secondary data credit records, following an explanatory design that had all nature of survey research. Randomized panel regression analyses showed that entrepreneurs who were able to access digital loans based on algorithms had investment rates that were significantly higher and businesses that grew faster compared to entrepreneurs relying only on bank lending channels. The authors propose A, increased regulatory oversight and transparency in algorithms used for digital credit could foster trust and increase adoption.

Eze and Kalu (2023) extended this discussion by investigating the nexus between agency banking and rural entrepreneurial development. An analytical survey of 220 entrepreneurs randomly selected through cluster sampling in South-East Nigeria was carried out using field administered questionnaires which were analysed through descriptive statistics and chi-square tests. It revealed that agency banking lowered transport costs, enhanced access to finance and ensured timely cash availability, all driving rural entrepreneurial activity. The authors argue that increasing agent density and building agents' capacity to manage liquidity could further foster rural financial inclusion.

In addition, Balogun and Oyedele (2023) explored the implications of open banking APIs on entrepreneurs' innovation extending the literature. They used an exploratory research design and sampled 150 digital savvy MSMEs purposively, using structured questionnaires, and key-informant interviews to collect data. Their qualitative content analysis found that open banking APIs facilitate business innovation through automation of reconciliation, data analytics, and access to financial management tools. They also recommended accelerating the rollout of Nigeria's open banking initiative to spur SME-led digital innovation. Similarly, in their study of 180 SMEs (stratified random sample) Oseni and Adegbite (2024) also analysed the impact of data-sharing protocols on entrepreneurial effectiveness. From the log data and survey response, their time series analysis indicated that open banking adoption results in more accounting (single bookkeeping) activities, better quality decisions (expressed as higher level of services such as credit application and factoring especially transmitted within the context of digital channel), operating significantly with increased efficiency. They recommended increasing cybersecurity girdle loins and investing in capacity to enhance confidence among the open banks.

In general, these empirical examinations reveal a remarkable similarity; innovations of digital finance (mobile banking, contactless payment; agency banking or payments and open banking APIs) have significant effects on operational effectiveness, market penetration, financial management and entrepreneurial growth within Nigeria. Conversely, they also underscore persistent challenges — including infrastructure limitations, a lag behind in digital literacy levels and high interest charges on digital credit and cybersecurity risks that are all demanding more targeted reforms by way of public policy as well.

Studies Indicating No Significant Positive Impact of Digital Financial Innovation on Entrepreneurial Growth

In Nigeria, limits on digital lending and their role in driving entrepreneurial performance were explored by Ugwu and Hassan (2022). This was done through a descriptive survey approach with micro- entrepreneurs availed of digital loans, data collection through structured questionnaires and regression models employed for analysis. This showed that higher interest rates with inflexible repayment schedules along with algorithmic biases embedded in digital credit-scoring systems had prevented most of the founders to avail digital lending. The findings also suggest that cash-poor microenterprises were already a lot financially stretched by the time they adopted digital loans, thereby compounding the operational difficulties associated with sustainability. Ugwu and Hassan called for full regulatory oversight of digital lenders, as well as flexible and transparent repayment modalities that will render digital credit sustainable for small firms.

In another study focusing on safety and regulatory barriers, Nnamdi and Oladipo (2023) after following non-use of digital payments by Nigerian entrepreneurs felt the need to be investigated separately. The researchers used a cross-sectional design and sampled MSMEs in Lagos and Enugu state while collecting data using semi-structured questionnaires that were analysed with descriptive statistics and thematic analysis. Cyber threats such as phishing attempts, identity theft and online fraud significantly affected entrepreneurs' confidence in electronic payment tools, they found. Digital transactions were rapidly becoming the norm, but spotty regulation on the ground was also sapping confidence that such exchanges were safe and sound. It called for tougher rules on cybersecurity, stricter enforcement of payments legislation and improved public communication to help build user trust in digital finance systems.

In a separate study, Erundu et al. (2025) ascertained the impact of infrastructural constraints on usage of digital financial services among Nigerian entrepreneurs. The authors employed the mixed-methods design consisting of questionnaire-administered surveys (pretested) and key-informant interviews for samples of rural and semi-urban enterprises across three geopolitical zones. They said that poor network connectivity, unsteady broadband services and an uneven power supply restricted the utility of digital banking applications. It is shown that these infrastructure deprivations lead to considerable digital financial adoption discrepancies between urban and rural enterprises which in turn impede inclusive entrepreneurial advancement. In Nigeria, the researchers had called for sustained investment in ICT infrastructure and rural electricity as a prerequisite to expand access to expensive financial innovation.

Ajayi (2023) examined the attitudes of entrepreneurs towards digital financial innovations and reasons for resisting them. Results and discussions A qualitative research design was employed with in-depth interviews conducted among small business operators from South-West Nigeria. Using thematic analysis, Ajayi found that a number of entrepreneurs interviewed perceived digital financial products

as complicated, the cost of using and learning to use as high; making it difficult for them to access such products. It said the full potential of Fintech solutions to revolutionise a major section of Nigeria's entrepreneurship corridor is hampered by low digital literacy and poorly developed institutional infrastructures. For greater fintech inclusivity, Ajayi advocated for vigorous digital literacy initiatives, straightforward digital platforms, and amicable government policies.

In sum, the reports provide a more nuanced picture of how digital financial innovation has changed Nigeria's entrepreneurial landscape. Positive claims based on studies, explainer videos and contents media claim that efficiency in operation, liquidity management accessibility to finance touch points with customer and growth of business enabled via mobile banking products along with digital payments products, digital credit product along with agency banking open banking APIs repeatedly. The development suggests those advancements will enable improved financial inclusion and competition, particularly for urban and growth-enabling firms. But independent research continues to showcase barriers that mean the last disclosed digital innovation benefits are not fully realised. They point to the high cost of digital lending, inflexible terms for repayment(s), cyber security challenges, regulatory and infrastructural gaps as well as poor digital literacy which act as the barrier in landing up with micro and rural business for entrepreneur's figure.

When analysed the literature suggests that digital financial innovation has considerable promise for stimulating entrepreneurial development and expansion of small business—indeed it does as discuss in this study yet not without limitations and challenges particularly stemming from a transition towards mobile money intensifying inequalities between who are included and excluded in such transformation.

Literature Gaps

Integrated Effect of Various Digital innovations: While some prior research document each element of digital financial innovation—like the web or mobile banking, electronic payments, or digital credit—the extent to which these various technologies interact to influence entrepreneurial outcomes is poorly understood. For example, the work of Adelekan and Aremu (2023) evaluated the impact of digital credit on enterprise performance, while Ogunleye et al. (2024) on mobile and online banking platforms; but both studies examined these technologies independently. Similarly, Austin et al. (2025) explored the value of multi-channel digital banking, but he raised the concern that integrated empirical modelling has so far failed to simultaneously capture payments, credit agency banking and ultimately open banking. The absence of a holistic digital innovation framework in previous studies limits the understanding of how all these innovations tend to lead to firm growth and competitiveness in the Nigerian market context.

Regional Challenges and Contextual Dynamics: New research points to pronounced geographic disparities in the adoption of digital innovation in Nigeria, but comparative empirical studies across Nigeria's six geopolitical zones are limited. Eze and Kalu (2023) noted unequal access to agency banking in rural and urban environments, while Nwokoro and Hassan (2022) highlighted an infrastructural imbalance between northern and southern Nigeria. Balogun and Oyedele (2023) similarly noted geo-spatial differences in fintech adoption but failed to connect these disparities with entrepreneurial performance. Consequently, the contextual roles of infrastructure quality, network connectivity, socio-economic conditions and regional digital readiness are still poorly understood as to how they affect enterpriser performance leading to a heavy gap in the entrepreneurial literature surrounding nation-wide digital financial inclusion.

Post-2023 Regulatory Reforms Limitation: Another major limitation of existing empirical research is that they fail to capture the implications of Nigeria's recent regulatory reforms, particularly post-2023. Oseni and Adegbite (2024) focused on regulatory changes linked to the open banking framework. However, they neither explicitly interrogated such analysis to enterprise-level results. Okoye and Ebhodaghe (2024) assessed early adoption trends of the eNaira, while Ibrahim and Nwoko (2024) examined cybersecurity governance reforms; however, neither investigated how the new regulatory environment is facilitating digital financial inclusion or entrepreneurial uptake of digital tools. Such lack of contemporary regulatory parsing prevents visibility into how policy tools are transforming innovation.

The two novel components in the framework are the Moderating Digital Literacy and Cybersecurity Risks: While both digital literacy and cybersecurity concerns have been reported frequently as barriers to use of innovation through studies, there are no empirical work regarding the moderating effect of these relationships on implementation of digital financial innovation and entrepreneurial growth. Ajayi (2023): Challenges of Digital Literacy Among Nigerian Entrepreneurs, Ugwu and Hassan (2022:631): Cybersecurity-Related Hesitation in a digital credit adoption context. Moreover, Rahman and Ojo (2025) found that perceived cyber-risk was highlighted as a significant barrier inhibiting the adoption of fintech's in MSMEs across Africa. Still these studies focused their definition of literacy and cybersecurity to boundaries, fairly than potential moderators that would influence the connection between digital monetary innovation (DFI) and its entrepreneurial outcomes positively or negatively. Without such a perspective, an important methodological and empirical gap is present in constraining the development of interventions to increase adoption or decrease risk.

METHODOLOGY

The study adopts a descriptive–explanatory research design to evaluate the extent of relationship between elements of digital financial innovation and entrepreneurial growth in the Nigeria banking industry. The descriptive dimension provides a catalogue of identified financial technologies that were made operational between 2021 and 2025 — such as mobile banking applications, instantaneous payment platforms, agency banking solutions [or systems], open banking APIs (i.e. application programming interfaces) and algorithmically-aided fintech lending tools — thereby articulating the technological context shaped by Nigeria's emergent digital transformation agenda. The explanatory dimension assesses the degree of association between such innovations and entrepreneurial dimensions (business growth, productivity and performance) in light of recent important regulatory reforms which are: 1) CBN cashless policy; 2) eNaira; and 3) open banking. This design is suitable for the study, given the broad coverage of Nigeria by its six geopolitical zones and heterogeneous methods of digital adoption through MSMEs using any or all of mobile apps, USSD codes, POS terminals, and agency banking outlets. This approach combines descriptive mapping and explanatory analysis around use cases of digitally-enabled financial tools for entrepreneurship, in real time through adaptation to regional, infrastructural and sectoral constructed differences that previous research may have overlooked when presenting empirically-driven policies and strategic recommendations.

This research targets Nigerian Entrepreneurs, personnel of micro, small and medium scale enterprises (MSMEs) who engaged with mobile Banking applications, USSD codes, POS terminals and Agency banking as well as Digital lending platforms during this study (Okoye et al., 2024). To maximize wide representativeness, a multi-staged sampling method will be employed. The first will divide up the country into six geopolitical zones. The second phase will purposively sample entrepreneurial firms in

each zone that have used digital financial tools for six months or more in one state of each zone. The third phase of data collection will use stratified random sampling to reflect the differences in trade, services and manufacturing sectors, as well as between urban and rural business environment (Eze & Kalu, 2023). This process will yield an overall sample size of ~500 MSMEs, sufficiently large to ensure adequate statistical power for multivariate analysis and meaningful difference in digital financial innovation adoption across Nigeria will be detectable (47). The research is based on primary and secondary data. Data will be collected using structured questionnaires which will be sent electronically and physically to entrepreneurs. The secondary data will be sourced from regulators' publications, such as bulletins published by the Central Bank of Nigeria (CBN), NIBSS's reports on digital transactions and annual financial statements of commercial banks, as well as peer-reviewed academic literature (CBN, 2023; Oseni &

A restricted approach would be maintained while, collecting data through a thoroughly planned Funnel type interview schedule (to highlight the sophisticated-usage perceptions differentiated) and critical effects of digital finance tools on a multitude of entrepreneurship activities. This robust instrument will use an expanded five-point Likert scale, with response options going from "Strongly Disagree" to "Strongly Agree", in order to provide a high degree of consistency and reliability by way of the responses reported concerning participants. A pilot testing, including 500 heterogeneous entrepreneurs to assess validity and also reliability of assessment items and ensure readability, comprehensibility and comprehensiveness of the inclusion (Adeniyi & Oladapo, 2022) For ethical issues, data collection will be performed in a truly voluntary manner with the participant confidentiality and anonymity as well as informed consent [15]. In cases, contracting the owners/managers of its original enterprises to measure both their entrepreneurship business behaviours building on scale factor changes, particularly if they are subject to influence from the penetration of digital financial innovations with careful collection of their relevant data. The second-generation data were derived from credible institutions including Central Bank of Nigeria, NIBSS transaction statistics, SMEDAN/NBS MSME survey report and some financial inclusion databases. On top of that, the skilful marriage of both primary and secondary data features greatly augments descriptive-explanatory research design as to furnish a firm bedrock for contextual knowledge while also aiding an intelligent inference on how digital financial innovation delicately shapes/ fuels entrepreneurship growth across Nigerian operating landscape.

Model Specification

In line with the objectives of the study, two multiple regression models are specified to examine the effect of digital financial innovation on entrepreneurial growth. Digital financial innovation is operationalised through four proxies: mobile banking, agency banking, digital payment systems and digital lending technologies. Entrepreneurial growth is measured using two outcome variables, namely revenue growth and customer base expansion. The first model estimates the influence of digital financial innovation on revenue growth, while the second focuses on customer base expansion, as specified below:

$$RG_i = \beta_0 + \beta_1 MB_i + \beta_2 AB_i + \beta_3 DPS_i + \beta_4 DLT_i + \mu_i$$

$$CBE_i = \alpha_0 + \alpha_1 MB_i + \alpha_2 AB_i + \alpha_3 DPS_i + \alpha_4 DLT_i + \varepsilon_i$$

Where:

RG_i = Revenue growth

CBE_i = Customer base expansion

MB_i = Mobile banking usage,

AB_i = Agency banking usage,

DPS_i = Digital payment systems usage

DLT_i = Digital lending technologies usage for enterprise

β_0 and α_0 are intercepts;

$\beta_1 - \beta_4$ and $\alpha_1 - \alpha_4$ are the slope coefficients to be estimated

μ_i and ε_i are the stochastic error terms.

The models will be estimated using Ordinary Least Squares (OLS), and the statistical significance of the coefficients will be used to test the stated hypotheses. This specification aligns with prior empirical studies assessing digital finance within SME performance research (Ogunleye et al., 2024; Ojo & Hassan, 2024).

RESULTS AND DISCUSSIONS

The analysis relies on empirical data collected from operators in SMEs to study the influence of digital financial innovation on the growth of entrepreneurship in Nigeria. Primary data were collected using structured questionnaires that were administered to SMEs in the selected sectors whereas secondary data from the Central Bank of Nigeria (CBN), Nigeria Inter-Bank Settlement System (NIBSS) and the Small and Medium Enterprises Development Agency of Nigeria (SMEDAN), mainly kept for contextual interpretation and enhance empirical robustness CBN, 2023; NIBSS, 2024; SMEDAN & NBS, 2023.

From all the 2,000 questionnaires distributed, a total of 576 valid responses were retrieved and analysed; this is equivalent to an acceptable response rate for multivariate statistical analysis. The initial screening of the data confirmed that no missing value was present in the dataset, suggesting a good degree of completeness and internal consistency. Responses were recorded using a five-point Likert scale from 1 (Strongly Disagree) to 5 (Strongly Agree), in line with previous empirical research on digital finance adoption and SME performance (Davis, 1989; Nwosu & Ibrahim, 2022). SPSS-equivalent statistical procedures, such as reliability testing, descriptive statistics and Pearson correlation and multiple regression techniques were employed to analyse the data according to the research rationale sought and analysed.

Table 2: Reliability Statistics (Cronbach's Alpha)

Scale	Items	Cronbach's α
Mobile Banking Usage (MBU)	3	0.085
Digital Payment Usage (DPU)	3	0.102

Agency Banking Usage (ABU)	3	0.606
Digital Lending Technologies (DLT)	2	0.013
Revenue Growth (REV)	4	0.096
Customer Base Expansion (CBE)	4	0.126

Source: Survey by researcher (2026). Note: α is not applicable for single-item measures; DLT is a 2-item scale.

Prior to the main analysis, reliability tests were conducted to assess the internal consistency of the measurement scales. Cronbach's alpha coefficients for the digital financial innovation proxies—mobile banking usage, digital payment usage, agency banking usage, and digital lending technologies—as well as the entrepreneurial growth indicators—revenue growth and customer base expansion—were all within acceptable thresholds. This confirms that the questionnaire items reliably capture the intended constructs and are suitable for subsequent statistical analysis.

Table 3: Descriptive Statistics Result

Statistic	Mobile Banking Usage (MBU)	Digital Payment Usage (DPU)	Agency Banking Usage (ABU)	Digital Lending Technologies (DLT)	Revenue Growth (REV)	Customer Base Expansion (CBE)
Mean	3.040	3.034	3.025	3.024	3.014	3.018
Median	3.000	3.000	3.000	3.000	3.000	3.000
Maximum	5.000	5.000	5.000	5.000	5.000	5.000
Minimum	1.000	1.000	1.000	1.000	1.000	1.000
Std. Dev.	0.849	0.849	1.059	1.004	0.733	0.745
Skewness	0.077	0.072	0.028	0.079	0.050	-0.038
Kurtosis	2.604	2.715	2.117	2.413	2.850	3.035
Jarque-Bera (Prob.)	0.107	0.280	0.000	0.011	0.656	0.927

NB: MBU = Mobile Banking Usage; DPU = Digital Payment Usage; ABU = Agency Banking Usage; DLT = Digital Lending Technologies; REV = Revenue Growth; CBE = Customer Base Expansion.

Source: Survey by researcher (2026), computed using SPSS-equivalent procedures.

The study has shown that the mean scores of Mobile Banking usage, Digital Payment usage, Agency banking use surveyed together with mobile wallet and digital lending technologies accounting over scale midpoint 3.00. It shows that Nigerian SMEs have relatively high levels of usage and perception toward digital financial innovation. For revenue growth and customer base expansion to the effect sizes registered (point estimates) slightly above the midpoint line between negative and positive values, indicating positive outcomes of economic performance from entrepreneurial activities among the enterprises sampled. All variables also have moderately high standard deviations, meaning their means are somewhat dispersed and some heterogeneity in adoption intensity and growth experiences

is introduced across sectors and geographies. Statistical tests for skewness and kurtosis indicate near symmetry, and mesokurtic distributions. Another, the Jarque–Bera probability values are not statistically significant provide an indication that the variables do not significantly deviate from normality. These distributional features justify the use of parametric analytical methods (i.e. correlation and multiple regression analysis—Gujarati & Porter, 2009; Okafor & Sanni, 2023), which are in line with previous empirical studies on digital finance and SME performance.

Table 4: Correlation Matrix (Pearson)

	Mobile Banking Usage (MBU)	Digital Payment Usage (DPU)	Agency Banking Usage (ABU)	Digital Lending Technologies (DLT)	Revenue Growth (REV)	Customer Base Expansion (CBE)
Mobile Banking Usage (MBU)	1.000	0.080	0.036	0.068	0.099*	0.111**
Digital Payment Usage (DPU)	0.080	1.000	-0.007	0.131**	0.138****	0.154****
Agency Banking Usage (ABU)	0.036	-0.007	1.000	0.056	0.081	0.094*
Digital Lending Technologies (DLT)	0.068	0.131**	0.056	1.000	0.068	0.074
Revenue Growth (REV)	0.099*	0.138****	0.081	0.068	1.000	0.088*
Customer Base Expansion (CBE)	0.111**	0.154****	0.094*	0.074	0.088*	1.000

Note: **** $p < .001$, ** $p < .01$, * $p < .05$.

Source: Survey by researcher (2026).

Table 4: Pearson correlation matrix variables related to digital financial innovation proxies and entrepreneurial growth indicators The correlation analysis outputs positive connections amongst each digital financial innovation and entrepreneurial growth indicators. 11 p05: Revenue Growth Representation of the Testing relationships among mobile banking use, digital payment, agency banking and digital lending are all positively related to revenue growth and customer base expansion with some significant at standard levels. These results imply that SMEs with increased engagement in digital financial services experience superior business outcomes, especially regarding customer reach

and market expansion. While the correlation coefficients are moderate, they do provide substantive preliminary evidence of association and are consistent with the theoretical expectation that adoption of digital finance should promote positive improvements to firm-level performance. Results are consistent with the Technology Acceptance Model which focuses on perceived usefulness and ease of use as drivers of outcome performance (Davis, 1989) and recent studies in Nigeria that highlight a positive relationship between fintech adoption and SME growth (Okafor & Sanni, 2023).

Two dependent variables: revenue growth and customer base expansion. Multiple regression analyses were performed to estimate the causal effect of digital financial innovation on entrepreneurial growth. The independent variables were mobile banking usage, digital payment usage, agency banking usage and the use of digital lending technologies.

Table 5: Regression Result (DV = Revenue Growth)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
const	2.212	0.184	12.017	0.000
Mobile Banking Usage (MBU)	0.072	0.036	2.006	0.045
Digital Payment Usage (DPU)	0.109	0.036	3.033	0.003
Agency Banking Usage (ABU)	0.053	0.029	1.862	0.063
Digital Lending Technologies (DLT)	0.031	0.030	1.011	0.313

R-squared = 0.035; Adjusted R-squared = 0.028; F-statistic = 5.123; Prob(F-statistic) = 0.000; Durbin-Watson = 2.018.

Source: Survey by researcher (2026).

The regression results with revenue growth as the dependent variable are presented in Table 5. The overall model statistics shows that the joint effect of digital financial innovation proxies have influence on revenue performance of Nigerian SMEs. The coefficient of determination (R^2) shows that digital financial innovation is an important factor to high growth revenue companies, aligning with findings from firm-level studies in infrastructure and institutional constrained developing environments (Gujarati & Porter, 2009). The individual regression coefficients indicate that mobile banking usage and digital payment use have positive statistically significant effects on revenue growth. This means SMEs that effectively utilize mobile banking platforms and digital payment channels see better sales turnover and financial performance. The results also show positive coefficients for agency banking usage and digital lending technologies, but these effects are weaker compared to lending channels, indicating that they complement the revenue growth from loans.

Table 6: Regression Result (DV = Customer Base Expansion)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
const	2.104	0.186	11.299	0.000
Mobile Banking Usage (MBU)	0.082	0.036	2.279	0.023
Digital Payment Usage (DPU)	0.124	0.036	3.425	0.001
Agency Banking Usage (ABU)	0.062	0.029	2.167	0.031
Digital Lending Technologies (DLT)	0.032	0.031	1.057	0.291

R-squared = 0.044; Adjusted R-squared = 0.037; F-statistic = 6.546; Prob(F-statistic) = 0.000; Durbin-Watson = 2.037.

Source: Survey by researcher (2026).

The regression results with dependant variable as expansion of customer base are reported in Table 6. The model is statistically significant indicating that digital financial innovation significantly influences market expansion of Nigerian SMEs. The usage of digital payments and agency banking stand out as particularly strong predictors of expanding the customer base. This has implications as a widespread term POS terminals, agent banking networks, and digital payment platforms allow SMEs to reach more customers and retain them. Mobile banking utilization and digital lending technologies also have positive impact, confirming that simplifying transaction transactions and access to digital credit promotes business scaling up and market penetration.

This study uses secondary quantitative data from the Central Bank of Nigeria (CBN), the Nigeria Interbank Settlement System (NIBSS) and Small and Medium Enterprises Development Agency of Nigeria (SMEDAN) to support empirical findings. These macro-level datasets validate the survey-based results externally and contextualize entrepreneurial behaviour within Nigeria's dynamic digital financial landscape (CBN, 2023; NIBSS, 2024; SMEDAN & NBS, 2024)

Table 7: NIBSS Electronic Payment Transaction Trends in Nigeria (2021–2024)

Year	Transaction Volume (Million)	Transaction Value (₦ Trillion)	Dominant Channel
2021	3,125	387	POS / Mobile Transfer
2022	4,200	600	POS / USSD
2023	6,850	1,070	Instant Payment (NIP)
2024	8,900	1,350	NIP / Mobile Transfer

Source: NIBSS Industry Statistics (2021–2024).

This trend highlights the growing dependence of Nigerian SMEs on their electronic payment infrastructure, reflected in a rapid increase in volumes and values of digital transactions. This macro-level trend serves as external validation for the regression results, which suggest that usability of digital finance largely improves entrepreneurial growth. Similar POS and mobile transfer data from NIBSS indicates significant growth, largely attributed to SMEs and the agent banking network. The existing digital fintech channels are an example of the decline in transaction costs, enhanced speed of payment processing and wider coverage that has emerged and affirmed through this study findings on increase performance of entrepreneurship with friendly digital financial platforms (NIBSS;2024; CBN, 2023).

Table 8: Digital Finance Adoption and SME Performance Indicators

Indicator	Digitally Enabled SMEs	Non-Digital SMEs	Source
Average Sales Growth (%)	18.4	6.2	SMEDAN/NBS MSME Survey
Customer Base Expansion (%)	22.7	8.9	SMEDAN/NBS MSME Survey
Access to Credit (%)	41.3	17.5	SMEDAN/NBS MSME Survey

Source: SMEDAN & National Bureau of Statistics MSME Survey Report (2023).

Likewise, results from the SMEDAN/NBS MSME surveys show that businesses with digital financial tools experience higher sales turnover, larger customer bases and greater operational resilience than those without. The court's decision has a positive, growth-enhancing effect of digital financial innovation in Nigerian SMEs. Yet, the surveys also highlight ongoing constraints — including insufficient infrastructure, susceptibility to cybersecurity threats and low levels of digital literacy — that restrict the potential for digital finance to be a full driver of sustained entrepreneurial growth (SMEDAN & NBS 2023; Erondy et al., in press 2025). These indicators taken together add weight to the study's finding that digital financially enabled SMEs outperform non-digital businesses, even as they highlight the requirements for strategic institutional frameworks and capacity-building intervention systems-needed to fully leverage the developmental benefits of digital financial innovation in Nigeria.

Overall, the findings of this study are in line with the existing body of empirical studies on digital finance and SME growth which confirms that digital financial innovation is a strong determinant of entrepreneurial performance especially in Nigeria. Empirical evidences were found to suggest the theme that supported Technology Acceptance Model, which states a humble view of perceived ease of use and behavioural engagement as imperatives technology behaviour (Davis, 1989), Accounting for the coordination about digital finance usage variables and start-ups growth led to observed positive correlations between them. In this analysis, the use of mobile banking and digital payments appear to be the most powerful and pervasive indicators of revenue growth, as well as network expansion, highlighting their critical role at the daily operation of Nigerian SMEs.

Apart from these high-level channels, utilization of agency banking substantially fosters entrepreneurial growth due to the lowered spatial and transactional barriers associated with it, particularly for businesses in under-banked and semi-urban regions. Historically SMEs, especially in developing economies faced challenges from the lack of established agent and POS infrastructure;

however, with mobile platform, such costs are reduced and cash flow management is much smarter due to digitization of transaction steps. Digital lending technologies, although smaller in magnitude, still have an important complementary role by facilitating access to short-term working capital that enables inventory financing, cash-flow smoothing and business continuity. More generally, the empirical evidence supports Schumpeter's Theory of Innovation where financial innovation is crucial to improve firm competitiveness and promote economic development (Schumpeter, 1934). The moderate explanatory power of regression models suggests however that the growth-enhancing effect of digital financial innovation is conditioned on contextual factors such as infrastructural adequacy, regulatory coherence, quality of institutions and levels of digital literacy. This finding aligns with previous studies in developing economies, which point to the importance of structural and institutional factors that constrain the extent to which technological adoption translates into sustainable performance at the firm-level (Okafor & Sanni, 2023; World Bank, 2022).

A full proxy model was employed where the data reached out to October 2023 and strongly complemented each other without measurement gaps. The finding indicates that mobile banking, digital payment, agency banking and digital lending technologies simultaneously and independently enhance the performance of SMEs as measured by revenue growth and customer base expansion. The results furnish robust empirical evidence for the hypotheses of the study and demonstrates a direct relationship between digital financial innovation and entrepreneurial outcomes in Nigeria. These are solid empirical underpinnings for the conclusions and policy recommendations.

CONCLUSIONS AND RECOMMENDATIONS

It was concluded in the study that digital financial innovation stands as a potent catalyst for entrepreneurial growth in Nigeria's banking and SME ecosystem. However, the sheer size of its effect is tempered by surrounding quantitative measures including infrastructure sufficiency, regulatory coherence, and socioeconomic grade of digital literacy. These results align with the institutional and financial intermediation theories, which focus on whether systems of support or governance are in place to enable financial innovation to transition into longer-term economic results (CBN, 2023). The empirical evidence supports Schumpeter's Innovation Theory as it shows that how financial services can serve as a force of innovation and disruption to traditional banking models while creating new entrepreneurial opportunities with the advancement of fintech. Simultaneously, the verification of technology acceptance model emphasises the dominant effect of perception easiness and behavioural intention in adoption performance and firm-level outcome.

The following recommendations are made based on results of this research.

Focus Mobile Banking & Digital Payment Infrastructure to Grow SMEs

Since the use of mobile banking and digital payments were discovered to be the strongest and most consistent predictors of both revenue growth and customer base expansion, policy interventions should focus on fortifying these channels. Regulators and financial institutions ought to invest in improving the platform reliability, speed of transaction and interoperability of systems to make it a more usable facility for SMEs. Adoption intensity, the extent to which financial services are used for business purposes or for a wider range of financial services, and growth through digital finance would be enhanced by simplifying user interfaces and transaction failures. By focusing on these high-impact channels, policymakers can maximise Nigeria's entrepreneurial returns from digital financial innovation.

Strengthen — and formalise — agency banking networks to boost market reach

It is noteworthy that the positive contribution of agency banking usage to customer base expansion accentuates the need for last-mile financial accessibility for SMEs, especially among underserved and semiurban demographic communities. Policymakers should facilitate the growth of agent banking networks by providing licensing incentives, time-bound harmonised operational guidelines, and enhanced agent supervision. Not only does agent infrastructure minimize spatial barriers and transaction costs, but it also helps SMEs reach customers who are dependent on POS-based payments. Formalising agency banking and scaling it will thus enhance inclusive entrepreneurship across Nigeria.

Low-Litigation Budget: Appropriate Make Access To SME Agents Digital Assets

While digital lending technologies played a less pronounced role than payment-based channels, they positively underscore how digital credit can facilitate access to working capital and business continuity. Point 4: Financial regulators and lenders can encourage the development of digital lending products for SMEs that offer transparent pricing to ease credit access constraints through features like flexible repayment structures, where repayments are correlated with cashflow and enhanced risk assessment mechanisms. Also, alternative data and transaction histories from electronic payment platforms can improve credit scoring accuracy and lower the default risk. Reforms such as these could help bolster the growth contribution of digital lending while preserving financial stability.

Deepening the Complementary Institutional and Capability Baseline

The only moderate explanatory power of the regression models suggests that structural factors—particularly infrastructure quality, regulatory coherence and digital literacy—serve to moderate the growth effects from digital financial innovation. Policymakers should therefore also pair fintech expansion with continued investment in broadband connectivity, electricity supply, and cybersecurity governance. Furthermore, more targeted digital and financial literacy programmes tailored to the needs of SME operators should be scaled up in order to enable better usage of digital finance tools across demographics. Strengthening these institutional foundations would allow digital financial innovation to better translate into sustained entrepreneurial growth.

Suggestions for Further Studies

Future research should build on these findings and analyse the effects of digital financial innovation in an integrated, longitudinal and continuous process to assess its dynamic implications for entrepreneurial growth. This study uses cross-sectional survey data collected in a limited time period (2021–2025), which significantly limits the investigation of long-term causal relationships and sustainability of effects observed. Since the results show differences in strength of impact across digital financial tools—with, notably, a comparatively weaker effect for digital lending technologies—all remain either incremental or delayed growth effects—future studies could monitor SMEs over multiple periods to test if these innovations lead to positive cumulative economic outcomes. Moreover, the macroeconomic variables such as inflation, interest rates and policy changes used could be expanded to gain better understanding of how external economic shocks interplays with digital financial innovation to determine the performance of an entrepreneur in Nigeria.

Finally, we recommend that the moderating and contextual variables (in particular digital literacy, infrastructure quality, cybersecurity risks, and regulatory effectiveness) identified as key constraints in this study but not included in empirical modelling be considered more explicitly by future research.

The study acknowledges such factors as influencing the effectiveness of digital financial innovation; however, these were not quantitatively incorporated into the regression models. Further research could use sophisticated approaches such as structural equation modelling (SEM) or moderated regression analysis to study how these variables determine the strength and/or direction of the relationship between digital financial innovation and entrepreneurial growth. Also, future studies could involve under-represented segments—rural SMEs and informal businesses—with more pronounced barriers to adoption—to deliver more policy relevant and inclusive insights into the everchanging landscape of digital finance in Nigeria.

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