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FINTECH DEVELOPMENT IN NIGERIA: AN IN-DEPTH ANALYSIS OF IMPACT, PROSPECTS, AND CHALLENGES

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EXECUTIVE SUMMARY

The Nigeria's financial technology (Fintech) industry has expanded rapidly over the past decade, propelled by increasing mobile and internet penetration, demographic pressures from a large youthful population, and sustained policy reforms aimed at deepening financial inclusion. The industry has evolved into one of the Africa's most dynamic financial ecosystems, underpinned by more than 250 active firms operating across payments, lending, remittances, wealth management, and digital banking. This expansion is supported by advancements in artificial intelligence, blockchain, cloud computing, and data analytics. Regulatory initiatives such as the National Financial Inclusion Strategy, the CBN's Regulatory Sandbox, and the Nigeria Startup Act, collectively provide an enabling environment for innovation. Against this background, the study investigates how Fintech is transforming Nigeria's financial landscape, the opportunities it presents, and the challenges that accompany its rapid growth.

The study aims to achieve five core objectives:

(i) trace the conceptual evolution and structure of Fintech in Nigeria;

(ii) assess its impact on financial inclusion, payments efficiency, credit access, and economic activity;

(iii) examine operational and regulatory challenges confronting Fintech users, operators, and financial sector regulators;

(iv) evaluate stakeholder perceptions regarding future growth prospects; and

(v) propose policy actions to strengthen the sustainability and governance of the sector.

To address these objectives, the study employs a mixed methods approach, combining a comprehensive review of theoretical and empirical literature with primary data obtained from a structured survey. The survey captures responses from 379 participants, including 239 users, 127 regulators, and 13 operators, allowing a holistic view of the Fintech ecosystem from the perspective of key actors. A descriptive approach is adopted to analyse data on usage behaviour, operational constraints, regulatory experiences, and expectations for future development.

Findings from the study reveal that Nigeria's Fintech sector has become deeply embedded in everyday financial interactions, with mobile banking, unstructured supplementary service data (USSD) channels, and digital payment applications emerging as the most widely used platforms. More than 86.0 per cent of users expressed preference for Fintech services over traditional banking, citing convenience, speed, accessibility, and cost savings as

primary motivations. The data also shows that Fintech has significantly strengthened the country's financial inclusion agenda by increasing access to digital payments, improving credit availability, and facilitating more efficient financial transactions.

These trends are corroborated by the rapid growth in electronic payment volumes and values across ATM, POS, and mobile channels, especially between 2018 and 2023. Furthermore, stakeholders identify mobile banking, SME lending, e-commerce, and cross border remittances as the most promising areas for continued growth. Emerging innovations such as open banking, artificial intelligence, machine learning, blockchain systems, and digital identity enhancements are expected to accelerate this momentum.

Despite this progress, the study highlights notable challenges that could hinder sustainable expansion. Operators face high licensing and capital requirements, fragmented and sometimes overlapping regulations, and limited access to domestic venture capital funding. Infrastructural weaknesses including unreliable internet connectivity, and occasional system failures coupled with low digital literacy, undermine user experience and trust. Regularly reported operational issues include failed transactions, identity verification barriers, cybersecurity threats, and frequent compliance infractions, such as operators exceeding permissible

licensing boundaries. Regulators, while acknowledging Fintech's positive contributions, express concerns about governance gaps, inconsistent adherence to prudential rules, and the need for more robust oversight mechanisms. These challenges underscore the need for coordinated reforms to strengthen the resilience and credibility of the Fintech ecosystem.

The study concludes that Fintechs can accelerate Nigeria's economic transformation by broadening access to financial services, reducing transaction costs, supporting SME growth, and fostering innovation across the financial system. To realise this potential, several policy actions are recommended. These include harmonising regulatory frameworks to eliminate fragmentation, reducing entry barriers for start-ups, investing in digital and payment infrastructure, strengthening data protection and cybersecurity enforcement, and expanding financial digital literacy initiatives nationwide. In addition, promoting local venture capital participation, strengthening innovation through sandboxes, open banking, and industry regulator partnerships are critical for scaling indigenous solutions. With coherent policies, sustained investment, and improved consumer trust, Fintechs can serve as a powerful engine for financial inclusion, economic diversification, and long-term competitiveness in Nigeria.

1.0 INTRODUCTION

Historically, technology has played a significant role in the development of financial services. This is evidenced by Western Union's invention of the telegraph in the 1870s to transfer money, and the contemporary use of distributed ledger and blockchain technology in cryptocurrencies, as well as machine learning and artificial intelligence in credit scoring and financial advisory services (Gomber et al., 2017). The global financial crisis of 2007–2009 led to a loss of confidence in traditional financial services methods (Arner et al., 2016; Philippon, 2016). Consequently, there was a surge in interest in financial technology (Fintech) solutions designed to improve and automate financial services. This surge drove the development and adoption of more advanced Fintech solutions (Buchak et al., 2018).

Fintech is at the intersection of finance and technology and defined as "technology-enabled innovation in financial services that could result in new business models, applications, processes or products with an associated material effect on financial markets and institutions, and the provision of financial services" (FSB, 2019). Fintechs use technology to enhance efficiency, reduce costs and entry barriers, stimulate competition, and expand financial inclusion, especially among the underserved populations (IMF, 2022).

Globally, the rise of Fintech has been driven by the growth of telecommunications, the internet and smartphones, the invention of technologies, such as distributed ledger technologies (like blockchain), artificial intelligence, machine learning and big data analytics, cloud computing, among others (World Bank, 2025). Furthermore, changing consumer behaviour and expectations have contributed to the rapid adoption of Fintech. Consumers have shifted attention to online retailers, making digital touchpoints essential in the customer journey. Concurrently, other aspects of economic activities, including trade, commerce, and consumption, have evolved to prioritise a digital-first approach. This has created an increased demand for Fintech services and the adoption of Fintech solutions by traditional financial service providers. Another key driver is the elevated levels of investments towards Fintech innovations following the 2007-2009 global financial crisis.

In recent years, there has been a significant rise in investment in Fintech initiatives worldwide. According to KPMG (2021), the total value of global Fintech investment rose from US$51.20 billion in 2014 (1,628 deals) to US$210.10 billion in 2021 (5,684 deals). Elsaid (2023) noted that venture capital investments in Fintech companies globally grew to US$115.00 billion in 2021 from US$1.89 billion in 2010. Additionally, Research and Markets (2020) forecasts that the global Fintech market will grow at a compound annual growth rate

(CAGR) of 23.6 per cent from 2021, indicating a large, fast growing, and viable market opportunity and a relevant segment of the financial sector. The growth of Fintech has given rise to some dominant players – Ant Group and Tencent (in China), Coinbase, Stripe, Chime, and Venmo (in the US), Klarna, Revolut and N26 (in Europe) – in payments, neo-banking, alternate lending, and investment & wealth management. Key African innovators such as Flutterwave, Paystack, OPay, M-Pesa, and Interswitch, are also at the forefront of advancing digital payments and financial inclusion on the continent (CNBC & Statista, 2023; Mordor Intelligence, 2024; Makreo Research, 2025).

Fintech has been adopted in the financial system for a wide range of processes including core banking applications, data storage and processing infrastructure, processing credit risks, digital lending and running hedge funds. Fintechs enable cryptocurrencies, other digital assets, crowdfunding, investments, wealth management, and remittances. These are facilitated through machine learning algorithms, blockchain technology, and artificial intelligence.

In Nigeria, the Fintech industry has evolved into a vibrant ecosystem, enabled by advancements in telecommunications, internet penetration and payments system reforms. Active internet subscribers and broadband penetration have grown to 86 million users and 45.1 per cent, respectively, in 2022, from 41 million users

and 21.7 per cent in 2017 (NCC, 2022). Furthermore, critical reforms such as the Central Bank of Nigeria Payments System Vision 2020 (2007), the National Financial Inclusion Strategy (2012, 2018), the Cash-less Policy (2012), the Regulatory Sandbox framework (2018, 2021), and the Open Banking Initiative (2021), supported the advancements in the Nigerian Fintech ecosystem. These initiatives have defined operational standards and created service delivery frameworks, thereby boosting public trust in the system. Additionally, rising investments, particularly, venture capital funding also supported the growth of Fintechs in Nigeria. Fintech investments, mainly in venture capital, rose from US$200.00 million in 2018, to US$439.00 million in 2020, and had reached US$1.20 billion by 2022 (Bayen & Cuvellier, 2023).

Advancements in the Fintech industry have improved access to financial services for underserved and unserved segments of the population. This is highlighted by the rise in financial inclusion to 64.1 per cent in 2020, from 53.7 per cent in 2010 (EFInA, 2021). Dominant players in the payment's ecosystem include Opay, Moniepoint, Paystack, Paga, Flutterwave and Interswitch. For investments and wealth management, Piggyvest, Cowrywise, Rise, Bamboo, Chaka, and Wealthng are the key operators. Carbon, VFD, Kuda, Glade, Brass, and ALAT are front-runners in digital banking; while Binance, Quidax, Yellowcard, Bundle, and Luno lead in the cryptocurrency and digital assets ecosystem.

Despite the advantages, the rapid growth of Fintechs and attendant disruptive business models raise concerns for consumer protection and financial stability. Therefore, financial industry regulators would benefit from a deeper understanding of the scale, drivers, challenges, and opportunities of the Fintech ecosystem that is provided in this study. The study conducts an extensive review of the literature and a survey of stakeholders on the challenges and prospects of the Fintech industry and finds that Fintechs have strong potential to drive Nigeria's economic transformation by improving financial access, lowering costs, and boosting innovation. However, achieving this requires coordinated policies, particularly regulatory harmonisation, infrastructure investment, stronger cybersecurity, and enhanced digital literacy, alongside support for local innovation and funding.

Following the introduction, section two explores key concepts and a literature review section three focuses on Fintech development in Nigeria, section four analyses the impact of Fintech in Nigeria, section five considers empirical analysis, section six examines issues, challenges and prospects of Fintech in Nigeria, while section seven comprises conclusion and recommendations.

2.0 LITERATURE REVIEW

2.1 Theoretical Literature

2.1.1 Schumpeterian Theory

Schumpeter's ideas on financial inclusion are rooted in his broader theory of economic development, which underscores the significance of entrepreneurship, innovation, and technological advancements in driving economic progress. Central to Schumpeter's concept of financial inclusion is the idea that a well-functioning financial system plays a pivotal role in fostering entrepreneurship, innovation, and overall economic growth. Schumpeter (1934), as cited in King and Levine (1993), posits that the banking sector, as a major financial intermediary, exerts a substantial influence on long-term growth and productivity by facilitating capital accumulation.

The theory outlines pathways through which financial inclusion contributes to economic development. These are discussed below:

i. Facilitating Entrepreneurship: Access to financial services enables entrepreneurs to mobilise capital for new ventures, invest in innovative ideas, and pursue potentially transformative projects. By extending funding and assistance to entrepreneurs, the financial system fuels the process of creative destruction, where new ideas and

technologies supplant established industries, driving economic advancement.

ii. Fostering Innovation: Financial inclusion stimulates innovation by providing entrepreneurs with the necessary resources to develop and commercialise new products, processes, and technologies. By channelling funds to innovative endeavours, financial institutions play a critical role in nurturing dynamic competition and driving the process of creative disruption within the economy.

iii. Promoting Economic Growth: An efficient financial system enhances the allocation of resources by directing savings towards their most productive uses. This encourages investment, enhances productivity, and spurs overall economic expansion. Financial inclusion ensures that a broad spectrum of individuals and businesses can partake in productive activities, amplifying its positive impact on economic development.

iv. Reducing Income Inequality: Financial inclusion has the potential to reduce income inequality by granting marginalised individuals and communities' access to financial services. This enables them to accumulate assets, smoothen consumption, and invest in human capital. By broadening financial access and opportunities, the

financial system can foster more inclusive economic growth and enhance social mobility.

The Schumpeterian theory on economic development explains how Fintech innovations, such as mobile payments, digital lending, and wealth tech (use of digital tools, software, and platforms to deliver wealth management services, such investing, financial planning, portfolio management, and advisory services) could disrupt traditional banking and foster financial access. These technology driven services reflect Schumpeter's idea of creative destruction by replacing older financial models and driving greater efficiency and inclusion in the Nigerian financial system.

2.1.2 Diffusion of Innovation Theory

The Diffusion of Innovation (DOI) theory elucidates the process by which an idea or product gains traction and spreads among a population or social system. Diffusion occurs when individuals within a social context adopt a novel idea, behaviour, or product, signalling a departure from previous practices. The adoption of an innovation unfolds gradually, with certain individuals embracing the innovation sooner than others. Research indicates that early adopters possess distinct characteristics compared to those who adopt the innovation at later stages. Accordingly, when advocating for the adoption of an innovation within a target

population, it is imperative to comprehend the characteristics that could facilitate or impede adoption.

The DOI theory identifies five adopter groups, including innovators, early adopters, early majority, late majority, and the laggards, with most of the population falling within the early and late majority categories. These are discussed below:

i. Innovators: These individuals strive to be at the forefront of innovation, displaying a penchant for novel ideas and ventures. They exhibit a willingness to undertake risks and are often the pioneers in developing new concepts. Minimal effort is required to engage this segment, as they readily embrace innovation.

ii. Early Adopters: Representing opinion leaders, early adopters assume leadership roles and readily embrace change. They are cognizant of the necessity for change and thus exhibit a high propensity to adopt new ideas. Strategies aimed at this cohort may include instructional materials and informational resources on implementation, as they require minimal persuasion to embrace change.

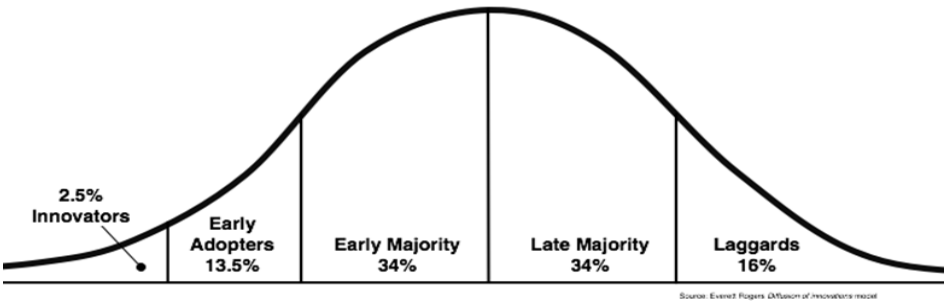
iii. Early Majority: Although not leaders, the early majority adopts new ideas prior to the average individual, albeit after witnessing evidence of the innovation's efficacy. Appeals to this segment often involve showcasing success

stories and substantiating the innovation's effectiveness through empirical evidence.

iv. Late Majority: Sceptical of change, the late majority adopts innovations only after they have been endorsed by the majority. Strategies to engage this group typically entail presenting data on the widespread adoption and successful outcomes of the innovation.

v. Laggards: Characterised by a proclivity towards tradition and conservatism, laggards exhibit strong resistance to change and are the most challenging group to sway. Strategies targeting this cohort may involve presenting statistical evidence, invoking fear appeals, and leveraging pressure from other adopter groups.

Figure 1: Adopter Categories



Source: Boston University

The DOI theory has some limitations as it tends to emphasise the characteristics of innovations and adopters rather than collaborative engagement. It is generally more effective in explaining the adoption of new behaviours than the cessation of existing ones.

2.1.3 The Institutional Theory

The institutional theory examines the influence of institutions, regulations, and policies on the outcomes of financial inclusion. According to this theory, individuals continually interact with both formal and informal institutions within society, and these interactions shape their perceptions regarding whether to engage with the formal financial sector, remain within it, exit after joining, or abstain altogether.

Key assumptions of the institutional theory of financial inclusion include the following:

i. incomplete information on formal financial services (Ozili, 2020);

ii. incomplete knowledge on the requirements for accessing such services (Claessens & Tzioumis, 2006); and

iii. uncertainty regarding the constraints and risks associated with participation in the formal financial sector.

Other theories pertinent to financial inclusion include the market failure theory, which posits that market inefficiencies like information asymmetries, transaction costs, and externalities can impede financial service provision to specific population segments. The Capability Approach, originally developed by Sen (1999) and further elaborated by Nussbaum (2000), emphasise the importance of enhancing individuals' knowledge, skills, and resources. This empowerment enables them to access and effectively utilise financial services, leading to improved well-being. The Social Exclusion Theory underscores how social, economic, and institutional factors can marginalise certain groups, such as women, rural populations, and low-income individuals, from accessing financial services (Silver, 1994). Lastly, the behavioural economics theory draws on psychological insights to elucidate how cognitive biases, heuristics, and social norms influence

financial decision-making and behaviour (Kahneman & Tversky, 1979).

2.2 Empirical Literature

Agarwal and Chua (2020) conducted a comprehensive review of recent advancements in Fintech and household finance by examining its effects on payments, lending, and portfolio decisions in China in 2020. They found that various Fintech innovations, such as digital payments, mobile money, and robo-advising, positively impacted households by facilitating consumption, borrowing, and portfolio diversification. However, they also identified instances of overconsumption and excessive borrowing among certain households.

Ouma et al. (2017) investigated the impact of mobile telephony on savings mobilisation in sub-Saharan Africa from 2013 to 2017. Their findings revealed that access to mobile financial services significantly increased the likelihood of saving at the household level, as well as the amounts saved, due to the convenience and frequency of mobile transactions.

Chang et al. (2020) explored the implications and characteristics of Fintech and blockchain technology in the financial sector, highlighting critical challenges and ethical considerations. Using qualitative interviews with industry experts, they identified instances of knowledge hiding in blockchain technology and analysed the

underlying reasons using the Theory of Planned Behaviour approach. The study finds that although FinTech and blockchain offer significant potential for innovation and transparency, their effectiveness is constrained by human behaviour, particularly knowledge hiding. This behaviour is influenced by individual attitudes, social pressures, and perceived control, consistent with the Theory of Planned Behaviour.

Godgift et al. (2018) investigated the impact of Fintech on SME operations in Nigeria, emphasising its positive contribution to economic development. Through a survey of SMEs across various sectors, they found that Fintech adoption enhanced efficiency and competitiveness of SMEs, thereby fostering national development.

Nazrul Islam et al. (2022) evaluated the impact of mobile banking, internet banking, and POS banking on the financial service delivery of deposit money banks in Nigeria. Their findings revealed that all the three channels significantly enhanced financial service delivery, with POS exerting the greatest influence, followed by internet banking, while mobile banking made a comparatively modest contribution. This finding suggests the need for improvements in user experience and security and privacy infrastructure to build user trust and enhance the adoption of digital banking services.

Ojo and Nwaokike (2018) found that the adoption of FinTech solutions by DMBs is driven by the need to enhance financial accessibility, reduce transaction costs, and improve banking efficiency. The paper proposed regulatory responses to foster the development of the Fintech industry in Nigeria, emphasising the importance of collaborative and inclusive approach between regulators, financial institutions, and Fintech firms in developing Fintech policy to promote financial inclusion and stability.

Similarly, Aidonojie et al. (2022) employed a hybrid legal-empirical methodology surveying 301 respondents to assess legal challenges and public perceptions of FinTech operation. The study highlighted regulatory challenges facing Fintech and digital banking in Nigeria, advocating for a review of the legal framework to ensure adequate regulation and protection against cybercrime. They also emphasised the importance of public education and infrastructure development to support digital transactions.

Yermack (2018) underscored the significance of infrastructure and legal frameworks in facilitating Fintech development, noting disparities between common law and civil law countries. Countries with common law systems were found to have more conducive environments for Fintech due to better investor protection and lower costs of capital.

In summary, studies revealed that while FinTech adoption in Nigeria demonstrated significant benefit, including enhanced financial service delivery, and commercial sector growth, critical challenges persist, including inadequate legal framework, cybersecurity vulnerabilities, regulatory uncertainties and infrastructure deficits. Similarly, the studies suggest that advancements in Fintech have played a crucial role in simplifying cross-border payments, reducing transaction times, and promoting financial inclusion. The studies recommend comprehensive legal reforms, enhance cybersecurity measures, stakeholder education, and regulatory clarity to foster sustainable FinTech ecosystem development in Nigeria. In addition, addressing regulatory challenges, enhancing infrastructure, and promoting digital literacy are essential for mitigating associated risks and maximising the benefits of Fintech.

3.0 FINTECH DEVELOPMENT IN NIGERIA

3.1 Overview of the Market Structure of the Fintech Ecosystem

In 2021, Nigeria's Fintech sector comprised approximately 250 companies (Fintech Times, 2021). The broader ecosystem also included key stakeholders such as banks, telecommunications companies, government agencies, higher institutions and researchers, technology providers, regulatory sandbox participants, and investors. According to Frost & Sullivan (as cited in the Fintech Times (2022), Fintech revenue in Nigeria was projected to grow to US$543.3 million in 2022, from approximately US$153.1 million in 2017. The country's large population, robust financial industry, buoyant youthful demographic, and evolving tech ecosystem position it for further advancements in Fintech.

Despite these promising developments, Nigeria faces significant challenges. Its insurance penetration rate remains remarkably low at 0.4 per cent. However, like many African nations, Nigeria has ample room for growth in the insurance sector. The 2021 EFinA report revealed that below 30.0 per cent of adult Nigerians utilise financial services from non-banking institutions. Furthermore, 97.0 per cent of Nigerians lack health insurance, investments/wealth management options, and access to cross-border payment solutions.

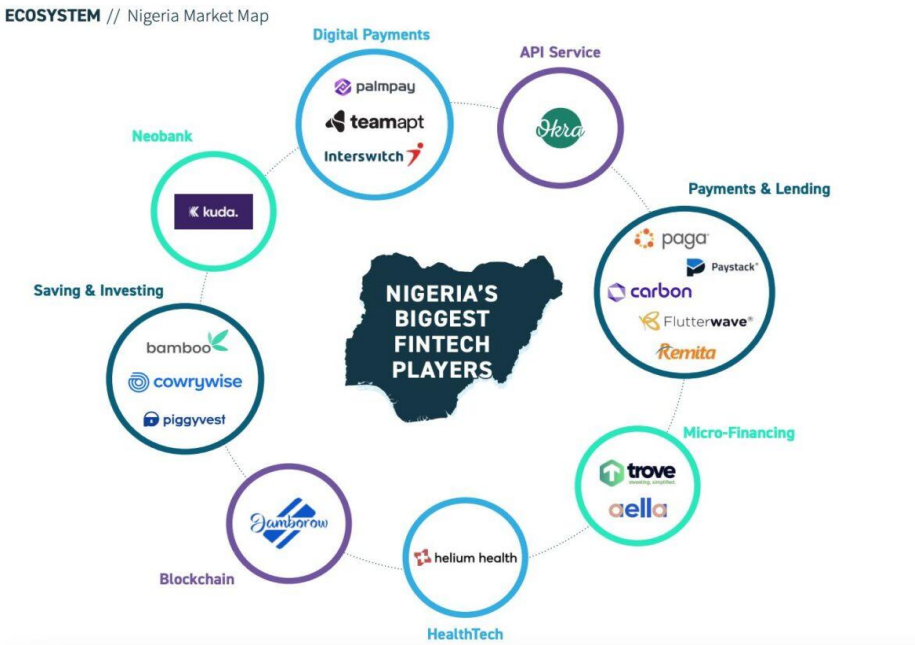
According to DataReportal (2021), Nigeria has an impressive 200 million mobile connections approximately, covering over 90.0 per cent of its populace. While 10.0 to 20.0 per cent of Nigerians use smartphones, the majority rely on feature phones. Additionally, about 50.0 per cent of the populace has internet access. Although these figures may not match those of developed nations, they surpass many of Nigeria's African counterparts.

Despite these positive indicators, there remains untapped potential. Fintech solutions have room to flourish in this vast market. Notably, the National Financial Inclusion Strategy (NFIS) aimed for 80.0 per cent financial inclusion by 2020, but the actual rate stands at 64.1 per cent. Nevertheless, concerted efforts are underway to bridge this gap and achieve the ambitious target.

Nigeria's Fintech ecosystem has recorded a significant success so far. Nigeria, South Africa, Kenya, and Egypt, are often considered to be the major regional Fintech hubs on the African continent. Of these four countries, Nigeria remains the country with the highest potential. In terms of metric of Fintech startup funding, out of the US$4.20 billion raised in Africa in 2021, Nigeria took the largest share with US$1.37 billion, followed by South Africa with US$838.00 million, Egypt with US$588.00 million, and Kenya with US$375.00 million (Cuvellier & Bayen, 2023). Similarly, Nigeria accounted for five of the seven African based Fintech unicorn companies, with a market

valuation of at least US$1.00 billion. These first two unicorn companies in Nigeria are Interswitch and Jumia, with Flutterwave, Opay and Andela joining recently. Nigeria's Fintech ecosystem has achieved significant global milestones compared with its African counterparts.

Figure 2: Nigeria's Fintech Ecosystem Map



Source: The Fintech Times

Figure 2 illustrates the structure of Nigeria's fintech ecosystem by mapping firms across key segments such as payments, lending, savings & investments, insurance, blockchain, and financial infrastructure, showing that payments and transfers dominate the

landscape while other areas are gradually expanding. The chart highlights a diverse and rapidly evolving sector, with increasing participation in infrastructure services like APIs that support scalability and innovation. It also reflects a strong focus on financial inclusion, as many platforms target underserved populations and SMEs, while the presence of multiple players in each category indicates intense competition and innovation, positioning Nigeria as a leading fintech hub in Africa.

The 2016 economic recession in Nigeria prompted a significant shift toward digital currencies, particularly Bitcoin, as a means of safeguarding savings and assets. This shift was largely driven by currency depreciation, inflation, and economic instability, which pushed many Nigerians to seek alternative stores of value (Business School Cornell, 2025; CoinMarketCap Academy, n.d.). Consequently, Nigeria has emerged as Africa's largest crypto market and one of the most significant globally, with high adoption rates, large transaction volumes, and millions of users actively utilising cryptocurrencies (Agwunobi, 2025; Business Insider Africa, 2026).

A report by KuCoin (2022) revealed that 33.4 million Nigerians, between 18 to 60 years, had invested in digital assets in the six months prior. In October 2021, Nigeria introduced its central bank digital currency (CBDC) known as the e-Naira to create a legal

substitute for cryptocurrencies. The e-Naira aims to enhance remittances, facilitate cross-border trade, improve financial inclusion, and streamline government welfare payments.

In the realm of mobile money, Nigeria took a unique approach. The Central Bank introduced a novel banking license category known as payment service banks (PSBs) in 2018. This innovative model leverages the strengths of businesses, including mobile network operators, while maintaining a bank-led framework rather than a telecoms-led one. Unlike in East Africa, where mobile money enjoys widespread popularity, Nigeria's population remains cautiously receptive to the concept. Nevertheless, the potential for growth persists, promising an exciting trajectory for the nation's financial ecosystem.

Another rapidly growing Fintech service in Nigeria is the buy-now-pay-later (BNPL). The service allows consumers to make purchases and pay later in instalments, bridging the gap for those without credit cards. In 2023, BNPL usage in Nigeria reached an estimated US$325.00 million, and projections indicate it could soar to US$1.20 billion by 2028. Local players like Credpal are at the forefront, offering BNPL solutions not only within Nigeria but also across borders.

In this dynamic ecosystem, key stakeholders include the Central Bank of Nigeria (CBN), the Securities and Exchange Commission of

Nigeria, the National Insurance Commission (NAICOM), the Fintech Association of Nigeria, and the Nigerian Insurers Association. Together, they pave the way for a more inclusive financial future.

3.2 Licence Categorisation of Fintechs in Nigeria

The CBN in its guideline, released on December 10, 2020, categorised Fintechs in Nigeria into four broad categories (Switching and Processing, Mobile Money Operations, Payment Solution Services, and the Regulatory Sandbox) according to permissible activities.

i. Switching and Processing: Companies in this category oversee non-bank acquisition services, clearing and settlement agents' services, as well as switching and processing. Paystack Payment Ltd., eTranzact International Ltd., and Interswitch Ltd. are examples of switching and processing companies.

ii. Mobile Money Operations (MMOs): This category of companies issues electronic money by creating e-wallet, e-money issuance and the management of pool accounts. Mobile money technology enables customers receive, store, and transfer money using mobile phones and other electronic devices. MMOs have a minimum capital requirement of ₦2.00 billion and are permitted to act as

super-agents, as stated in the CBN guideline. Some of the MMOs in Nigeria include Pagatech Limited, Palmpay, Opay Digital Services Limited (Formerly Paycom Nigeria).

iii. Payment Solutions Services (PSSs): PSSs primarily provide end-to-end solutions, and technical infrastructure to stakeholders. They are integrated with card schemes and core banking systems, with some operators offering comprehensive payment solution services. These services encompass everything that super agents are permitted to offer, including payment terminal and payment solution services. Within the financial services sector, PSSs majorly provide infrastructure to facilitate end-to-end electronic payment solutions by seamlessly integrating card schemes with core banking systems. The main arms of PSSs are payment solution providers, payment terminal service providers, and super agents. A minimum capital requirement of ₦250.00 million is mandated for a license to operate in all three arms of PSSs.

   a. Payment solutions service providers (PSSPs) focus on application development, payment solutions, merchant service aggregation, gateways, and payment processing. To obtain an operating license, a capital requirement of ₦100.00 million is mandated.

b. Payment terminal services providers (PTSPs) are responsible for deployments, services and ownership of point-of-sale (POS) terminals. They also engage in payment terminal application developer (PTAD) roll-out, and training of agents and merchants. The license requirement for this arm is ₦100.00 million.

c. Super agents are saddled with the responsibility of recruiting and managing agents in line with CBN regulatory requirements and other activities specified in the regulatory framework for licensing super agents in Nigeria. For this subcategory of payment service provider, the minimum capital requirement is ₦50.00 million.

iv. Regulatory Sandbox: The Regulatory Sandbox introduced by the Central Bank of Nigeria (CBN) is a controlled framework that allows FinTech firms, financial institutions, and innovators to test new financial products, services, or business models in a supervised environment before full market deployment. It enables participants to operate temporarily under relaxed regulatory requirements, while the CBN closely monitors their activities, including customer limits and transaction thresholds, to manage risks. The sandbox aims to foster innovation, enhance financial

inclusion, and reduce regulatory uncertainty, while ensuring that new solutions are safe, compliant, and effective before they are fully licensed and scaled across the financial system.

3.3. Operational Framework of Fintech in Nigeria

In recent years, globalisation and shocks to both the global economy and the Nigerian financial system led to the implementation of various banking system reforms. These reforms came about in a bid to bolster the resilience of banks, build trust and confidence, as well as enhance the overall stability in the financial system. A prime illustration of such reforms is the Nigeria Payment System Vision 2025 (PSV 2025), which promotes the integration of digital technologies, such as electronic payments, open banking, and blockchain, into financial services to enhance efficiency, resilience, and financial inclusion in Nigeria's banking system. Below are the specific guidelines/regulations for the various Fintech platforms in Nigeria.

Central Bank of Nigeria (CBN)

To ensure safety, efficiency, and effectiveness of the use of Fintech, several operational guidelines were instituted and issued by the CBN.

3.3.1 Risk-Based Cybersecurity Framework and Guidelines for Deposit Money Bank (DMBs) and Payment Service Providers (PSBs) (2018):

This framework sets minimum cybersecurity requirements for banks and FinTech-related providers operating in Nigeria. It adopts a risk-based approach, requiring institutions to conduct regular risk assessments, implement security controls (encryption, access control), and establish incident response mechanisms. It directly applies to fintech firms operating as PSPs and indirectly affects others through integration with banks.

3.3.2 Guideline for Mobile Money Services

In 2009, the Central Bank of Nigeria (CBN) issued comprehensive guidelines for mobile money services. The primary objective was to ensure proper regulation of mobile financial services within the country. These services encompass a range of financial offerings delivered via mobile devices, which include mobile payments, credit card payments, and QR code-based transactions. To

facilitate their implementation, the guidelines outline two distinct models, bank-led model and non-bank-led model.

In the bank-led model, a bank or a consortium of banks assumes the role of a lead initiator in providing mobile money services as part of their banking offerings.

In the non-bank-led model, a corporate organisation, specifically licensed by the CBN, can also function as a lead initiator of mobile money services. This model extends beyond traditional deposit money banks or telecommunication companies. The guidelines further define the roles and responsibilities of various participants in the mobile money industry.

3.3.3 Licensing and Regulation of Payment Service Banks (PSBs) (2018):

This was Introduced to promote financial inclusion, especially in rural areas. The guideline stipulates that PSBs can: accept deposits; facilitate payments and remittances. But cannot: grant loans. Telcos and fintechs often leverage this framework.

3.3.4 Regulatory Framework for Licensing and Operation of Payment Service Providers (PSPs) (2020):

This creates a unified structure for fintech categories such as switching companies; payment terminal service providers; and payment solution service providers. It ensures standardisation and regulatory oversight.

3.3.5 Guideline for Electronic Payment Channels (2020):

The CBN issued comprehensive guidelines governing the use and operations of e-payment channels covering automated teller machines (ATMS), POS machines, mobile point of sale (MPOS) devices and internet-based transactions. These guidelines identify key stakeholders (including cardholders, acquirers, issuers, and merchants), outline the roles and responsibilities of each stakeholder, and specify technical standards for ATM technology, POS terminals and devices, web payment gateways and settlement mechanisms.

3.3.6 Open Banking Framework in Nigeria (2023):

It promotes data sharing between financial institutions and fintech firms through APIs. The key objectives: enhance innovation;

improve competition; and enable customer-controlled data access.

3.3.7 Guideline for Unstructured Supplementary Service Data

The guidelines seek to reduce the risks associated with the implementation and use of unstructured supplementary service data (USSD) technology. It took effect in October 2018 and stipulates that only mobile network operators and the CBN licensed entities with a letter of no objection or letter of introduction from the CBN are eligible for the issuance of USSD short codes by the NCC. Customer limit per day is ₦100,000.00 for all transactions on the USSD channel, and any customer requiring a higher limit executes documented indemnity. Financial institutions providing this channel must encrypt all USSD information and offer their customers the option to opt in or out. Furthermore, the guideline stipulates that no USSD channel is to be deployed for financial services unless a deactivation mechanism, which allows users block their accounts from operating USSD services, is put in place.

3.3.8 Operational Framework for Regulatory Sandbox:

In January 2021, the CBN launched a framework for a regulatory sandbox programme. This initiative focuses on fostering innovation in the financial services sector, particularly regarding payment solutions and emerging disruptive technologies. The sandbox

environment allows Fintech companies to assess their new products in a controlled setting under regulatory oversight. This pilot testing phase provides valuable insights for both innovators and regulators. Innovators can gather real-world data and feedback on their products, while regulators gain a deeper understanding of these technologies to inform future regulations.

Promoting financial inclusion and overall improvement of financial services in Nigeria is a core objective of this framework. To ensure consumer protection, the CBN requires applicants to identify and mitigate potential risks associated with product testing within the sandbox.

National Information Technology Development Agency (NITDA)

3.3.9 Nigeria Data Protection Regulation (NDPR) (2019):

Nigeria's primary data protection law before the Data Protection Act. The guideline regulates: collection, processing, and storage of personal data; consent requirements; and data subject rights. Fintech firms must ensure compliance due to heavy reliance on customer data.

3.3.10 NDPR Implementation Framework (2020):

Provides guidance on implementing the NDPR, including: roles of Data Protection Compliance Organizations (DPCOs); audit requirements; enforcement mechanisms.

Nigerian Communications Commission (NCC)

3.3.11 Nigerian Communications Act (2003):

The primary law governing telecommunications. Relevant to fintech because: fintech platforms rely on telecom infrastructure; and ensures fair competition and service quality.

3.3.12 Consumer Code of Practice Regulations (2007):

Protects telecom consumers by ensuring transparency in pricing, quality of service, and complaint redress mechanisms. Important for fintech services delivered via mobile networks.

3.3.13 NCC Data Protection Guidelines for Telecom Operators (2011):

Complements NDPR by focusing on: protection of subscriber data; and confidentiality of communications. Vital for fintech services using mobile channels.

3.4 Regulatory Framework for Fintech Operations in Nigeria

3.4.1 Exposure Draft of New CBN Licensing Regime for Payment System Providers

The CBN on 9 December 2020 issued the licensing requirements for PSPs and Fintech companies to address potential risks arising from rapid developments in financial technologies. The new regime categorises licenses into super, standard, and basic. Each tier has a specific validity period and minimum capital requirement. These are discussed as follows:

- Super license – This is valid for 3 years. It consolidates previous licenses for PSSP, PTSP, non-bank merchant acquiring, switching, and super agency. The minimum shareholder fund for super license is ₦5.00 billion;
- Standard license – This category, valid for 3 years, combines previous licenses for MMO, super agency, and non-bank merchant acquiring. The minimum shareholder fund for this tier is ₦3.00 billion; and
- Basic license – This 2-year license applies to previous licenses for super agency, PSSP, and PTSP. Notably, super agencies under this category have a lower minimum shareholder fund of ₦50.00 million compared with ₦100.00 million for other basic licensees.

This revision replaces the prior minimum capital requirements of ₦2.00 billion for mobile money operators and ₦250.00 million for payment service providers.

The CBN aims to promote a more robust and secure financial ecosystem while fostering innovation within the Nigerian Fintech landscape. The new licensing regime outlines notification requirements for Fintech companies to inform the CBN of new activities they intend to undertake within their licensed category. To prevent potential conflicts within the system, the regime also contains a mutual exclusivity clause that, for instance, prohibits switching services from conducting card schemes and mobile money operations.

3.4.2 Regulation for Direct Debit Scheme

The regulation of Direct Debit Scheme in Nigeria (2017, revised 2018) is primarily driven by the CBN, supported operationally by industry infrastructure providers such as the Nigeria Inter-Bank Settlement System (NIBSS). The regulation is governed by detailed regulations ensuring authorisation, transparency, and consumer protection. This regulation standardises direct debit practices, replaces fragmented earlier rules across platforms, and harmonises traditional and digital (e-mandate) channels. This established a framework for cashless, recurring payments. The system allows a

biller (the party receiving payment) to collect authorised amounts directly from a payer's bank account. The regulations acknowledge the various channels used for direct debits and outline operational standards for the process. Billers must be registered businesses within Nigeria and both billers and payers' banks must be members of the Nigerian clearing system or utilise a PSP that accepts direct debits. All participants (payers' banks, billers, and PSPs, if applicable) are required to maintain records of direct debit transactions for at least six years after a mandate is terminated. Overall, Nigeria's direct debit regime has evolved from loosely coordinated clearing rules into a comprehensive, centrally regulated system aligned with modern digital payment practices.

3.4.3 Regulation on Blockchain and Virtual Currency

Nigeria now operates a structured and progressively evolving regulatory framework for cryptocurrencies and digital assets. The CBN provides oversight of the banking and financial system, while the Securities and Exchange Commission (SEC) serves as the primary regulator of digital assets. Under the current regime, cryptocurrencies are permitted but treated as regulated securities, whereas blockchain technology is actively encouraged and supported. Overall, this policy stance reflects a transition from earlier restrictive measures to a more balanced supervisory

approach, aligning Nigeria's regulatory framework with emerging global best practices.

In January 2017, CBN issued a circular highlighting potential risks associated with virtual currencies and virtual currency exchanges. The circular emphasised the following measures for banks and other financial institutions (OFIs) until formal regulations are established:

i. Prohibition on Virtual Currency Activities: Banks and OFIs were directed to abstain from using, holding, trading, or transacting in virtual currencies like Bitcoin or Litecoin.
ii. Anti-Money Laundering (AML) Controls for Existing Customers: Existing bank customers involved in virtual currency exchange were required to implement robust AML/Combating the Financing of Terrorism (CFT)/Countering Proliferation Financing (CPF) controls. These controls ensure compliance with customer identification, verification, and transaction monitoring regulations.
iii. Termination of Non-Compliant Relationships: Banks and OFIs were empowered to terminate relationships with virtual currency exchange customers who failed to implement adequate AML/CFT/CPF controls.

iv. Reporting of Suspicious Transactions: The CBN mandated the immediate reporting of any suspicious transactions to the Nigerian Financial Intelligence Unit (NFIU).

CBN further emphasised its stance in a February 2018 press release. It reiterated that virtual currencies and exchanges lack official licensing or regulation in Nigeria. Therefore, individuals or businesses dealing in cryptocurrencies are not protected by Nigerian law.

3.4.4 Framework for Quick Response (QR) Code Payments in Nigeria

The Central Bank of Nigeria (CBN) issued the Framework for Quick Response (QR) Code Payments in January 2021 to provide regulatory guidance for QR-based payment services within the broader context of Nigeria's cashless and digital payments strategy (CBN, 2021). The framework is designed to promote the adoption of secure, efficient, and interoperable electronic payment solutions, while also advancing financial inclusion, particularly among small and medium-sized enterprises (SMEs), and fostering innovation in the payment ecosystem.

The framework applies to all QR-based payment services in Nigeria and establishes clear standards governing QR code specifications, operational processes, participant roles, and risk management

requirements. It mandates compliance with the Europay Mastercard, and Visa (EMV®) QR Code Specification for Payment Systems, while allowing for alternative standards subject to regulatory approval, provided they meet defined criteria on security, interoperability, and cost efficiency. Supported payment options include account-based, wallet-based, card-based, and token-based transactions, with Nigeria primarily adopting a merchant-presented QR model.

Key stakeholders identified under the framework include merchants, customers, issuers (banks and mobile money operators), acquirers, and payment service providers (PSPs), each with clearly delineated responsibilities. The framework further emphasises interoperability as a central principle, with the Nigeria Inter-Bank Settlement System (NIBSS) playing a critical role in switching services and certification of QR schemes to ensure seamless integration across platforms (CBN, 2021).

In addition, the framework incorporates robust provisions for risk management and consumer protection, including fraud monitoring, secure authentication, and dispute resolution mechanisms, alongside strict compliance requirements. The introduction of the Nigerian QR (NQR) Code as a unified national solution reinforces interoperability and supports fast, secure, and low-cost payments.

Overall, the framework provides a comprehensive regulatory foundation for QR-based payments in Nigeria, supporting the CBN's cashless policy objectives and facilitating the transition towards a modern, inclusive, and digitally-driven payments ecosystem.

3.5 Data Security and Cybersecurity Concerns in Nigeria

The rapid advancement in Fintech operations is accompanied by considerable threats to cybersecurity and data privacy. Fintech companies often manage large volumes of sensitive customer data to deliver efficient and affordable financial services. This information, if compromised, could be misused, posing significant risks to consumers. It is imperative for Fintech companies to prioritise data protection and cybersecurity by adhering to relevant regulations around secure collection, storage, and use of customer data. By ensuring robust security measures, Fintech companies can foster trust and confidence within the financial landscape.

3.5.1 Fintech and Data Protection

Data protection and cybersecurity in Nigeria's fintech ecosystem are governed by a multi-regulatory framework involving several authorities, each operating under distinct mandates. These regulators collectively provide oversight through a range of laws, guidelines, and supervisory mechanisms tailored to ensure the

security, integrity, and resilience of digital financial services. The following outlines the key regulatory institutions and their respective roles within this framework:

i. Nigerian Data Protection Commission (NDPC): The enactment of the Nigerian Data Protection Act (NDPA) 2023 created the Nigerian Data Protection Commission (NDPC) as the principal authority responsible for regulating data protection and privacy in Nigeria. The NDPA 2023 provides a comprehensive legal framework for the processing of personal data and applies to data controllers and data processors within and outside Nigeria where the personal data of Nigerian residents are involved. The Commission is empowered to monitor compliance with data protection requirements, investigate breaches, enforce sanctions, promote data privacy awareness, and safeguard the rights of data subjects. For fintech firms, the Act imposes obligations relating to lawful data processing, data security, transparency, accountability, consent management, cross-border data transfers, breach notification, and the protection of customer information.

   Prior to the enactment of the NDPA 2023, National Information Technology Development Agency (NITDA) issued the Nigerian Data Protection Regulation (NDPR) 2019,

which constituted Nigeria's principal data protection framework. The NDPR established guidelines for the collection, processing, storage, and transfer of personal data of Nigerian citizens and residents. Although the NDPR laid the foundation for data protection regulation in Nigeria, its provisions are now complemented and strengthened by the broader statutory framework established under the NDPA 2023. The core aspects of the NDPR include requirements relating to consent, data security, privacy notices, accountability, and the protection of data subjects' rights.

Central Bank of Nigeria (CBN): The Consumer Protection Framework issued by the CBN to safeguard consumer assets and privacy requires financial institutions to securely always store customer information (financial and personal). The framework also mandates institutions to obtain written consent before sharing customer data with third-party entities, including subsidiaries or affiliates.

ii. Nigerian Communications Commission (NCC): The Consumer Code of Practice Regulations issued by the NCC mandates licensees (telecom companies) to develop and implement a data protection policy. Regulated institutions are required to ensure proper collection, use, and

protection of customer information. The code mandates that data protection policies are made readily accessible and understandable to consumers.

3.5.2 Cybercrime Act, 2015

The Cybercrimes (Prohibition, Prevention, etc.) Act, 2015, as amended in 2024, constitutes Nigeria's principal legal framework for the regulation of cybercrime and cybersecurity. The Cybercrimes (Prohibition, Prevention, etc.) Act was enacted by the National Assembly of Nigeria and assented to (signed into law) by the President of the Federal Republic of Nigeria. The Act establishes a comprehensive legal, institutional, and enforcement architecture for the prevention, detection, investigation, and prosecution of cyber offences. It also provides for the protection of computer systems, networks, data, and privacy, as well as the safeguarding of Critical National Information Infrastructure (CNII). The Act is designed to achieve several key objectives, including combating cybercrime, securing national digital infrastructure, protecting electronic communications, and aligning Nigeria's regulatory framework with international cybersecurity standards. Structurally, it covers core areas such as the protection of CNII, definition of offences and penalties, responsibilities of financial institutions and service providers, enforcement mechanisms, and provisions for jurisdiction and international cooperation.

The legislation criminalises a broad spectrum of cyber-related offences. These include unauthorised access to computer systems, data interference, unlawful interception of communications, and system disruptions. It further addresses financial crimes such as computer-related fraud, identity theft, phishing, and electronic payment fraud, alongside content-related offences including cyberstalking and harmful online material. Additional provisions extend to cyber-terrorism, cybersquatting, and the misuse of electronic tools for illicit purposes, with significant penalties that may include imprisonment, fines, asset forfeiture, and compensation to victims. The Act imposes specific obligations on institutions within the financial and telecommunications sectors. Financial institutions are required to monitor and report suspicious cyber activities and maintain transaction records, while service providers are mandated to retain data and support law enforcement investigations when required. To strengthen enforcement, the Act establishes a Cybercrime Advisory Council to coordinate national policy and grants law enforcement agencies powers of search, seizure, arrest, and prosecution.

Furthermore, the Act adopts an expansive jurisdictional scope, allowing for the prosecution of offences committed both within and outside Nigeria where there is a nexus to the country. It also facilitates international cooperation through mechanisms for extradition and mutual legal assistance. The 2024 Amendment Act

introduced critical enhancements, including clarification of existing provisions, the establishment of sectoral Computer Emergency Response Teams (CERTs), the introduction of cybersecurity levy mechanisms, and improvements in enforcement and reporting structures.

Generally, the Cybercrimes Act represents a cornerstone of Nigeria's digital regulatory architecture. It provides a robust and modern framework for addressing cyber threats, strengthening cybersecurity resilience, enhancing investor confidence, and supporting the growth of the digital economy, while ensuring alignment with global best practices.

3.6 Key Milestones and Technological Advancements

Internet coverage, technological advancements and the ever-increasing population of smartphone users aided the growth of Fintech. According to Price Waterhouse Coopers (2017) global FinTech/digital banking survey report, over 62.0 per cent of customers worldwide were projected to access financial services through mobile applications by 2022. Fintech firms such as Paga in April 2019 reported over 12 million customers as of 2019, while Flutterwave disclosed that it had processed about 100 million transactions since it was established in 2016 (Agency Report, 2019; Okeke, n.d). According to Statista, by Q32022, approximately 45.0 per cent of the Nigerian population aged 15 years and older

reported having an account with a financial institution, while 8.7 per cent used mobile money accounts. In 2023, approximately 17.0 per cent of the population aged between 16 and 64 were using mobile payment services.

Over 90.0 per cent of financial services that would normally require physical presence can now be executed on smart devices. Fintech firms now issue Bank Verification Numbers (BVN) and perform other functions which were hitherto exclusive to banks.

4.0 IMPACT OF FINTECH IN NIGERIA

Fintech is revolutionising financial products and services, deepening the existing payment and financial system architecture to reach financially unserved areas and further stimulate inclusive growth in the Nigerian economy. Recognising the growing importance of financial technology within Nigeria's economy, the National Financial Inclusion Strategy underscores the critical role of innovative delivery models in advancing financial inclusion objectives (CBN, 2022).

Nigeria has seen significant impact from Fintechs in 3 major areas:

i. Banking: Advancements in Fintech have impacted the banking sector. Human interaction and dealings with physical cash have been substantially reduced (see, Table 2). The practice of travelling with bank drafts to facilitate business procurement has become largely obsolete, reflecting a level of technological obsolescence comparable to legacy communication systems such as landline telephony and telex.

ii. An individual can access banking and financial services without physically visiting a bank or using an ATM. This can be achieved using mobile banking applications such as U-Mobile, FirstMonie, Breeze Nigeria, or by utilising USSD codes. These technological advancements have enabled unbanked individuals to conveniently access financial services using these media. Furthermore, the utilisation of Fintech services like mobile banking apps facilitates the adoption of the "cashless policy".

iii. Payments: The Nigerian payments landscape has undergone significant changes in the past decade. The number of mobile money transactions surged, from 15.9 million in 2013 to 217.8 million in 2019. The increase is attributed to the widespread adoption of card payments and the rise of Fintechs. Individuals can now easily make payments to online stores and business ventures.

iv. Financial Management: Fintech services enable individuals to effectively track spending using digital solutions, replacing the traditional methods of pen and paper or spreadsheets. Not only is it now easier and faster to track spending, but it is also safer. Fintechs, such as Piggybank, Invoice Nig. and Kliqr, offer a wide range of services, including saving, invoicing, and expense management.

Nigeria's large size and robust financial and tech ecosystem provide ample opportunities for it to emerge as a leading Fintech hub in West Africa. Fintech revenue improved significantly as it reached US$543.3 million in 2022 from US$153.1 million in 2017. According to a report by Statista Market Forecast (2023), Nigeria's Fintech revenue is projected at US$6.56 billion in 2027. The largest market will be digital investment with an Asset under Management (AUM) of US$58.37 million in 2023. The report forecasts that the digital assets market will grow by 54.0 per cent in 2024. In the digital payments market, the number of users is expected to amount to 146.10 million users by 2027.

Fintechs are also playing a crucial role in Nigeria's startup ecosystem, accounting for the largest share of startup funding and attracting

significant investor interest (Adesulu, 2025; Lunch Base Africa, 2025). The sector is central to innovation, providing digital financial solutions such as payments, lending, and savings products that address the needs of individuals and businesses (McKinsey, 2020). Consequently, Fintech has emerged as a key driver of growth and investment within Nigeria's broader startup ecosystem (Elite Consulting Limited, 2025; StartupBlink, 2026).

4.1 Analysis of Prominent Fintech Services in Nigeria

Fintechs impact the Nigerian economy through provision of products and services that enhance service delivery, income and employment. Specifically, the prominent Fintech services in Nigeria are payments, lending, and remittances.

4.1.1 Payments

Payments services are an integral aspect of the Nigerian financial system, playing a significant role in the Nigerian economy. These services are the pipeline, through which financial resources are channelled from one segment of the economy to the other. The Nigerian financial system and the broader economy have experienced significant gains from the advancement of financial technology, driven largely by the implementation of key initiatives under the Payments System Vision 2020, the Nigeria Start-up Act (2022), and other complementary policy reforms.

The payment services provided by the Fintech start-ups have positively enhanced financial services, promoted financial inclusion, reduced over-reliance on traditional financial service providers, and enabled seamless

payment processes. In 2018, three Fintech companies in Nigeria (Paystack, Paga, and Branch) were included in CB insights' FinTech 250 list of the world's most promising high growth Fintech start-ups (CB Insights, 2018).

FinTech firms provide wide range of payment services including facilitating transaction for consumers and businesses, providing seamless digital payments via web and mobile platforms. They also support the electronic receipt and transfer of funds by individuals and institutions, expand access to financial services for local users, and contribute to employment generation within the economy (CFA Institute, 2023; Salami, 2025).

4.1.2 Lending

Several Fintech firms provide loans to individuals and institutions in Nigeria, thereby performing financial intermediation function that channels funds from surplus units to deficit units in the economy. Examples of Fintech firms approved by regulatory authorities to render lending services included Carbon, Fairmoney, Grolatech, Creditwave and Renmoney, among others. The lending services provided by these firms enable fund reallocation, facilitate credit disbursement, and allow start-ups to access credits.

4.1.3 Remittances

There are several Fintech firms providing online cross-border money transfer, hence aiding remittance[1]s in Nigeria. Some of this remittance service providers includes global digital players (Wise, Remitly, WorldRemit) and African/Nigerian platforms (Chipper Cash, Flutterwave, Afriex, LemFi) that leverage technology to deliver faster, cheaper, and more accessible cross-border money transfer services compared to traditional operators. These Fintech service providers facilitate instant cross-border transfer, making remittances easy and seamless (Prasad, 2019).

4.1.4 Other Services

In addition to payment, lending and remittances, Fintech firms perform other functions such as Savings, Investments & Crowdfunding, Enterprise Services & Infrastructure, Cryptocurrency and Insurance-Tech.

[1] Fintech lending activities in Nigeria are primarily governed by the Central Bank of Nigeria's licensing frameworks, established under the Banks and Other Financial Institutions Act (BOFIA) 2020, and, where applicable, the Investment and Securities Act (2007) and related SEC regulations.

Table 1: Prominent Fintech Services in Nigeria

Service Provided	Size (%)	Functions
Payments, Mobile Money & Digital Banking	38.0	• Digital Payments • Mobile Payments • Payments processing & switching • Digital banks & accounts • Global transfers & remittances • Terminal & infrastructure providers
Lending	23.0	• Retail lending • SME lending • Credit data analytics & loan assessments
Savings, Investments & Crowdfunding	15.0	• Digital wealth & asset management • Automatic savings platforms • Alternate investments • International investment platforms • Crowdfunding
Enterprise Services & Infrastructure	13.0	• Financial services solutions • Credit infrastructure • APIs and connectors
Cryptocurrency	8.0	• Cryptocurrency exchanges & wallets
Insurance Tech	3.0	• Digital insurers • Insurance comparison services • Digital agents & distribution platforms • Insurance system providers

Source: National Fintech Strategy

4.2. The Role of Fintech on Financial Inclusion

The emergence of Fintech has come with some crucial elements that hold the potential to significantly enhance the prospects of achieving greater financial inclusion (Ranade, 2017). The ability of Fintech to facilitate

payment, lending, and remittance activities, has enable faster financial inclusion. Recognising the role of Fintech in driving financial inclusion, CBN in 2019 revised the National Financial Inclusion Strategy (NFIS), seeking to leverage innovation as an enabler of financial inclusion.

In recent times, the use of Fintech tools for payment been increased. Between 2009 to 2011, the average volume of transactions using the ATM stood at 172.29 million with the value at ₦836.7 billion. Similarly, the average volume and value using POS was 1.36 million and ₦18.3 billion, respectively, while the averages for Mobile Pay were 2.2 million and ₦9.0 billion. The growth in ATM transaction activity occurred in two distinct phases. Between 2018 and 2019, transaction volume and value increased significantly by 397.8 and 676.4 per cent, respectively, largely reflecting early gains from Fintech-driven digitalisation of payment services.

This trend intensified in the period from 2020 to 2023, when transaction volumes and values rose further, driven by the combined effects of the COVID-19 pandemic, policy interventions to deepen financial inclusion, and the naira redesign policy, all of which accelerated the shift towards electronic payment channels.

Table 2: Summary Statistics of Some Fintech (Payment System)

Year	ATM		POS		Mobile Pay	
	Volume	Value (₦' Billion)	Volume	Value (₦' Billion)	Volume	Value (₦' Billion)
2009	109,161,646.00	548.60	918,256.00	11.00	1,809,251.00	1.30
2010	60,133,610.50	399.70	1,072,426.00	12.70	1,156,533.00	6.70
2011	347,569,999.00	1,561.70	2,100,673.00	31.00	3,649,374.00	19.00
Average	172,288,418.50	836.70	1,363,785.00	18.30	2,205,052.70	9.00
2012	375,487,756.00	1,984.70	2,555,045.00	48.00	2,297,688.00	31.50
2013	295,292,940.00	2,828.90	9,402,255.00	161.00	15,812,435.00	142.80
2014	400,102,507.00	3,679.90	20,817,423.00	312.10	29,156,406.00	346.50
Average	356,961,067.70	2,831.20	10,924,907.70	173.70	15,755,509.70	173.60
2015	433,587,623.00	3,970.30	33,720,933.00	448.50	43,933,362.00	442.40
2016	590,238,934.00	4,988.10	63,715,203.00	759.00	47,053,252.00	756.90
2017	800,549,099.00	6,437.60	146,267,156.00	1,409.80	47,804,561.00	1,102.00
Average	608,125,218.70	5,132.00	81,234,430.70	872.40	46,263,725.00	767.10
2018	875,519,307.00	6,480.10	295,890,167.00	2,383.10	94,653,446.00	1,974.30
2019	839,819,922.00	6,512.60	438,614,182.00	3,204.80	377,265,208.00	5,081.00
2020	1,811,356,206.00	17,289.97	577,847,610.00	4,125.71	388,953,487.00	31,158.23
Average	1,175,565,145.00	10,094.22	437,450,653.00	3,237.87	286,957,380.33	12,737.84
2021	1,599,187,337.00	21,230.23	2,743,555,841.00	24,455.42	831,540,635.00	53,208.27
2022	1,506,991,903.00	32,648.02	3,885,782,065.00	41,035.80	1,861,362,984.00	4,494.45
2023	1,012,277,981.00	28,212.59	9,847,258,500.00	110,347.10	5,259,477,576.00	219,800.08
Average	1,372,819,073.67	27,363.61	5,492,198,802.00	58,612.77	2,650,793,731.67	92,500.93

Source: Central Bank of Nigeria

The Nigerian financial inclusion has recorded significant improvement since the launch of the Fintech-anchored National Financial Inclusion Strategy (NFIS) in 2012. The percentage of adults with access to bank accounts increased from 33.0 per cent in 2012 to 45.0 per cent in 2020 (NFIS, 2022). In 2022, the NFIS 3.0 was launched with the aim to achieve 95.0 per cent financial inclusion of Nigerian adults by 2024 and enhance consumer protection by leveraging Fintech advancements. Fintechs are expected to drive the expansion of digital financial services and platforms, enable new business models to spur uptake, encourage digital adoption, and enhance affordability of financial services.

4.3 Case Studies of Successful Fintech Companies in Nigeria

In Nigeria, Fintech companies have recorded strong performances over the years, driven by sustained growth in digital payments, increased investment inflows, and expansion of innovative financial services (Banwo & Ighodalo, 2022; Adeyemi, 2022). Fintech lending activity is rapidly increasing, with companies like Carbon and Renmoney leveraging alternative credit-scoring algorithms to offer instant, uncollateralised, short-term loans to individuals. Additionally, Migo is providing uncollateralised working capital loans to small and medium-sized enterprises (SMEs) with minimal paperwork requirements (Abiola, 2019).

Paystack (an online payment provider) created a simple plug-and-play solution that enables merchants to start receiving payments shortly after signing up. They equally offer supplementary services related to invoicing, integration with accounting systems, and transaction tracking, all aimed at assisting SMEs in maintaining their operations efficiently (Mckinsey, 2023). Furthermore, CowryWise and PiggyVest cater to Nigerian youths by offering user-friendly applications that provide more attractive interest rates on savings. These rates, typically range from 10.0 - 13.0 per cent, compared with the 4.0 - 6.0 per cent offered by conventional banks, while also incorporating financial management tools to support effective savings behaviour (Mckinsey, 2023; Agusto & Co., 2024; and AELEX, 2022).

Another Fintech firm in Nigeria, Bankly, has a savings application targeted at the informal mass market. They have been modernising the traditional savings system, transitioning users from saving with a trusted individual in their local community to saving through the Bankly app (Mckinsey, 2023).

This shift provides enhanced security through alerts and notifications, along with the convenience of accessing their savings through an extensive network of agents. Additionally, the market has witnessed a surge in the number of asset management Fintech companies, such as RiseVest, Chaka, and Bamboo. These firms enable users to invest in international stock markets using their local currency accounts through their respective apps (Mckinsey, 2023).

Flutterwave successfully built a robust payments infrastructure that serves not only Nigerians, but other users globally. The infrastructure relies on technology to provide seamless and secure payments experience for their customers. Since its establishment, Flutterwave has emerged as one of the most rapidly expanding payment companies globally. As at 2021, it has successfully processed nearly US$2.00 billion in payments and over 25 million transactions across 33 African countries where it currently operates (IBS Intelligence, 2021).

5.0 EMPIRICAL ANALYSIS

To gauge stakeholders' perception of the prospects and challenges of Fintech development in Nigeria, a cross-sectional survey was adopted. Data were collected using a structured questionnaire administered through google forms to stakeholders within regulatory institutions, Fintech operators, and end-users of financial services. The sampling approach was non-probabilistic, combining purposive and convenience sampling techniques. Respondents were required to identify their category as:

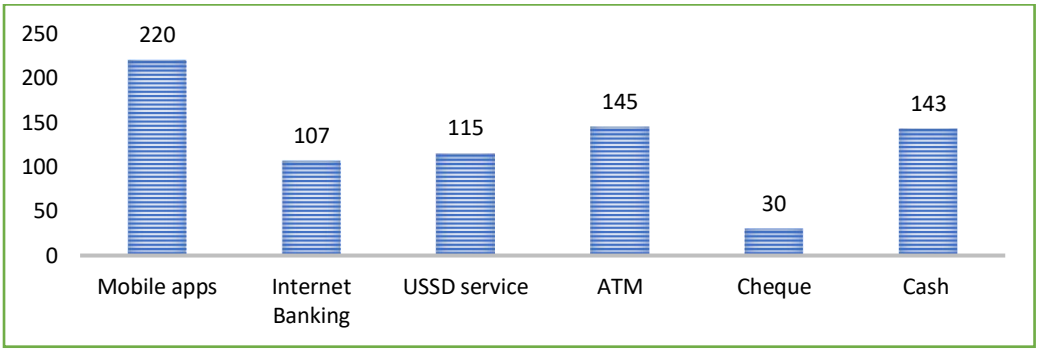
i. Regulators – individuals working within financial regulatory or supervisory institutions;

ii. Operators – employees or founders of Fintech firms and related financial service providers; or

iii. Users – individuals who utilise Fintech products or digital financial services.

A total of 379 responses were received, comprising 243 males and 136 females. Based on self-classification, 239 respondents identified as users, 127 as regulators, and 13 as operators.

Figure 3: Most Frequently Used Transaction Channels

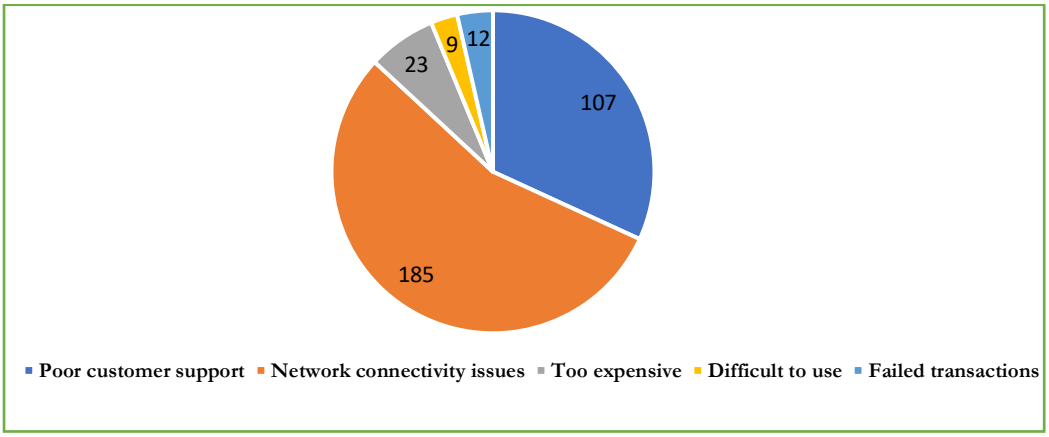


Source: Authors ' computations from Survey Response

The survey showed that, mobile apps were the most frequently used channels followed by ATM and cash (Figure 3).

Users also showed clear preference for Fintech-enabled services relative to traditional banking services. The survey result indicated that, 86.0 per cent of the respondents prefer the use of digital financial services,1.0 per cent traditional bank services, while 13.0 per cent remained neutral. The preference is largely driven by convenience, time savings, cost efficiency, and the ease of access to digital applications. However, users identified network connectivity challenges, poor customer support and failed transactions as major drawbacks to seamless operations of Fintech (Figure 4).

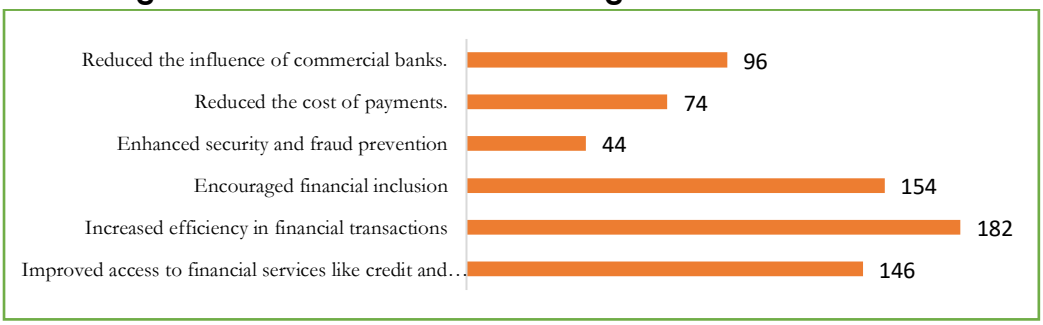
Figure 4: Drawbacks to Adoption of Digital Finance



Source: Authors ' computations from Survey Response

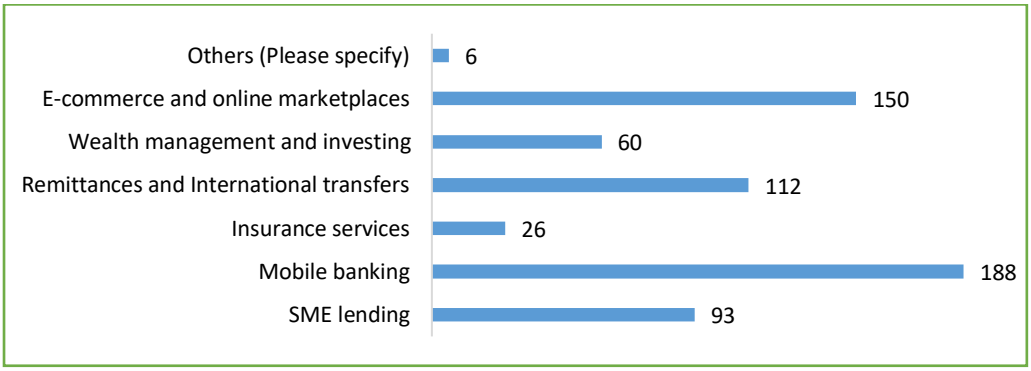
Survey results also indicated that the impact of Fintech development in Nigeria were most discernible in improved access to credit and financial services, higher efficiency in financial transactions, and financial inclusion (Figure 5). Similarly, activities with the most potential for Fintech growth according to the survey were mobile banking, e-commerce and online marketing, and remittances (Figure 6).

Figure 5: Gains of Fintech on the Nigerian Financial Sector



Source: Authors ' computations from Survey Response

Figure 6: Activities with Most Potential for Fintech Growth in Nigeria



Source: Authors ' computations from Survey Response

Table 3: Prospects for Fintech Growth (Users)

Potential Impact	Strong Impact (%)	Moderate Impact (%)	No Impact (%)	Negative Impact (%)
Open Banking	61.9	34.3	0.4	3.4
Artificial Intelligence	49.4	41.8	1.3	7.6
Machine Learning	49.0	43.0	1.7	5.5
Blockchain & Distributed Ledger Technology	44.8	46.4	1.3	7.6
Cloud Computing	43.9	47.7	1.3	7.1
Improved Digital Identity	57.7	35.1	1.3	5.9
Regulatory Sandbox	35.1	50.2	2.9	11.7

Source: Authors ' computations

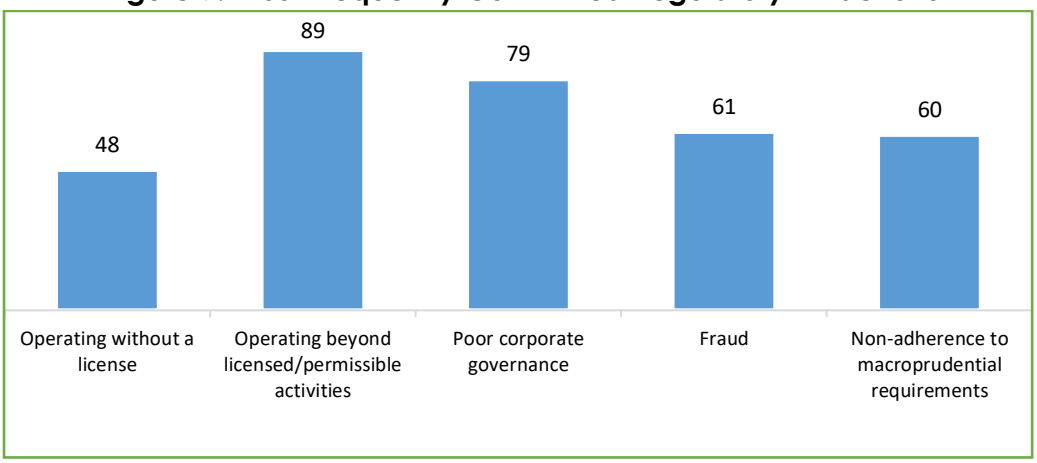
Most users are of the view that innovations such as open banking, blockchain and distributed ledger technology, and improved digital identity will enhance fintech development in the country (Table 3). Specifically, 61.9 per cent of respondents indicated that open banking would have a strong impact on fintech growth, while 57.7 per cent expressed similar views regarding improved digital identity. Furthermore, most respondents believed that innovations such as artificial intelligence, machine learning, cloud computing, and regulatory sandboxes would

exert either a strong or moderate impact on the future development of fintech in Nigeria. These findings suggest that improvements in the regulatory environment, technological innovation, and digital infrastructure are expected to drive fintech growth in the country.

Regulators Opinion

Fifty-four per cent of regulators believe that operators engage in activities outside their operating licence, while 55.0 per cent invite such erring operators to upgrade their licences. The most frequently committed regulatory infractions by operators are operating outside the permissible activities of the licence (89.0%), followed by poor governance (79.0%) (Figure 7).

Figure 7: Most Frequently Committed Regulatory Infractions



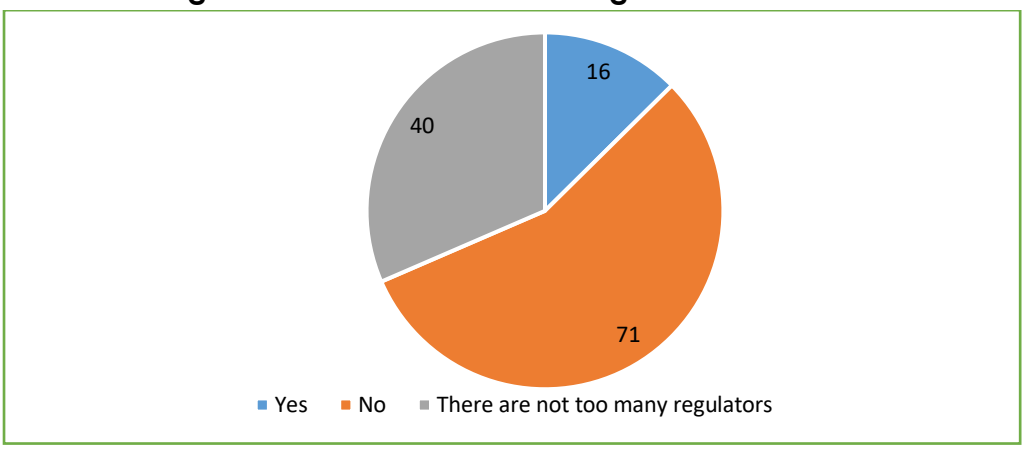
Source: Authors computations from Survey Response

The survey also showed regulatory infractions as a common phenomenon with 48.0 and 33.0 per cent of the regulators confirming that infractions occur sometimes and frequently, respectively (Figure 7). Regulators rely

on fines, warning letters and revocation of licences as a way of deterring infractions.

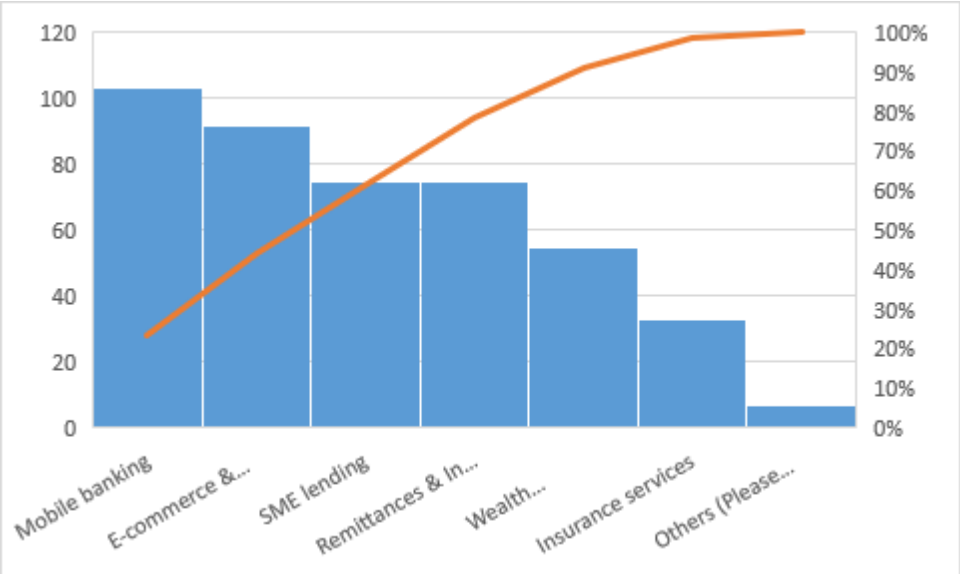
The general perception among respondents from regulatory agencies is that the presence of multiple regulatory authorities does not significantly affect the development of the fintech industry (Figure 8).

Figure 8: Effect of Number of Regulators on Fintech



Source: Authors computations from Survey Response

Figure 9: Activities with Most Potential for Fintech Growth in Nigeria



Source: Authors computations from Survey Response

Regulators indicated that mobile banking and e-commerce hold the most potential for growth in the Fintech ecosystem and believed open banking, artificial intelligence, and machine learning portend greater impact on Fintech development in Nigeria.

Table 4: Prospects for Fintech Growth (Regulators)

Potential Impact	Strong Impact (%)	Moderate Impact (%)
Open Banking	57.9	39.4
Artificial Intelligence	59.8	39.4
Machine Learning	51.2	44.9
Blockchain & Distributed Ledger Technology	56.7	35.4
Cloud Computing	51.2	38.6
Improved Digital Identity	63	32.3
Regulatory Sandbox	55.1	39.4

Source: Survey results

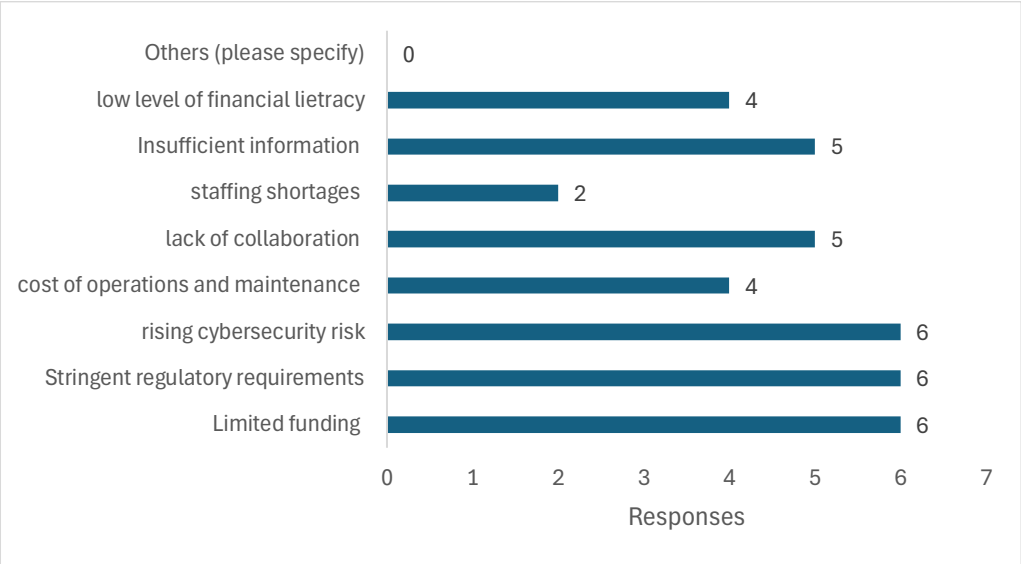
Finally, from a regulatory standpoint, a strong regulatory oversight coupled with conducive business environment that encourages Fintech development is imperative for the growth of the industry.

Operators Perspectives

Operators in the payment and mobile money segment are more numerous, accounting for 34.4 per cent (11 out of 32). In contrast, the remaining 65.6 per cent (21 out of 32) are spread across the other seven Fintech categories, with an average of three operators per category. In terms of licensing, there were more Fintech companies operating without licence than those with operating licence. The CBN remains the highest issuer of licences for Fintech operation, followed by SEC.

Survey evidence indicated that the most prevalent challenges encountered by the Fintech operators are limited funding, stringent regulatory requirements, and rising cyber security risk with 6 responses a piece, reflecting structural, compliance, and operational risks within the sector (Figure 10).

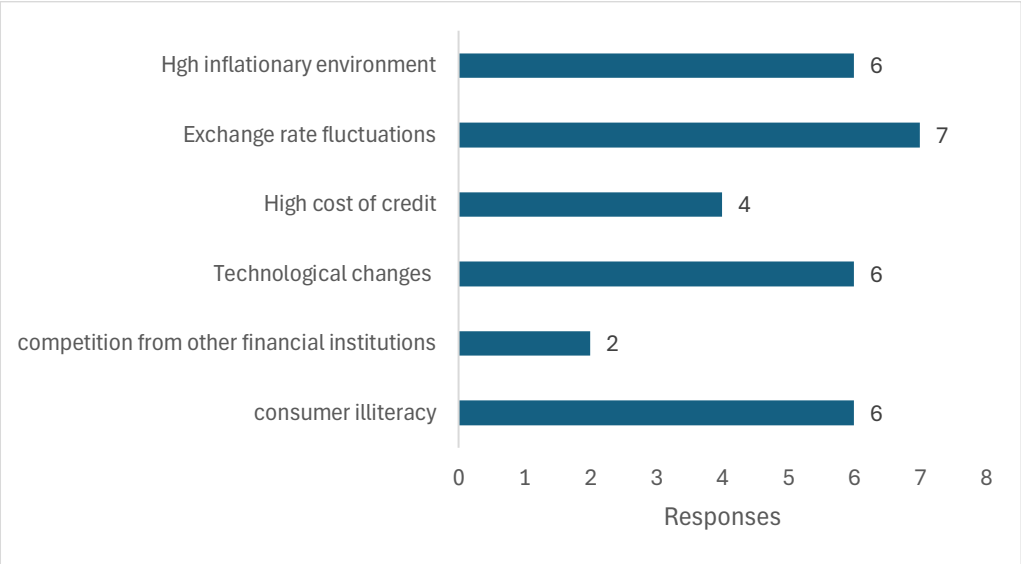
Figure 10: Challenges to Fintech Operations in Nigeria



Source: Authors Computations from Survey Response

With respect to infrastructure, card schemes and the Nigeria Inter-Bank Settlement System (NIBSS) switch provide the most reliable solutions for operators, compared with traditional Banks, NCC/Telcos, switches & processors and Central Securities Clearing System (CSCS). In terms of operational risks to the Fintech ecosystem in Nigeria, the most prevalent is exchange rate volatility, while high inflation rate, technological change, and consumer illiteracy remained other impediments to the growth of the Fintech ecosystem (Figure 11).

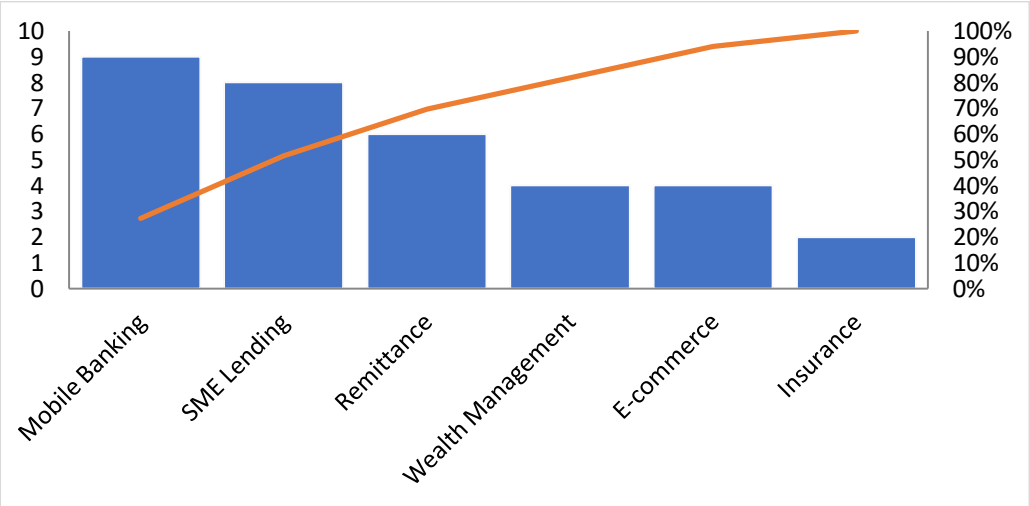
Figure 11: Operational Risks to Fintech in Nigeria



Source: Authors Computations from Survey Response

Operators employed digital identity, cloud computing and open banking as major innovations. Regarding prospects for further Fintech growth in Nigeria, the survey indicated that mobile banking, SME lending and remittances will be the major drivers.

Figure 12: Activities with most Potential for Fintech Growth



Source: Authors Computations from Survey Response

Overall, the Fintech ecosystem in Nigeria has prospects for sustained growth amid challenges. The major areas for further growth include mobile banking, SME lending, e-commerce, remittances and international transfers. These potentials are achievable with strong commitment to governance, technological advancement, improvements in infrastructure, among others. On the other hand, challenges such as funding, cybersecurity threats, cost of operations, and conflicting regulatory requirements could potentially stifle the growth of the Fintech space.

6.0 ISSUES, CHALLENGES AND PROSPECTS OF FINTECH

6.1 Issues

The CBN and SEC are the primary regulators of Fintech companies in Nigeria. Other agencies whose regulations can influence the operations of Fintechs include Nigerian Deposit Insurance Corporation (NDIC), Corporate Affairs Commission (CAC), Nigerian Communications Commission (NCC), NITDA, National Insurance Commission (NAICOM), National Office for Technology Acquisition and Promotion (NOTAP), and Federal Competition & Consumer Protection Commission (FCCPC).

The Fintech industry in Nigeria has had an impressive growth especially in the last decade, following the introduction of the cashless policy in 2012. There had been several innovations around financial transactions leveraging on technological advancement of the sector. The growth of the industry also came with associated risks and challenges including data theft, fraud, cybercrimes, and consumer protection challenges. However, efforts by regulatory agencies have continued to moderate these risks and challenges. An industry report by the Financial Institutions Training Centre (FITC) in 2023, shows that frauds (value of new incidents) and forgeries in Nigerian banks declined by 85.2 per cent to ₦472.3 million in the first quarter of 2023, from ₦3.18 billion in the preceding quarter. Losses associated with fraud cases (unrecovered funds and losses from earlier fraud cases recognised in the period) also reduced by 79.4 per cent to ₦2.6 billion. The decline reflects the efforts of regulatory agencies to prevent the identified risks from crystalising. The CBN and other regulatory agencies had introduced various regulations to protect customer information and data while ensuring the safety of assets.

The Cybercrimes Act (as amended in 2024) is the Nigeria's primary cybersecurity law which defines and criminalises digital offences, establishes enforcement mechanisms, and strengthens protections for critical information infrastructure, while enhancing penalties and introducing measures to improve national cyber resilience and incident response. With respect to the Fintech industry, the CBN Risk-Based Cyber-Security Framework and Guidelines for Deposit Money Banks and Payment Service is specific to the financial system, supported by other regulations including the CBN's Consumer Protection Framework and Regulatory Framework for the use of USSD for financial services. Other regulations such as the NDPR 2019, and the FCCPA 2018 were issued to ensure the safety of consumer assets and privacy in the financial system and the digital space.

6.2 Challenges

The Fintech industry has also experienced drawbacks, despite impressive growth over the last decade. Some of these challenges are highlighted below.

i. The Nigerian payments system is characterised by a multi-regulatory framework involving agencies such as the CBN, SEC, NCC and others, which has resulted in regulatory complexity and overlapping mandates. Consistent with the role of the Financial Services Regulation Coordinating Committee (FSRCC) in promoting coordination and reducing arbitrage across regulators, studies show that this fragmented landscape contributes to unclear compliance requirements, licensing bottlenecks, and delays in

service delivery, thereby constraining efficiency and growth in the payment's ecosystem (FSRCC, n.d.; Manifield Solicitors, 2025; Afriwise, 2026).

ii. The Central Bank of Nigeria (CBN) Guidelines for Mobile Money Services in Nigeria (2015) stipulate that applicants for mobile money licenses must demonstrate a minimum shareholders' fund of ₦2.00 billion prior to approval. While this requirement ensures financial soundness and consumer protection, it inadvertently restricts market entry for emerging FinTech firms, thereby limiting innovation and competition. To mitigate this constraint, the CBN could adopt a tiered licensing framework that allows smaller operators to commence under reduced capital thresholds, implement a regulatory sandbox for controlled experimentation, and introduce phased capitalisation tied to operational growth. Such reforms would uphold prudential standards while promoting inclusivity, innovation, and sustainable expansion of Nigeria's digital financial ecosystem.

iii. Access to financial infrastructure: Poor infrastructure remains a major impediment to the growth of Fintech in Nigeria. The country faces persistent deficiencies in critical social infrastructure such as reliable electricity supply, broadband connectivity and industrial manufacturing hubs. These shortcomings increase operational costs and limit the scalability of digital financial services, thereby constraining innovation and inclusion in the financial technology ecosystem.

Nigeria also suffers from inadequate availability of intermediate goods essential to produce technology-based products. The domestic manufacturing sector lacks the capacity to supply components and materials required for FinTech hardware and software development, forcing firms to rely heavily on costly imports. This dependence raises production expenses and creates a significant barrier to entry for emerging technology enterprises.

iv. Inadequate technical knowledge: The disruption of the functionality of Fintech business by law enforcement agencies, while Investigation into fraud or breach of costumer information often result in unnecessary disruption of FinTech operations, primarily due to inadequate technical knowledge among security operatives. Such interventions could be conducted more efficiently without impeding business continuity if specialised training and collaboration frameworks were established between regulatory bodies and law enforcement agencies.

6.3 Prospects of Fintech

Innovations in the Fintech space can engender further improvements within the financial system. By creating innovative products, Fintech start-ups have enabled convenient and affordable financial services for millions of Nigerians, especially the hitherto unbanked. This has created a multiplier effect across the economy, inducing growth in the digital space, human capital, employment, and new business models.

Notwithstanding the apparent impact, Fintechs still have the potential to grow exponentially based on the size of available market and

improvements in technology. This could be reinforced by regulatory and policy developments that enhance macroeconomic growth and improve business conditions.

6.3.1 Opportunities for the Growth of Fintech in Nigeria

Nigeria's fintech sector has witnessed significant growth in recent years, driven by increasing digital adoption, supportive regulatory reforms, and evolving consumer preferences. Despite existing structural and regulatory challenges, the country presents several inherent advantages that position the fintech ecosystem for sustained expansion. These opportunities, rooted in demographic dynamics, technological advancement, and institutional capacity, provide a strong foundation for innovation and scalability in the industry.

a) Availability of a ready market: Nigeria's high and youthful population procreates a ready market for Fintech's to thrive.

b) Internet penetration: Nigeria's internet penetration is growing fast and feeds into the needs of the Fintech industry. As the country continue to expand its internet penetration, more individuals will become connected, and this creates more room for expansion for the Fintech.

c) A robust ecosystem to support innovation: Nigeria has an already thriving financial services ecosystem which provides an array of services to the populace. Thus, start-ups venturing into the market can leverage on the networks and experiences already in place.

d) Existing talent pool: Fintech operators can benefit from the existing talent pool in the banking industry which can transition seamlessly into the Fintech ecosystem as there is similarity in operation.

In terms of market share, Fintechs have an opportunity to develop and deliver innovative financial services to the underserved and unbanked. Despite the substantial progress made, financial inclusion remained a challenge in Nigeria with 35.9 per cent of the about 106 million adult populations without a functional bank account (EFInA, 2021*)*. Moreover, beyond simple access, the usage and quality of financial services also present a prospect for growth. Globally, pension funds serve as significant vehicles for investments into innovative and market, creating ventures with pension funds, dominating the pool of institutional limited partner fund sources for venture capital firms in Europe and the US (Atanasov et al., 2019). Nigeria's pension penetration rate stood at 7.9 per cent in 2022 compared with those of South Africa (45.8%), Kenya (12.9%), Namibia (10.3%), Uganda (12.4%), and Ghana (6.3 %). The opportunity for Fintech to improve pension administration and contribution especially for underserved, informal and semi-employed professionals would result in a bidirectional positive outcome (Modestus, 2023).

Positive regulation and policies have played an important role in Fintech development in Nigeria thus far and will be critical to the prospects of Fintech in Nigeria. Recent policy measures such as the passing of the Nigerian Startup Act, open banking regulations, national blockchain strategy, and operationalisation of Fintech regulatory sandboxes by the CBN and the SEC would support the creation and development of an enabling environment for technology-enabled startups in Nigeria.

The Startup Act for instance, establishes the setup of a portal to ease the procedure for obtaining licences for financial technology startups, access startup finance, exchange information, receive complaints and recommendations from stakeholders and the public, among others (Abiodun, 2023). The development of open banking system that allows financial institutions to share customer data with third-party providers, will make it easier for customers to access financial services. Financial services, such as loans and investment products, can be conducted without the need to create new digital identities or credit histories with each service provider. Furthermore, the SEC's establishment of rules on issuance, offering platforms and custody of digital assets to regulate issuance, transfer and exchange of digital and virtual assets could enhance the development of crypto and blockchain-based Fintech startups.

Similarly, regulatory initiatives, such as the eNaira, Pan-African Payment and Settlement System (PAPSS) and the introduction of a domestic card scheme (called Afrigo), create a conducive climate for the continued development of Fintech in Nigeria. The eNaira as a blockchain based central bank digital currency, is expected to promote financial inclusion and enhance the efficiency domestic and cross-border payments, including remittances, by reducing transaction costs and processing time. It is also designed to support a secure and resilient payment system for individuals and businesses (CBN, 2021; IMF, 2023).

Furthermore, The CBN has enabled Application Programming Interfaces (APIs) and related technological integrations to allow FinTech firms and other financial institutions to leverage the eNaira infrastructure for the

development of innovative financial products and services (CBN, 2024; VCASH, 2023). Afrigo allows banks and other financial institutions to offer a variety of card solutions including debit, credit, virtual, loyalty and tokenised cards. The Scheme is designed to foster innovation, reduce the demand for foreign exchange associated with transactions on foreign cards and promote data sovereignty within Nigeria's payments system (AfrigoPay Financial Services Limited, 2023; NIBSS, 2023).

The Pan-African Payment and Settlement System (PAPSS) is a financial market infrastructure that supports payment arrangements and settlement of transactions in local African currencies among participating entities, with the objective of facilitating and expanding intra- African trade (PAPSS, 2023). The infrastructure creates an opportunity for the development of Fintech products for trade finance, freight insurance, logistics and e-commerce focused on regional trade with an inbuilt advantage of conquering a large market for Fintech startups.

The emergence of artificial intelligence (AI), Big data and machine learning presents Fintech firms access to information and cutting-edge analytical tools to create innovative products and access new markets. Future growth prospects of the Fintech market in Nigeria will be increasingly data driven as access to proprietary data will be useful to derive market and product insights. Such data is used by organisations to precisely design and target products to own the customer relationship.

In Nigeria, where challenges persist in obtaining reliable information on the credit worthiness of customers and fulfilling Know-Your-Customer (KYC) requirements, the use of artificial intelligence and other innovative

technologies to generate such data is likely to become a key driver of innovation and growth in the financial sector. A breakthrough in this area will enhance risk management which is a critical condition for the development of new financial products. This is particularly important for deepening insurance penetration and expanding credit to the private sector. These segments remain key potential growth areas for Nigeria's Fintech ecosystem. In addition, AI, big data analytics, and machine learning can facilitate and improve credit rating, fraud detection, customer service, and other financial services (Mckinsey,2020).

Ultimately, the notable advances in Fintech in Nigeria are on an upward trajectory. Possibilities are expanding with the application of innovative use of machine learning, AI, USSD, and blockchain, to provide cost effective solutions in e-commerce, lending, insurance, lifestyle, and wealth management, among others. High levels of investments through venture capital from global and local investors and a positive regulatory environment would continue to support the development of Fintech in Nigeria.

7.0 CONCLUSION AND RECOMMENDATIONS

Nigeria's Fintech industry has grown rapidly over the years, driven by large young populations, increasing use of mobile phones, the internet of things, and effort towards deepening financial inclusion. The growth of the Fintech industry has significant impact on the Nigeria economy, including job creation, income generation, lower cost of financial services, increased financial inclusion, and improved efficiency of the financial system. Despite these important contributions of the Fintech industry to the Nigerian financial landscape, challenges remain. These include, data theft, cybercrimes, barrier to entry, particularly for startups, inadequate access to financial infrastructure, and consumer distrust.

To address some of the challenges highlighted above, private and public sector collaboration is required to encourage innovation and create a more conducive environment for Fintech industry. The collaboration should include the enforcement of regulatory penalties, capacity development and the promotion of financial literacy among consumers of financial services. Specifically, there is need to:

i. review and harmonise existing regulations/strategies on Fintech operations to enhance the safety and efficiency of the financial system;

ii. sustain the operationalisation of the regulatory sandbox, to further enable Fintech startups test their products and services;

iii. upscale investment in innovation, training and retraining to develop the skills and competencies of the workforce in the Fintech industry; and

iv. promote financial literacy to deepen knowledge and understanding of the applicability and usage of Fintech products and services.

Nigeria's financial technology industry, though still in its early stages, has many opportunities for innovation growth that will impact the Nigerian economy in the coming years. Looking ahead, Fintech has the potential to:

i. increase adoption and usage of mobile phones and the Internet, and growing demand for financial services;

ii. play an important role in furthering Nigeria's efforts to promote financial inclusion to "digital financial inclusion" in Nigeria;

iii. help reduce income gaps and promote economic growth by providing affordable and convenient financial services to unbanked and under-banked population; and

iv. alter traditional financial services industry, with banks and other financial institutions adapting to the changing modern trend in technology.

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