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Fintech Disruptions and Financial Inclusion in Emerging Economies: Evidence from Nigeria

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Abstract

This research is a case study on how disruptions by fintech are included in the financial inclusion effect in Nigeria from 2015 to 2024. Using descriptive statistics, correlation analysis and ordinary least squares (OLS) regression, the study measures the effect of fintech adoption, accessibility, innovation and regulatory frameworks on financial inclusion with GDP per capita introduced as the control variable. The outcomes reveal that fintech adoption, accessibility and innovation have a high positive impact on financial inclusion whereas currently regulatory frameworks have an insignificant impact. Strong positive correlations among the components of fintech and GDP add to the interconnected nature of the fintech ecosystem in promoting access to financial services. These findings indicate that use of digital financial services tuning policies to enhance accessibility and innovative functioning are vital points for increased financial inclusion. The study adds to the literature by presenting current empirical evidence on fintech-led inclusion from an emerging economy context and deliver lessons for policy makers, financial institutions, and researchers on best practises for optimising fintech strategies to support inclusive economic growth.

Keywords: Fintech disruptions; Financial inclusion; Fintech adoption; Fintech accessibility; Fintech innovation; Fintech regulation; Nigeria; Economic growth

1. Introduction

Over the last two decades, the whole financial landscape of the world has experienced a significant transformation caused by the emergence of financial technology (fintech). The fusion of technology and finance has redefined the way individuals and businesses access, use and interact with financial services. From mobile payment and digital lending to blockchain-based platforms and robo-advisory services, there have been multiple fintech innovations that have disrupted the traditional banking models and reshaped the financial intermediation across the world. This evolution is built on the strengths of improvements in mobile connectivity, big data analytics, artificial intelligence, and cloud computing, all of which have led to the creation of more efficient, inclusive, and customer-centric financial systems (Arner et al., 2016; Ozili, 2023; Olulu-Briggs, 2021). The recent hype of fintech investments from a little US$10 billion in 2012 to just over US$200 billion in 2022 (KPMG, 2023) by investors and consumers shows the increasing confidence of their investment in the digitalisation of finance. The impact of the pandemic on the financial sector: The pandemic, with its lockdowns and social distancing regulations, have forced households and businesses to resort to contactless payments, online banking, and digital credit platforms and fintech has become the mainstay of the contemporary financial system.

In Africa, fintech has become one of the most transformative forces around fin inclusion and economy empowerment. The combination of continent's youthful population, growing mobile phone penetration and non-existent traditional banking infrastructure has formed an ideal fertile ground for digital innovations. Mobile money platforms like M-Pesa

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in Kenya, MTN Mobile Money in Ghana, and Paga in Nigeria have disrupted the way people save, send and receive money, particularly in the underserved rural and informal sectors (Suri and Jack, 2016; Gikunda, 2021). These platforms have served as an example of how technological innovation can help democratize access to finance, cut down transactional costs, and bridge financial gaps that have been in place for years. Africa's fintech landscape is now attracting billions of dollars in venture funding every year with Nigeria, Kenya, Egypt and South Africa contributing most of the fintech activity on the continent. As a result, fintech has become not only a financial phenomenon but a developmental tool for the advancement of inclusion, entrepreneurship and poverty reduction.

Financial inclusion is an end in itself for economic development. It refers to the process of making sure that people and businesses have access to affordable, useful, and appropriate financial products and services that meet their needs ranging from savings to payments to credit, insurance, and remittances (World Bank, 2021). The essence of financial inclusion is much more than the opening of bank accounts; financial inclusion includes access, use and quality of financial services. "Access" resonates availability and penetration of financial institutions, "usage" is the frequency and depth of engagement with financial services and "quality" includes the propriety, reliability and affordability of the financial products for different income groups" (Sarma & Pais, 2011). Inclusive finance contributes to improving the welfare of individuals, spurring the growth of businesses and also macroeconomic stability as it increases participation in formal economic activities. In emerging economies, where huge populations are still unbanked or underbanked, fintech is an opportunity to close the inclusion gap in an unprecedented manner.

Nigeria constitutes the interesting case study in analysing this game-changer relationship between fintech and financial inclusion. Despite being Africa's biggest economy and most populous country, Nigeria has yet to fully address relatively low levels of financial inclusion. According to the Central Bank of Nigeria (CBN) and Enhancing Financial Innovation and Access (EFInA, 2022), as of 2022, the rate of adults who were financially included in Nigeria is put at about 64 per cent, which is less than the 80 per cent target for the year 2020. Millions more Nigerians still miss out on exclusion factors such as poverty, low financial literacy, poor access to identification and low digital infrastructure and high cost to service fees. Traditional banks have been unable to penetrate to remote areas profitably MRV, 2010, and the result is a persistent dual system one formal and urban centred, the other informal and cash based.

However, the advent of fintech has started to mouth the challenge to this imbalance. With mobile phone penetration at over 90 percent and more than 150 million active subscriptions (NCC, 2023), Nigeria's digital environment offers rich soil for the growth of fintech. Innovative companies like OPay, PalmPay, Carbon, Flutterwave, and Paga are reinventing the way Nigerians transact, save and borrow especially among previously inaccessible segments of society. To recognise this trend, the CBN initiated the National Financial Inclusion Strategy (NFIS) in 2012 and revised it in 2018 in order to promote the adoption of digital financial services (DFS) specifically through mobile money, agent networks, and payment system modernization. The launch of the eNaira Nigeria's Central Bank Digital Currency (CBDC) and the regulation sandbox initiative are yet another example of the country's efforts to leverage the exalted power of technology in driving inclusion and resilience in the financial system.

Yet, despite these positive developments, there is a question as to whether or not fintech disruptions have actually led to wider or deeper financial inclusion. While fintech has increased access to digital transactions and credit, the full scope of its impact on the inclusion outcomes across the various socio-economic segments of Nigeria is not yet been certain. Traditional banks still continue to dominate in the formal market place of credit, regulatory frameworks remain uncoordinated, and infrastructural deficits including unstable internet connectivity and unreliable electricity remain challenging in facilitating the scalability of the digital finance industry. These issues are the main body of the research problem. Specifically, this study aims to understand how the fintech innovations have impacted the inclusion of the finance industry in Nigeria, which of the fintech channels such as mobile money, agency banking or digital lending have been most effective and what are the regulatory and infrastructural barriers still hindering progression.

The general purpose of this research therefore is to empirically determine the relationship between fintech disruptions and financial inclusion in Nigeria. The specific objectives include in threefold - First, to assess the general impact of fintech innovations on financial inclusion indices, second, to assert the most impactful fintech channel promoting inclusion, and finally, to analyse the regulatory and infrastructural barriers affecting fintech's effectiveness on inclusive finance. In line with these aforementioned objectives, the study addresses three major research questions which are: (i) how have fintech innovations impacted on financial inclusion in Nigeria? (ii) Which of the fintech channels control inclusion the best? And (iii) what are the regulatory and infrastructural constraints to Fintech driven inclusion?

2. Literature Review

2.1. Conceptual Framework

The emergence of financial technology (Fintech) has transformed the way people and companies use and access financial services globally. Fintech broadly means the innovative use of digital technologies such as mobile applications, blockchain, artificial intelligence and big data analytics for better delivery and accessibility of financial services (Arner, Barberis, & Buckley, 2016). In emerging economies where the traditional banking infrastructure is still limited the fintech has become a game changer in driving towards the concept of financial inclusion, which refers to the process of ensuring access to affordable, useful, and quality financial products and services that will fit the needs of individuals and businesses (Demirguc-Kunt et al., 2018).

Financial inclusion has four dimensions including access, usage, quality, and affordability. Access is concerned with access to and availability of formal financial services including savings, payments, credit and insurance to all segments of society. Usage is related to the regularity, depth, and sustainability of the utilisation of financial services. Quality measures the effectiveness of how these services satisfy the requirements of the users, while affordability determines whether the costs are reasonable according to the level of income of the users (Sarma & Pais, 2011).

In Nigeria, despite the country being Africa's largest economy and having one of the highest mobile phone penetration rates on the continent, access to financial services is not all that accessible. According to the Central Bank of Nigeria (CBN, 2022), it is estimated that there are still 36% of Nigerian adults who are still excluded from financial inclusion. This gap is greater in the rural areas, which are limited by geographical, infrastructural, and socioeconomic determinants of access to formal banking services. Fintech companies, through mobile money payments, digital banking platforms and agency networks are helping to bridge this gap by finding alternative channels that circumvent the traditional barriers of brick-and-mortar banking (Ozili, 2018).

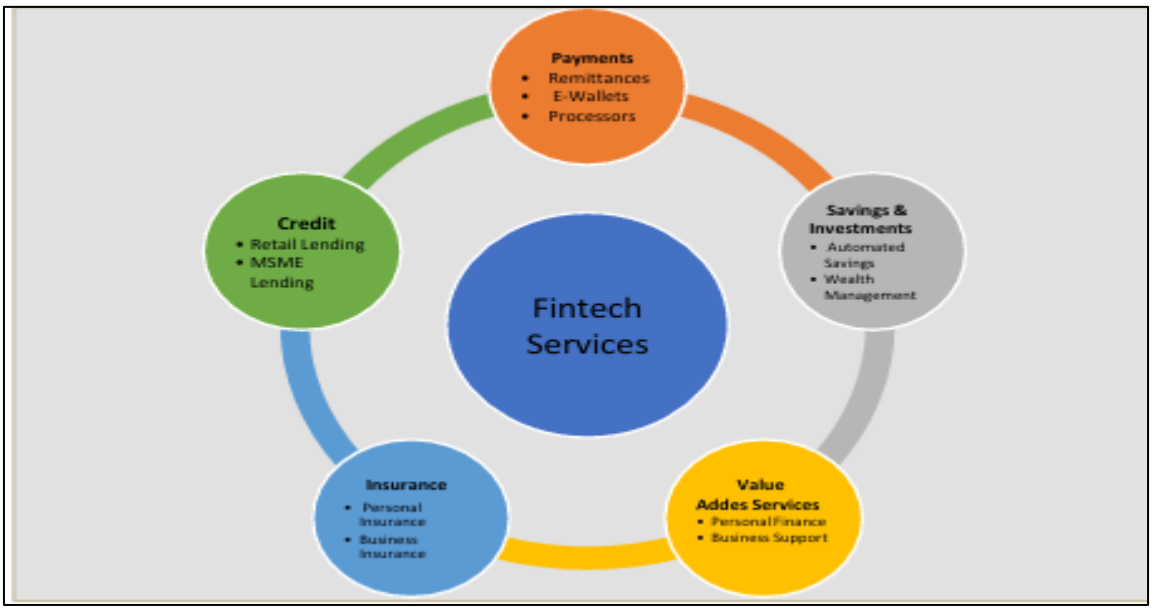


Figure 1 Broad Categories of Fintech Products and Services in Emerging Economies

Source: Adapted from Ogunode and Akintoye (2023)

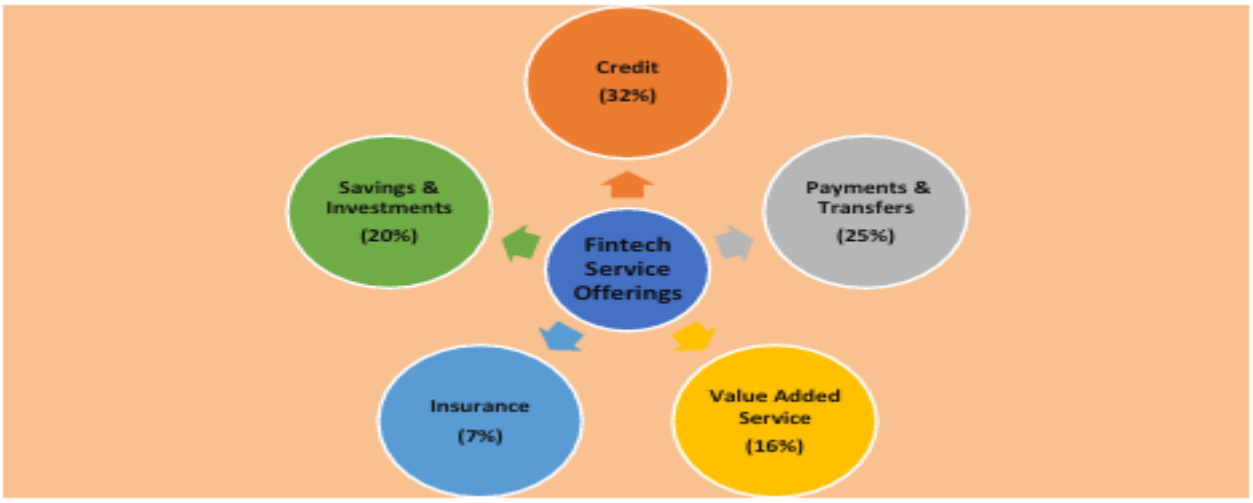
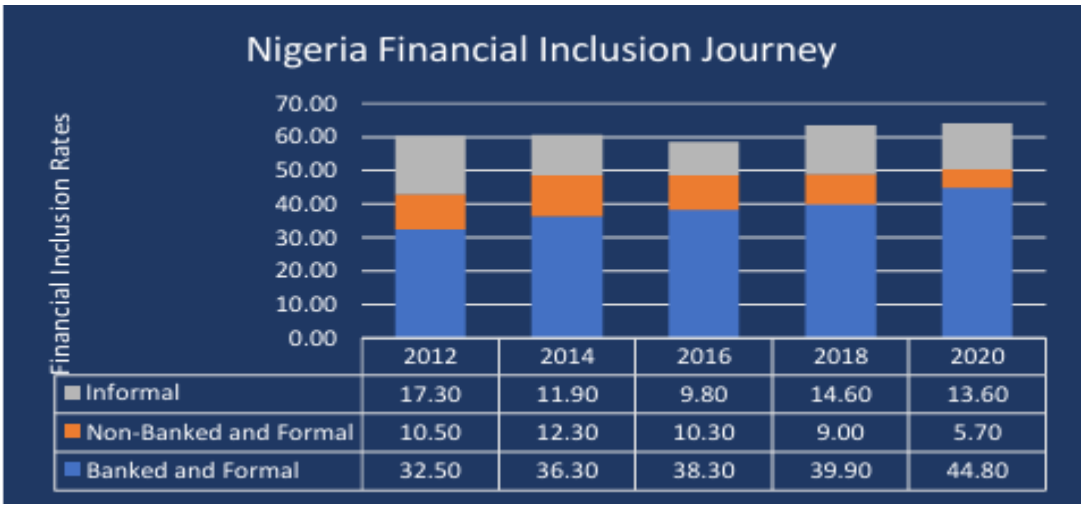


Figure 2 Fintech Service Offerings Split

Source: Adapted from Ogunode and Akintoye (2023)



	2012	2014	2016	2018	2020
Informal	17.30	11.90	9.80	14.60	13.60
Non-Banked and Formal	10.50	12.30	10.30	9.00	5.70
Banked and Formal	32.50	36.30	38.30	39.90	44.80

Figure 3 Nigeria financial inclusion growth trajectory

Source: EFInA Access to Financial Services in Nigeria Surveys (2012,2014,2016,2018, 2020)

Although Nigeria's National Financial Inclusion Strategy (NFIS), introduced in 2012 and updated in 2018, set a target of 80% inclusion rate by 2020, it did not materialise. Formal financial inclusion has improved slightly from 43% in 2012 to 50.5% in 2020 but there is a decrease in the share which was directly driven by fintechs outside traditional banks (from 10.5% to 5.7%). This is a indication that more needs to be done in terms of funding, regulation and infrastructure in order to allow for fintechs to play a significant role in the inclusion agenda. On the positive side, the percentage of adults using only the informal financial service decreased from 17.3% to 13.6%, indicating that more Nigerians are now accessing the formal financial system. Overall, the level of financial inclusion came in at 64.1% per year 2020, meaning that approximately one in three adults remained excluded from the financial system. Interestingly, the growth of fintech activity is phenomenal Nigeria now leads Africa in the fintech space hosting major unicorns such as Flutterwave, Interswitch, and Opay. Mobile money transaction has exploded to N9.43 trillion in 2020 against N2.09 trillion in 2012. However, the bulk of fintech operations continue to be centred around urban areas and rural regions are underserved. Bridging this gap between the urban and rural experience across all regions of Nigeria will take better policies, regulatory clarity and focused investments to expand the benefits of digital finances.

2.2. Theoretical Framework

This study is anchored on the Diffusion of innovation Theory (Rogers, 2003) and Financial Intermediation Theory. The Diffusion of Innovation Theory identifies how new technologies spread in a population and the influences which affect their adoption. Fintech innovations - including mobile banking, peer-to-peer lending, and digital payments - are new technological paradigms that require users to learn new behaviours and put some trust in digital platforms. The theory offers a framework for understanding user adoption patterns as well as social and economic factors involved in the facilitation and even hindrance of fintech diffusion in Nigeria.

The Financial Intermediation Theory on the other hand sees the financial institutions as agents which bridge the gap between the surplus and deficit units in an economy. Fintech platforms redefine this intermediation action by using digital tools to connect borrowers and lenders directly, in the process decreasing transaction costs, information asymmetry and time to deliver service (Schumpeter, 1934; Levine, 2005). This theoretical perspective provides a supporting reason for the role that fintech firms play in increasing financial inclusion through intermediation mechanisms that are efficient and accessible.

2.3. Empirical Review

Empirical studies on fintech and financial inclusion show mixed but mostly positive results on the impact of fintech. Beck et al. (2016) make the case that digital financial services lower the transaction costs and increase the efficiency of financial markets. Similarly, Andrianaivo and Kpodar (2012) finds that mobile phone penetration has positive correlation with financial inclusion and economic growth of African countries.

In the Nigerian context, Oguju and Ikpefan (2020) observe that fintech adoption - in particular, mobile payments and agency banking - greatly increases access to financial services in rural and underserved areas. Also Adedoyin et al. (2021) shows that fintech innovations facilitate better savings mobilisation and access to credit for the low-income earners. But these gains are often limited by challenges such as lack of digital literacy, infrastructural peculiarities and inconsistent regulatory frameworks (Ejemeyovwi & Osabuohien, 2020).

Moreover, despite increasing access to credit, digital lending platforms are sometimes associated with high interest rates as well as with potential privacy concerns (Ozili, 2021). Studies as done by Abor et al. (2022) note that the avenue to sustainable financial inclusion lies on regulatory certainty, cybersecurity and consumer protection. Thus, although fintech offers tremendous possibilities for inclusive growth, the sustainability of fintech in emerging economies depends on appropriate regulations, trust development, and digital infrastructure development. In summary, fintech is found to play a very important role in the promotion of financial inclusion, particularly through mobile money and agency banking. However, structural problems such as low levels of financial literacy, poor network penetration and weak institutional capacity still exist to restrict its full impact. This research, thus, draws on existing empirical and theoretical scenarios to discuss how the financial inclusion landscape in Nigeria is being shaped due to fintech disruptions and what fintech channels are having the greatest impacts.

3. Methodology

This study uses quantitative explanatory research design, the focus is on what financial inclusion implications has been on the disruption of fintech in Nigeria. The explanation approach is suitable in the sense that it enables to identify and quantify the relationships between fintech variables such as adoption, accessibility, innovation, and regulation and the general dimensions of financial inclusion: access, usage and quality. The paper is planned largely based on secondary data from creditable institutional documents covering the period between 2015 - 2024 i.e. during a decade that witnessed a rapid growth period of development of all sectors and developments of the Nigerian fintech ecosystem and digital payment infrastructure during a time of regulatory evolution under the Financial Inclusion Strategy of the Central Bank of Nigeria.

The data used in this study were gathered from a number of authoritative sources in order to ensure accuracy, completeness and reliability: Central Bank of Nigeria (CBN), Nigeria Inter-Bank Settlement System (NIBSS, Enhancing Financial Innovation and Access (EFInA), Global Findex Database (World Bank) and National Bureau of Statistics (NBS). Combining these datasets allows us to gain a balanced view on both how financial services are supplied (financial service providers and fintech platforms) and are used by households and consumers to gain access to and use our finance.

3.1. Variables and Measurement

The dependent variable in this study is financial inclusion (FI), measured through three dimensions commonly used in inclusion literature:

- **Access (FI_1):** Captured by the percentage of adults with access to a bank or mobile money account, agent banking coverage, and ATM density per 100,000 adults.
- **Usage (FI_2):** Measured by transaction frequency, savings and borrowing behavior, and volume of active digital accounts.
- **Quality (FI_3):** Reflects customer satisfaction, reliability of financial services, and the diversity of financial products available.
- The independent variable, fintech disruption (FD), is conceptualized as a multidimensional construct reflecting the extent to which fintech innovations are reshaping financial service delivery. It includes:
- **Fintech Adoption (FD_1):** Measured by the number of mobile banking users, fintech app downloads, and transaction volumes on digital platforms.
- **Fintech Accessibility (FD_2):** Captured by mobile penetration rates, broadband access, and agent network density.
- **Fintech Innovation (FD_3):** Represented by the number of new fintech products and start-ups, venture capital investment, and digital payment innovations.
- **Fintech Regulation (FD_4):** Measured by the introduction of supportive regulatory frameworks, consumer protection laws, and licensing regimes for digital finance operators.

Control variables include GDP per capita, education level, urbanization rate, and digital infrastructure index, as these factors often shape inclusion outcomes.

3.2. Model Specification

To estimate the effect of fintech disruption on financial inclusion, the study employs a panel regression model using annual data for the period 2015–2024. The model is specified as follows:

$$FI_{it} = \alpha_0 + \beta_1 FDADOP_{it} + \beta_2 FDACC_{it} + \beta_3 FDINN_{it} + \beta_4 FDREG_{it} + {}_{\gamma}Z_{it} + \mu_i + \varepsilon_{it}$$

Where: FIit= Financial inclusion index (access, usage, or quality) at time t, FDADOPit = Fintech adoption indicators, FDACCit = Fintech accessibility indicators, FDINNit = Fintech innovation indicators, FDREGit = Fintech regulation indicators, Zit = Control variables (GDP per capita, education, digital infrastructure), μi= Unobserved entity-specific effects, εit = Error term. Both fixed-effects and random-effects estimations will be employed to account for time-invariant characteristics and unobserved heterogeneity. The Hausman test will determine the more appropriate model.

3.3. Analytical Procedure

The analysis commences with descriptive statistics summarising trends in data, to visualise trends in the growth of fintech and financial inclusion indicators. Correlation matrices will be used to examine associations and possible multi collinearity between variables. Next, the panel regression analysis will be performed to quantify the effects of fintech dimensions with respect to financial inclusion. One set of robustness cheques, by using the Generalised Method of Moments (GMM), will address endogeneity concerns such as the possibility that financial inclusion may lead, in turn, to more fintech activity.

Diagnostics tests will be the following: Variance Inflation Factor (VIF) to cheque for Multicollinearity, Breusch-Pagan test for Heteroskedasticity, Wooldridge test for Serial Correlation, Normality Test for model residuals. The statistical analysis will be done with the help of Eview 12 ensuring consistency and replicability for different modelling frameworks.

4. Analysis and Results

4.1. Descriptive Statistics

The descriptive analysis in Table 1 provides a snapshot of Nigeria's fintech and financial inclusion landscape between 2015 and 2024**.**

Table 1 Descriptive Statistics

	FDR	FII	FDADOP	FDACC	FDINN	FDREG	GDP
Mean	51.34400	45.52200	46.61300	41.56800	31.23500	37.89800	2048.192
Median	49.29500	44.64000	46.63500	41.90000	27.00500	39.46500	2155.540
Maximum	81.63000	61.47000	83.83000	70.59000	55.61000	56.95000	2522.590
Minimum	21.49000	28.84000	15.86000	13.19000	8.690000	20.65000	1442.500
Std. Dev.	20.23828	11.58574	24.29056	17.52677	17.63855	12.15474	418.9018
Skewness	-0.037427	0.052727	0.156519	0.050424	0.213942	0.022181	-0.194211
Kurtosis	1.773318	1.604102	1.652871	2.099245	1.529146	1.861111	1.444080
Jarque-Bera	0.629313	0.816521	0.796979	0.342304	0.977706	0.541265	1.071566
Probability	0.730040	0.664806	0.671333	0.842693	0.613329	0.762897	0.585211
Sum	513.4400	455.2200	466.1300	415.6800	312.3500	378.9800	20481.92
Sum Sq. Dev.	3686.293	1208.064	5310.280	2764.689	2800.065	1329.640	1579308.
Observations	10	10	10	10	10	10	10

Source: Author's computation from CBN, NIBSS, EFInA, Global Findex, and NBS data (2015–2024).

The descriptive statistics indicate that fintech disruptions and related activities in the Nigerian market have generally seen a steady growth from 2015 till 2024. Fintech adoption and accessibility is increasing, meaning that there are an increasing number of people and businesses using fintech, although there are still some limitations to access. Innovation and regulatory support are taking shape slowly, corresponding to the constant endeavour to fortify the fintech ecosystem. Financial inclusion is at a moderate level, meaning there is still a lot of potential for extension and adoption. GDP per capita experiences moderate growth, which indicates the steady development of the economy along with the development of fintech. Overall, the data paints a picture of a dynamic yet uneven development of fintech and financial inclusion and a picture of both opportunities and problems presented by the use of digital finance in economic development. The analysis shows that fintech disruptive and related activities in Nigeria generally have grown steadily from 2015 to 2024. Fintech adoption and accessibility continue to grow and show the increasing number of people and businesses that use digital financial services, but access is still subject to some limitations. There is a growing innovation and regulatory support, which are some of the indicators of continuous development to strengthen fintech ecosystem. Financial inclusion is currently at a moderate level, indicating there is scope for improving access, usage, and quality, while the GDP per capita growth is not too low, implying steady economic growth over time along with fintech growth.

4.2. Correlation Analysis

To understand the relationships among the key variables, a correlation matrix was generated (see Table 2).

The results of the correlation attempt reinforce this picture and show strong positive correlations between fintech disruption, financial inclusion, adoption, accessibility, innovation, regulation, and GDP. For example, fintech disruption is strongly correlated with financial inclusion (r = 0.979) and GDP (r = 0.952), suggesting that fintech technological and service innovations are strongly correlated with better access to financial services and economic gains. Similarly, adoption, accessibility and innovation are all highly linked to each other, indicating that advances in one area will tend to reinforce gains across the entire fintech ecosystem. Regulation is also highly correlated with adoption (r = 0.987) and GDP (r = 0.970) and shows that supportive policies play a crucial role in driving both fintech growth and economic growth in general. All in all, the findings depict a dynamic and interconnected fintech landscape in Nigeria in which the combined improvement of technology, regulations and adoption-related factors positively impact financial inclusion and contribute to economic growth.

Table 2 Correlation Matrix

Correlation							
Probability	**FDR**	**FII**	**FDADOP**	**FDACC**	**FDINN**	**FDREG**	**GDP**
FDR	1.000000						

FII	0.979345	1.000000					
	0.0000	-----					
FDADOP	0.981667	0.991826	1.000000				
	0.0000	0.0000	-----				
FDACC	0.974165	0.961631	0.968019	1.000000			
	0.0000	0.0000	0.0000	-----			
FDINN	0.966198	0.982786	0.973555	0.927092	1.000000		
	0.0000	0.0000	0.0000	0.0001	-----		
FDREG	0.982888	0.969720	0.986804	0.975472	0.949316	1.000000	
	0.0000	0.0000	0.0000	0.0000	0.0000	-----	
GDP	0.951940	0.968709	0.973759	0.948758	0.951785	0.970066	1.000000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-----

Source: Author's computation (2025)

4.3. Regression Results

The regression results in Table 3 present how fintech disruptions have influenced financial inclusion over the period studied.

The analysis reveals the effects of fintech activities in Nigeria particularly adoption, accessibility, and innovation have steadily increased and are closely tied together, leading to the financial inclusion and economic growth. Descriptive Statistics show that there is a moderate level of growth in adoption and access, while innovation and regulation are slowly evolving. Financial inclusion is improving but only moderate and there is steady progress and improving in GDP per capita. The correlation analysis supports this and shows strong positive correlations between fintech disruption, adoption, accessibility, innovation, regulation and GDP, suggesting that improvements in one area tend to support growth in areas across the fintech ecosystem. The results of regression analysis with OLS corroborate these tendencies. Fintech adoption, accessibility and innovation All three trends show significant positive impacts on financial inclusion, which means that when more people are using digital financial services, and when there is more innovation and accessibility for them to use digital financial services, then financial inclusion is increasing. GDP per capita is also positively related to inclusion indicating the higher income levels facilitate greater access to financial services. Regulatory support however indicates a negative but statistically insignificant impact, that implies that policies are in place but may not have translated fully into measurable improvements in financial inclusion. Overall, the findings imply the need for promoting fintech adoption, working to improve accessibility, innovation, and for the overall growth of the economy in order to boost the level of financial inclusion in Nigeria, while regulations impose may require additional refinement for the regulations to produce the maximum benefit.

Table 3 Regression Results (Dependent Variable: Financial Inclusion Index)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	25.51264	6.832370	3.734084	0.0202
FDADOP	0.389151	0.183577	3.119817	0.0014
FDACC	0.146742	0.126908	4.156284	0.0119
FDINN	0.195940	0.127890	4.532097	0.0003
FDREG	-0.394610	0.297001	-1.328647	0.2547
GDP	0.102248	0.005259	3.427470	0.0010
R-squared	0.993155	Mean dependent var		45.52200
Adjusted R-squared	0.984599	S.D. dependent var		11.58574
S.E. of regression	1.437817	Akaike info criterion		3.847839
Sum squared resid	8.269274	Schwarz criterion		4.029390
Log likelihood	-13.23919	Hannan-Quinn criter.		3.648678
F-statistic	116.0725	Durbin-Watson stat		1.798957
Prob(F-statistic)	0.000204			

Source: E-views Output (2025)

5. Discussion of Findings

The study investigated the impact of fintech disruptions on the inclusion of the financial sector in Nigeria from 2015 to 2024. The descriptive analysis indicates that fintech adoption, accessibility, and innovation have generally increased during the period, whereas financial inclusion is moderate, and so there is a substantial room for growth. GDP per capita also demonstrated positive improvement providing insights into a pro-business economic environment that may be conducive to expansion of digital financial services. The correlation analysis showed strong positive relationship between fintech disruption, fintech adoption, fintech accessibility, fintech innovation, fintech regulation and GDP. This implies that developments in one component of the fintech ecosystem strengthens developments in the others, and this is consistent with Ozili (2020), who expressed the important role of digital financial services in expanding financial access on Nigeria. The results of the regression give us more information. Fintech adoption and accessibility : Through fintech adoption, accessibility and innovation tend to have positive and noticeable impacts on financial inclusion, thus proving that as more people adopt digital financial services with the help of fintech, as more fintech solutions become more accessible and innovative, financial inclusion improves as well. This is consistent with Bamanga, Ibrahim and Adebayo (2025) who finds out that mobile banking, POS terminals and internet banking have a significant impact on financial inclusion. In particular, the innovation brought about by fintech leads to higher financial engagement to underserved population, as can be observed from the findings of Sam-Abugu, Chukwu and Okonkwo (2025). Interestingly, there was a negative but statistically insignificant impact of fintech regulation, suggesting that while the tenure is involved in regulation of financial inclusion, there seemingly may not be enough time to support financial inclusion. This agrees with the findings of Odu (2020), who highlighted that the regulatory constraints in Sub-Saharan Africa could sometimes constrain the reach of fintech services. GDP per capita was positively related to financial inclusion, consistent with the notion that economic development acts as a favourable environment for the adoption of digital finance, as in Idris (2025). Overall, the findings show a key takeaway on the adoption, accessibility, and innovation surrounding fintech adoption as key drivers of financial inclusion in Nigeria while regulatory frameworks need to be fine-tuned to achieve maximum impact. In light of this, there is a need for policymakers to focus on strengthening digital infrastructure, encouraging adoption of fintech, innovation, and aligning policy coherently with the changing environment of fintech, in order to contribute towards financial inclusion and economic development.

6. Conclusion

This research therefore looked into the impact of fintech disruptions in the financial inclusion in the Nigerian economy between 2015 to 2024. The findings show that adoption of fintech, fintech accessibility, and innovation are playing an important role in improving financial inclusion, and the role of regulatory frameworks seems limited, at least for now

in its current form. There is a further positive correlation between economic growth, measured by GDP per capita, and an increase in financial inclusion which suggests that higher income levels help to enable more access to digital financial services. Overall, the results highlight the importance of tech-enabled financial services (fintech) in achieving financial inclusion in emerging economies such as Nigeria, as the development of fintech is an effective tool in financial inclusion and economic growth.

6.1. Recommendations

Based on the findings, there are a number of recommendations:

- While policymakers and financial institutions should conduct policies to promote the uptake of digital financial services, especially among the underserved.
- Incentives for innovation in fintech venture startups and in research in innovative financial products should be increased to improve service offerings and to enhance financial inclusion.
- Regulatory bodies must simplify and adjust policies to facilitate the growth of fintech with the underlying idea that regulations must work for consumers but not against fintech adoption and innovation.
- Efforts to reduce income level disparities and increase economic prosperity can have an indirect effect on financial inclusion, for example by making digital financial services more affordable and accessible.
- Scholars should extend the analysis to other emerging economies, discuss causal relationships, and believe that micro-level data should be taken into account to provide a more nuanced view of the impact of fintech and financial inclusion.

6.2. Limitations

Despite its contributions, however, there are some limitations with the study:

- The study is focused on Nigeria and this may impact generalizability of the findings to other emerging economies which have different fintech ecosystems.
- The study is based on secondary data and the use of composite indices, which can obscure some granular elements of the use of fintech and the effectiveness of regulation.
- The analysis did not delve very deeply into causal mechanisms; more the associations and predictive relationships.

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