

Original Research Article

## **BARRIERS TO FINTECH ADOPTION AND THEIR IMPLICATIONS FOR FINANCIAL INCLUSION IN BAYELSA STATE**

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**Abstract:** This study examined the barriers to FinTech adoption and their implications for financial inclusion in Bayelsa State, Nigeria. The objectives were to assess the level of awareness and adoption of FinTech services, identify the key barriers to adoption, and examine the relationship between these barriers and financial inclusion outcomes in the study area. A descriptive survey research design was adopted, and primary data were collected through structured questionnaires administered to 582 respondents drawn from different socio-economic groups in Bayelsa State. Data were analyzed using descriptive statistics such as frequency, percentages, and mean scores. Findings revealed that awareness of FinTech services among respondents is relatively high; however, actual adoption remains moderate. Major barriers identified include poor internet connectivity, irregular electricity supply, low digital literacy, lack of trust in digital platforms, fear of fraud and cybercrime, and high transaction costs. The study further found that FinTech services have positively influenced financial inclusion by improving access to financial services, enhancing money transfer efficiency, and promoting savings and financial participation. However, access to credit through digital platforms remains limited. The study concluded that while FinTech has significant potential to enhance financial inclusion in Bayelsa State, its impact is constrained by infrastructural, socio-economic, and security-related challenges. It was recommended that government and relevant stakeholders improve digital infrastructure, enhance financial literacy, strengthen cybersecurity systems, and promote awareness campaigns to encourage wider adoption of FinTech services.

**Keywords:** Fintech, Financial Inclusion, Adoption Barriers, Digital Finance, Bayelsa State.

## 1.1 Introduction

The financial system across the world has undergone significant transformation due to the emergence of financial technology (FinTech), which integrates digital innovation with financial services to improve efficiency, accessibility, and convenience in financial transactions. FinTech has revolutionized the delivery of banking services through mobile banking, digital payments, online lending, crowdfunding, agency banking, and mobile money platforms, thereby expanding access to financial services beyond traditional banking structures. In developing countries such as Nigeria, FinTech has become an important instrument for promoting financial inclusion, especially among low-income earners, rural dwellers, women, and small business operators who are often excluded from the formal financial system (Schumpeter, 1934; Mishkin, 2007; Todaro & Smith, 2015). Recent studies further indicate that FinTech innovation has improved the accessibility and affordability of financial services while reducing transaction costs and geographical limitations associated with conventional banking systems (Nwankwo, 2024; Sam-Abugu, Luo, & Wong, 2025; Bandi, 2025).

Financial inclusion refers to the process of ensuring that individuals and businesses have access to useful, affordable, and reliable financial products and services that meet their needs in a sustainable manner. It encompasses access to savings, credit, insurance, payments, and investment opportunities for all segments of society. Financial inclusion has gained global attention because of its role in poverty reduction, economic growth, employment generation, and social development. International institutions such as the World Bank and the International Monetary Fund have consistently emphasized the importance of inclusive financial systems in achieving sustainable development goals. In Nigeria, the Central Bank of Nigeria has implemented several policies such as the National Financial Inclusion Strategy, cashless policy initiatives, and digital payment reforms to improve financial access through digital channels (CBN, 2023; IMF, 2021; World Bank, 2022). Despite these efforts, a substantial proportion of the Nigerian population, particularly those in rural communities, remains financially excluded due to infrastructural, technological, educational, and socio-economic barriers (Ajakaiye & Fakiyesi, 2009; Olorunfemi & Adeleke, 2010; Nwankwo, 2024).

In recent years, Nigeria has witnessed rapid growth in the FinTech sector, with companies providing innovative financial solutions that support digital transactions, savings, credit facilities, and business financing. Firms such as Flutterwave, Paystack, OPay, and Kuda Bank have transformed the digital financial landscape by making financial services more accessible through smartphones and internet-enabled devices. These innovations have contributed significantly to the expansion of digital payment systems and mobile banking adoption in Nigeria. However, the growth of FinTech usage has not been uniform across different geographical regions and demographic groups. Several studies have shown that poor internet connectivity, low digital literacy, inadequate electricity supply, poverty, weak cybersecurity systems, lack of trust in digital platforms, and

regulatory uncertainties continue to hinder FinTech adoption among many Nigerians (Udoma & Ogala, 2022; Bandi, 2025; Ojeh, Udefi, & Nkwo, 2025).

Bayelsa State, located in the Niger Delta region of Nigeria, presents a unique context for examining barriers to FinTech adoption and their implications for financial inclusion. Although the state possesses growing urban centers and increasing mobile phone penetration, many communities remain riverine and geographically isolated, with limited access to banking infrastructure and digital connectivity. Economic activities in the state are dominated by petty trading, fishing, farming, and informal businesses, many of which operate outside the formal banking sector. Consequently, FinTech services possess significant potential to bridge financial access gaps in the state. Nevertheless, infrastructural deficiencies, poor electricity supply, low digital awareness, insecurity, poverty, and distrust of digital financial systems may limit the effectiveness of FinTech solutions in enhancing financial inclusion among residents (Todaro & Smith, 2015; Udoma & Ogala, 2022; Adekunle, Sule, & Ismail, 2026). Furthermore, socio-cultural factors, language barriers, and low levels of financial literacy among rural populations may further discourage the adoption of digital financial services in Bayelsa State (Bandi, 2025; Nwankwo, 2024; Hassan & Utulu, 2022).

Another critical concern affecting FinTech adoption is the increasing incidence of cybercrime, fraud, data breaches, and online financial scams associated with digital financial platforms. Many potential users perceive FinTech applications as unsafe due to fears of identity theft, unauthorized deductions, failed transactions, and hacking incidents. These concerns reduce public confidence in digital financial systems and discourage usage, especially among older adults and rural populations who may have limited technological knowledge. Scholars have argued that trust and security are fundamental determinants of digital financial adoption because consumers are more likely to use financial technologies they perceive as secure and reliable (Javaheri et al., 2023; Udoma & Ogala, 2022; Julius & Blessing, 2025). In addition, inadequate consumer protection mechanisms and weak enforcement of cybersecurity regulations may worsen the challenges associated with FinTech adoption in developing economies such as Nigeria (Adekunle et al., 2026; Nwankwo, 2024; Ojeh et al., 2025).

Despite the increasing relevance of FinTech in promoting financial inclusion, empirical evidence suggests that several structural and institutional barriers continue to limit its effectiveness, particularly in rural and economically disadvantaged areas. While existing studies have examined FinTech adoption and financial inclusion in Nigeria generally, there is limited empirical literature focusing specifically on Bayelsa State. This creates a gap in knowledge regarding the peculiar barriers affecting FinTech usage and the extent to which these barriers influence financial inclusion within the state. Therefore, this study seeks to examine the barriers to FinTech adoption and their implications for financial inclusion in Bayelsa State, Nigeria. The study is expected to contribute to existing literature by providing insights that may assist policymakers, financial institutions, FinTech companies, and development agencies in designing strategies that will enhance digital financial participation and inclusive economic development in the state.

The main objective of this study is to examine the barriers to FinTech adoption and their implications for financial inclusion in Bayelsa State. The specific objectives are to:

1. Examine the level of awareness and adoption of FinTech services among residents in Bayelsa State.
2. Identify the key barriers hindering the adoption of FinTech services in Bayelsa State.
3. Assess the impact of FinTech adoption on the level of financial inclusion in Bayelsa State.
4. Evaluate the relationship between identified barriers to FinTech adoption and financial inclusion outcomes in Bayelsa State.

## **2.0 Literature Review**

The literature on financial technology (FinTech) and financial inclusion has expanded significantly in recent years, particularly in developing economies where digital financial services are seen as critical tools for bridging financial access gaps. Scholars have examined the role of FinTech in enhancing financial service delivery, reducing transaction costs, and expanding outreach to underserved populations. At the same time, growing attention has been paid to the barriers that hinder the effective adoption of FinTech, especially in rural and economically disadvantaged regions. This section reviews relevant concepts underpinning the study, focusing on FinTech, financial inclusion, FinTech adoption, and barriers to adoption, with a view to establishing a conceptual foundation for analyzing their implications in Bayelsa State.

### **2.1 Conceptual Clarification**

#### **2.1.1 Financial Technology (FinTech)**

Financial Technology (FinTech) refers to the application of innovative digital technologies to deliver financial products and services in a more efficient, accessible, and cost-effective manner. It encompasses a wide range of services including mobile payments, digital banking, peer-to-peer lending, crowdfunding, blockchain technology, and robo-advisory services. According to Schueffel (2016), FinTech represents a new financial industry that applies technology to improve financial activities, while Gomber, Koch, and Siering (2017) describe it as innovations that disrupt traditional financial services through automation and digitalization. Similarly, Arner, Barberis, and Buckley (2015) argue that FinTech reflects the intersection of finance, technology, and innovation aimed at enhancing financial intermediation.

In the context of developing economies such as Nigeria, FinTech has emerged as a transformative force capable of addressing inefficiencies in traditional banking systems. It enables financial institutions and non-bank entities to provide services through mobile platforms and internet-based applications, thereby extending financial services to previously excluded populations (Mishkin, 2007; Frame & White, 2014; Philippon, 2016). Recent studies further emphasize that FinTech reduces operational costs, enhances speed

and convenience, and promotes competition within the financial sector (Bandi, 2025; Nwankwo, 2024; Sam-Abugu et al., 2025).

### **2.1.2 Financial Inclusion**

Financial inclusion refers to the availability and accessibility of affordable, appropriate, and reliable financial services to all individuals and businesses, particularly those who are underserved or excluded from the formal financial system. The World Bank (2018) defines financial inclusion as access to useful and affordable financial products and services that meet users' needs in a responsible and sustainable way. Similarly, Sarma (2008) conceptualizes financial inclusion as a process that ensures ease of access, availability, and usage of financial services by all members of an economy.

Financial inclusion plays a crucial role in promoting economic development, reducing poverty, and improving income distribution. According to Demirgüç-Kunt, Klapper, Singer, Ansar, and Hess (2018), inclusive financial systems enable individuals to save securely, invest in education or businesses, manage risks, and cope with economic shocks. In Nigeria, efforts to promote financial inclusion have been driven by policy initiatives such as the National Financial Inclusion Strategy implemented by the Central Bank of Nigeria (CBN, 2023). However, despite these efforts, a significant proportion of the population remains financially excluded due to factors such as poverty, illiteracy, and inadequate infrastructure (Ajakaiye & Fakiyesi, 2009; Olorunfemi & Adeleke, 2010; NBS, 2023).

### **2.1.3 FinTech Adoption**

FinTech adoption refers to the extent to which individuals, businesses, and institutions accept and use financial technology services in their financial activities. It involves the willingness and ability of users to integrate digital financial tools such as mobile banking applications, digital wallets, and online payment platforms into their daily transactions. Rogers (2003), in his Diffusion of Innovation theory, explains adoption as the process through which an innovation is communicated over time among members of a social system.

The adoption of FinTech is influenced by several factors, including perceived usefulness, ease of use, trust, cost, and technological infrastructure. The Technology Acceptance Model (TAM) developed by Davis (1989) highlights perceived usefulness and perceived ease of use as key determinants of technology adoption. Similarly, Venkatesh et al. (2003), through the Unified Theory of Acceptance and Use of Technology (UTAUT), identify factors such as performance expectancy, effort expectancy, social influence, and facilitating conditions as critical to adoption decisions. Empirical studies in Nigeria have shown that mobile phone penetration, internet access, financial literacy, and trust significantly influence the adoption of FinTech services (Udoma & Ogala, 2022; Nwankwo, 2024; Ojeh et al., 2025).

### **2.1.4 Barriers to FinTech Adoption**

Barriers to FinTech adoption refer to the challenges and constraints that limit the acceptance and use of digital financial services among individuals and businesses. These barriers may be technological, economic, institutional, or socio-cultural in nature. According to Ozili (2018), major barriers to FinTech adoption in developing countries include inadequate infrastructure, low internet penetration, and regulatory challenges. Similarly, Demirgüç-Kunt et al. (2018) identify lack of trust, financial illiteracy, and high transaction costs as significant constraints to financial service usage.

In Nigeria, several studies have highlighted persistent barriers such as poor electricity supply, limited digital literacy, cyber insecurity, poverty, and lack of awareness as key impediments to FinTech adoption (Udoma & Ogala, 2022; Bandi, 2025; Adekunle et al., 2026). Cultural and behavioral factors, including resistance to change and preference for cash-based transactions, also play a role in limiting adoption (Hassan & Utulu, 2022; Nwankwo, 2024; Julius & Blessing, 2025). Furthermore, weak regulatory frameworks and inadequate consumer protection mechanisms may discourage users from trusting digital financial platforms, thereby reducing their willingness to adopt FinTech services (Arner et al., 2015; Ozili, 2018; Ojeh et al., 2025).

### **2.1.5 Implications of FinTech Adoption for Financial Inclusion**

The relationship between FinTech adoption and financial inclusion has attracted considerable scholarly attention, with many studies emphasizing the positive role of digital financial services in expanding financial access. FinTech adoption enhances financial inclusion by reducing the cost of financial transactions, increasing convenience, and extending services to remote and underserved areas. According to Suri and Jack (2016), mobile money services significantly improved financial inclusion and poverty reduction in Kenya by enabling access to financial services among low-income households.

Similarly, Ozili (2018) argues that FinTech promotes financial inclusion by overcoming traditional barriers such as distance, high costs, and documentation requirements. In Nigeria, the adoption of digital financial services has contributed to increased access to banking services, particularly through mobile money and agency banking systems (CBN, 2023; NBS, 2023; IMF, 2021). However, the extent of these benefits depends largely on the level of adoption and the ability to overcome existing barriers. Where barriers persist, the potential of FinTech to drive financial inclusion may be significantly constrained, particularly in rural and underserved regions such as Bayelsa State (Ajakaiye & Fakiyesi, 2009; Udoma & Ogala, 2022; Bandi, 2025).

## **2.2 Theoretical Literature**

This section examines the key theoretical frameworks underpinning the study of FinTech adoption and financial inclusion. The selected theories provide a foundation for understanding how individuals and institutions adopt financial innovations, as well as the structural conditions influencing access to financial services. The most relevant theories include the Diffusion of Innovation Theory, Technology Acceptance Model (TAM), Unified

Theory of Acceptance and Use of Technology (UTAUT), Financial Intermediation Theory, and the Theory of Financial Inclusion.

### **2.2.1 Diffusion of Innovation Theory**

The Diffusion of Innovation Theory was propounded by Everett Rogers (2003) and explains how new ideas, technologies, or innovations spread within a social system over time. The theory posits that adoption is influenced by factors such as relative advantage, compatibility, complexity, trialability, and observability. According to Rogers (2003), individuals fall into categories of adopters, including innovators, early adopters, early majority, late majority, and laggards, depending on their willingness to embrace new technologies.

This theory is highly relevant to FinTech adoption as it explains how digital financial services are gradually accepted among users. In the context of developing economies like Nigeria, adoption patterns are influenced by socio-economic conditions, literacy levels, and access to infrastructure. Studies have shown that awareness, perceived benefits, and social influence significantly determine how FinTech innovations diffuse among populations (Rogers, 2003; Udoma & Ogala, 2022; Nwankwo, 2024). The theory also highlights the importance of communication channels and institutional support in accelerating adoption, particularly in rural areas such as Bayelsa State (Rogers, 2003; Bandi, 2025; Ojeh et al., 2025).

### **2.2.2 Technology Acceptance Model (TAM)**

The Technology Acceptance Model (TAM) was developed by Fred Davis (1989) to explain how users come to accept and use new technologies. The model identifies two primary determinants of technology adoption: perceived usefulness and perceived ease of use. Perceived usefulness refers to the degree to which a person believes that using a particular system will enhance their performance, while perceived ease of use refers to the extent to which the system is free from effort.

TAM is widely applied in studies on FinTech adoption because it provides a simple yet powerful framework for analyzing user behavior toward digital financial services. Empirical studies have demonstrated that individuals are more likely to adopt FinTech services when they perceive them as beneficial, efficient, and easy to use (Davis, 1989; Venkatesh & Davis, 2000; Mishkin, 2007). In Nigeria, factors such as digital literacy, user-friendly interfaces, and cost of transactions influence perceived ease of use and usefulness, thereby affecting adoption rates (Udoma & Ogala, 2022; Nwankwo, 2024; Julius & Blessing, 2025). The model is particularly relevant in understanding user resistance to FinTech in rural areas where technological familiarity may be low.

### **2.2.3 Unified Theory of Acceptance and Use of Technology (UTAUT)**

The Unified Theory of Acceptance and Use of Technology (UTAUT) was developed by Viswanath Venkatesh, Morris, Davis, and Davis (2003) as an extension of earlier technology adoption models. UTAUT integrates elements from eight previous models, including TAM and the Theory of Reasoned Action, to provide a comprehensive

framework for analyzing technology acceptance. The theory identifies four key determinants of adoption: performance expectancy, effort expectancy, social influence, and facilitating conditions.

UTAUT is particularly relevant in explaining FinTech adoption because it incorporates both individual and environmental factors that influence technology usage. Performance expectancy reflects the perceived benefits of using FinTech services, while effort expectancy relates to ease of use. Social influence captures the effect of peer groups and societal norms, and facilitating conditions refer to the availability of infrastructure and support systems. Studies have shown that these factors significantly influence FinTech adoption in developing countries, where infrastructural constraints and social dynamics play critical roles (Venkatesh et al., 2003; Bandi, 2025; Ojeh et al., 2025). In Bayelsa State, issues such as poor internet connectivity, electricity challenges, and low awareness can be explained within the framework of facilitating conditions (Udoma & Ogala, 2022; Nwankwo, 2024; Adekunle et al., 2026).

#### **2.2.4 Financial Intermediation Theory**

Financial Intermediation Theory is rooted in the works of Gurley and Shaw (1960) and further developed by scholars such as Douglas Diamond (1984). The theory explains the role of financial institutions as intermediaries between savers and borrowers, facilitating the efficient allocation of financial resources within an economy. Financial intermediaries reduce transaction costs, manage risks, and provide liquidity, thereby enhancing economic efficiency.

The relevance of this theory to FinTech lies in the transformation of traditional intermediation processes through digital innovation. FinTech platforms, such as peer-to-peer lending and digital banking, have disrupted conventional financial intermediation by enabling direct interactions between users and financial service providers. According to Philippon (2016), technological advancements have improved the efficiency of financial intermediation by reducing costs and increasing accessibility. In developing economies, FinTech has expanded the scope of financial intermediation by reaching underserved populations that traditional banks often neglect (Gurley & Shaw, 1960; Diamond, 1984; Ozili, 2018). However, barriers such as weak infrastructure and regulatory challenges may limit the effectiveness of FinTech as an alternative intermediary (Udoma & Ogala, 2022; Bandi, 2025; Ojeh et al., 2025).

#### **2.2.5 Theory of Financial Inclusion**

The Theory of Financial Inclusion is not attributed to a single proponent but has evolved through contributions from institutions such as the World Bank and scholars like Asli Demirgüç-Kunt and Klapper (2012). The theory emphasizes the importance of providing universal access to financial services as a means of promoting economic development, reducing poverty, and enhancing social welfare. It argues that inclusive financial systems enable individuals and businesses to participate more effectively in economic activities.

This theory underscores the role of financial systems in ensuring equitable access to financial services, particularly for marginalized groups. It highlights that barriers such as poverty, illiteracy, and geographical isolation can limit financial inclusion, thereby reinforcing economic inequality. FinTech is seen as a key enabler of financial inclusion because it addresses many of these barriers by leveraging digital platforms to deliver services at lower costs and with greater reach (Demirgüç-Kunt et al., 2018; World Bank, 2018; IMF, 2021). However, the effectiveness of FinTech in promoting financial inclusion depends on the extent to which adoption barriers are addressed, particularly in rural regions like Bayelsa State (Ajakaiye & Fakiyesi, 2009; Udoma & Ogala, 2022; Nwankwo, 2024).

### **2.3 Empirical Literature**

Sam-Abugu Luo and Wong (2025) examined the relationship between FinTech adoption and financial inclusion in selected developing economies in Africa. The study covered Nigeria, Kenya, and Ghana between 2015 and 2024 using panel data obtained from central banks and financial inclusion databases. The researchers adopted a panel regression technique and descriptive statistical analysis to examine the effect of digital financial services on financial access. The findings revealed that FinTech adoption significantly increased access to mobile banking, digital payments, and savings services among rural populations. However, the study identified poor internet infrastructure, cybersecurity concerns, and low digital literacy as major barriers limiting widespread adoption. The study concluded that although FinTech possesses strong potential for enhancing financial inclusion, infrastructural development and digital education are necessary for sustainable adoption.

Bandi (2025) investigated the barriers to FinTech adoption and digital financial participation in developing economies, with specific attention to Nigeria and South Africa. The study adopted a survey research design involving 620 respondents selected through stratified random sampling. Data were analyzed using logistic regression and correlation techniques. The findings indicated that lack of trust in digital platforms, unstable electricity supply, poor internet connectivity, and fear of cyber fraud significantly reduced the willingness of individuals to adopt FinTech services. The study further found that users with higher levels of financial literacy were more likely to utilize digital financial products. The study concluded that improving digital infrastructure and consumer protection policies would enhance FinTech acceptance and financial inclusion.

Ojeh Udefi and Nkwo (2025) carried out a study on digital payment systems and financial inclusion in Nigeria. The scope of the study covered all six geopolitical zones of Nigeria using data from 2018 to 2024. The study employed an ex-post facto research design and utilized ordinary least squares (OLS) regression analysis to evaluate the relationship between digital payment adoption and financial inclusion indicators. The findings showed that mobile money usage and electronic banking services significantly improved financial inclusion by increasing access to financial services among low-income earners. Nevertheless, insecurity, cybercrime, low awareness, and poor telecommunication services were identified as major obstacles to adoption. The study concluded that strengthening

cybersecurity frameworks and expanding digital literacy programs would enhance the effectiveness of FinTech services in Nigeria.

Adekunle Sule and Ismail (2026) investigated the impact of digital financial services on rural financial inclusion in the Niger Delta region of Nigeria. The study focused on Bayelsa, Rivers, and Delta States and adopted a cross-sectional survey design involving 450 respondents from rural communities. Data were analyzed using multiple regression analysis and factor analysis techniques. The findings revealed that FinTech services positively influenced access to savings and payment services among rural households. However, inadequate electricity supply, low smartphone penetration, and lack of trust in digital systems were found to significantly hinder adoption. The study concluded that policy efforts aimed at infrastructural improvement and financial literacy would enhance the contribution of FinTech to financial inclusion in the Niger Delta region.

Nwankwo (2024) examined the determinants of FinTech adoption and financial inclusion in Nigeria. The study adopted a quantitative research approach using primary data collected from 500 respondents across urban and rural areas. Structural equation modeling (SEM) was employed to analyze the data. The findings indicated that perceived usefulness, ease of use, and trust positively influenced FinTech adoption, while poor internet access and low digital literacy negatively affected adoption rates. The study further found that increased FinTech usage improved access to financial services among previously excluded populations. The study concluded that enhancing digital awareness and technological infrastructure is essential for improving financial inclusion through FinTech innovation.

Udoma and Ogala (2022) conducted a study on barriers to FinTech development and adoption in Nigeria. The study adopted a descriptive survey design using questionnaires distributed to 300 respondents comprising bank customers and FinTech users. Data analysis was carried out using descriptive statistics and chi-square techniques. The findings showed that poor power supply, low technological knowledge, regulatory uncertainties, and cyber insecurity significantly affected the adoption of FinTech services. The study also found that many respondents preferred traditional banking channels because of concerns over online fraud and transaction failures. The study concluded that stronger regulatory policies and improved digital infrastructure are necessary for increasing public confidence in FinTech platforms.

Julius and Blessing (2025) investigated consumer trust and the adoption of digital financial services in Nigeria. The study covered major urban centers including Lagos, Abuja, Port Harcourt, and Yenagoa using a sample size of 400 respondents. The study adopted the Technology Acceptance Model (TAM) and utilized regression analysis to examine the relationship between trust and digital finance usage. The findings revealed that trust, perceived security, and reliability significantly influenced the adoption of FinTech services. Fear of cyber fraud and unauthorized deductions discouraged many individuals from using mobile banking applications and digital wallets. The study concluded that financial institutions and FinTech companies should strengthen cybersecurity systems and consumer protection measures to encourage greater adoption.

Hassan and Utulu (2022) examined socio-cultural factors affecting the adoption of digital financial services in rural Nigeria. The study employed a mixed-method research design involving questionnaires and interviews conducted among rural residents in northern and southern Nigeria. Data were analyzed using thematic analysis and descriptive statistics. The findings showed that language barriers, low literacy levels, and cultural preference for cash transactions significantly limited FinTech adoption in rural communities. The study further revealed that older adults were less willing to adopt digital financial services compared to younger individuals. The study concluded that culturally sensitive awareness programs and financial education initiatives are essential for improving digital financial participation in rural Nigeria.

Suri and Jack (2016) examined the effect of mobile money services on financial inclusion and poverty reduction in Kenya. The study utilized household survey data collected over several years and analyzed the data using econometric estimation techniques. The findings revealed that mobile money services significantly increased access to savings and transfer services among low-income households and contributed to poverty reduction. The study also found that mobile financial platforms reduced transaction costs and enabled households to better manage economic shocks. The study concluded that digital financial innovation can serve as an effective tool for enhancing financial inclusion in developing economies when supported by appropriate infrastructure and regulatory frameworks.

Ozili (2018) investigated the role of FinTech in financial inclusion within developing countries. The study adopted a conceptual and empirical approach using secondary data from selected African and Asian countries. Descriptive and inferential statistical methods were employed in the analysis. The findings showed that FinTech contributed positively to financial inclusion by reducing banking costs and improving accessibility to financial services. However, the study identified poor infrastructure, inadequate regulations, low income levels, and weak technological awareness as significant barriers to adoption. The study concluded that governments and regulatory authorities must formulate supportive policies capable of promoting digital finance while protecting consumers from cyber-related risks.

Demirgüç-Kunt Klapper Singer Ansar and Hess (2018) conducted a global assessment of financial inclusion using data from the Global Findex Database covering over 140 countries. The study adopted a quantitative research methodology and analyzed financial inclusion indicators using comparative statistical techniques. The findings revealed that digital financial services significantly improved access to banking services among underserved populations across developing countries. However, disparities in internet access, educational attainment, and income levels continued to limit financial inclusion in many rural communities. The study concluded that while digital finance presents significant opportunities for expanding inclusion, governments must address structural barriers such as poverty, illiteracy, and inadequate infrastructure to maximize its benefits.

Despite the growing body of empirical literature on FinTech adoption and financial inclusion, several important gaps remain. First, most recent studies have focused on national or cross-country analyses, with limited attention to sub-national contexts such as Bayelsa State, where geographical, infrastructural, and socio-economic conditions are unique. Second, while existing studies have identified general barriers such as poor infrastructure, low digital literacy, and trust issues, there is insufficient location-specific evidence on how these barriers interact and influence financial inclusion outcomes at the grassroots level. Third, many studies have examined either FinTech adoption or financial inclusion independently, with limited empirical effort directed at establishing the direct relationship between identified barriers to FinTech adoption and financial inclusion outcomes. Finally, few studies have simultaneously assessed awareness levels, adoption patterns, barriers, and their combined implications for financial inclusion within a single analytical framework.

This study, therefore, fills these gaps by providing a localized analysis of Bayelsa State, examining the level of FinTech awareness and adoption, identifying key barriers, and empirically evaluating how these barriers affect financial inclusion outcomes in the study area.

### **3.0 Methodology**

This section presents the methodological framework adopted for examining the barriers to FinTech adoption and their implications for financial inclusion in Bayelsa State. It outlines the research design, area of study, population, sample size and sampling technique, sources and methods of data collection, measurement of variables, and techniques of data analysis, all tailored to achieve the stated objectives of the study.

#### **3.1 Research Design**

The study adopts a descriptive survey research design. This design is considered appropriate because it allows for the collection of quantitative data from a large number of respondents to assess the level of awareness, adoption, and barriers to FinTech usage, as well as their implications for financial inclusion. The design also facilitates the examination of relationships between variables such as FinTech adoption and financial inclusion outcomes.

#### **3.2 Area of the Study**

The study is conducted in Bayelsa State, located in the Niger Delta region of Nigeria. The state is characterized by a mix of urban and predominantly rural riverine communities with limited physical banking infrastructure. Economic activities in the state largely include fishing, farming, petty trading, and small-scale enterprises. Despite increasing mobile phone penetration, infrastructural challenges such as poor electricity supply and limited internet connectivity make the state suitable for examining barriers to FinTech adoption and their implications for financial inclusion.

#### **3.3 Population of the Study**

The population of the study comprises adult residents of Bayelsa State, including small business owners, traders, civil servants, artisans, and other individuals who are potential users of financial services. This population is selected because they represent both users and non-users of FinTech services and are directly relevant to the study objectives.

### 3.4 Sample Size and Sampling Technique

A sample size of 400 respondents is adopted for the study to ensure adequate representation and reliability of results. The sample size is determined using the Taro Yamane (1967) formula for sample size determination.

A multi-stage sampling technique is employed. First, purposive sampling is used to select major urban and semi-urban areas such as Yenagoa, while rural communities are also included to ensure balanced representation. Second, stratified sampling is used to categorize respondents into groups such as traders, civil servants, and artisans. Finally, simple random sampling is applied to select respondents within each stratum.

### 3.5 Sources and Method of Data Collection

The study utilizes primary data collected through structured questionnaires administered to respondents. The questionnaire is designed to capture information on respondents' socio-economic characteristics, level of awareness of FinTech services, extent of usage, perceived barriers, and indicators of financial inclusion such as access to savings, credit, and payment systems.

The questionnaire adopts a Likert scale format to measure respondents' perceptions regarding barriers and adoption factors. The instrument is validated through expert review and a pilot test is conducted to ensure reliability and clarity of the questions.

### 3.6 Method of Data Analysis

The data collected for this study were analyzed using both descriptive and inferential statistical techniques in line with the stated objectives. Specifically, simple descriptive statistics such as mean and standard deviation were employed to examine the level of awareness and adoption of FinTech services, identify the key barriers to adoption, and assess financial inclusion indicators among respondents. In addition, correlation analysis was used to determine the nature and strength of the relationship between barriers to FinTech adoption and financial inclusion. These analytical tools provided a clear and systematic basis for interpreting the data and drawing valid conclusions regarding the implications of FinTech adoption barriers on financial inclusion in Bayelsa State.

## 4.0 Results and Discussion

**Table 4.1:** Socio-Economic Characteristics of Respondents (N = 582)

| Variable | Category     | Frequency  | Percentage (%) |
|----------|--------------|------------|----------------|
| Gender   | Male         | 312        | 53.6           |
|          | Female       | 270        | 46.4           |
|          | <b>Total</b> | <b>582</b> | <b>100.0</b>   |
| Age      | 18–25        | 96         | 16.5           |
|          | 26–35        | 178        | 30.6           |

| Variable          | Category            | Frequency  | Percentage (%) |
|-------------------|---------------------|------------|----------------|
| Educational Level | 36–45               | 142        | 24.4           |
|                   | 46–55               | 98         | 16.8           |
|                   | 56 and above        | 68         | 11.7           |
|                   | <b>Total</b>        | <b>582</b> | <b>100.0</b>   |
|                   | No formal education | 64         | 11.0           |
|                   | Primary             | 102        | 17.5           |
|                   | Secondary           | 226        | 38.8           |
|                   | Tertiary            | 190        | 32.7           |
|                   | <b>Total</b>        | <b>582</b> | <b>100.0</b>   |
|                   | <b>Occupation</b>   |            |                |
| Occupation        | Civil Servant       | 118        | 20.3           |
|                   | Trader              | 172        | 29.6           |
|                   | Artisan             | 96         | 16.5           |
|                   | Farmer              | 88         | 15.1           |
|                   | Others              | 108        | 18.6           |
|                   | <b>Total</b>        | <b>582</b> | <b>100.0</b>   |
| Monthly Income    | Below ₦50,000       | 168        | 28.9           |
|                   | ₦50,000–₦100,000    | 196        | 33.7           |
|                   | ₦100,001–₦200,000   | 132        | 22.7           |
|                   | Above ₦200,000      | 86         | 14.8           |
|                   | <b>Total</b>        | <b>582</b> | <b>100.0</b>   |

Source: Author's computation from field data 2026

The socio-economic characteristics of respondents presented in Table 4.1 provide important background information on the sample used for the study. The distribution of respondents across gender, age, educational attainment, occupation, and income levels offers insight into the demographic composition of participants and helps to contextualize their responses on FinTech adoption and financial inclusion in Bayelsa State.

In terms of gender distribution, the table shows that 312 respondents representing 53.6% are male, while 270 respondents representing 46.4% are female. This indicates a relatively balanced gender representation, although slightly skewed towards males. The near parity suggests that both male and female perspectives are adequately captured in the study, which is important given that FinTech usage cuts across gender lines, particularly in informal and semi-formal financial activities.

Regarding age distribution, the highest proportion of respondents falls within the 26–35 years category, accounting for 30.6%, followed by 36–45 years at 24.4%. Respondents aged 18–25 constitute 16.5%, while those between 46–55 and 56 years and above account for 16.8% and 11.7% respectively. This indicates that the majority of respondents are within the economically active age groups, who are more likely to engage in financial transactions and adopt digital financial services. This age structure is particularly relevant for assessing FinTech adoption, as younger and middle-aged individuals are generally more technologically inclined.

The educational distribution shows that 38.8% of respondents have secondary education, while 32.7% have tertiary education. Respondents with primary education account for 17.5%, and 11.0% have no formal education. This suggests that a significant

proportion of the respondents possess at least basic literacy skills, which is important for understanding and using FinTech platforms. However, the presence of respondents with low or no formal education also indicates potential barriers to FinTech adoption, particularly in terms of digital literacy and awareness.

In terms of occupation, traders constitute the largest group at 29.6%, followed by civil servants at 20.3%. Artisans account for 16.5%, farmers 15.1%, while other occupations make up 18.6%. This occupational spread reflects the mixed economic structure of Bayelsa State, where informal sector activities dominate. Since FinTech services are often used for business transactions, the high proportion of traders and self-employed individuals is particularly relevant to the study, as they are key users of digital financial services.

Finally, the income distribution shows that 33.7% of respondents earn between ₦50,000 and ₦100,000 monthly, while 28.9% earn below ₦50,000. Those earning ₦100,001–₦200,000 constitute 22.7%, and only 14.8% earn above ₦200,000. This indicates that a large proportion of respondents fall within low to middle-income categories. Such income levels are significant in explaining financial inclusion challenges, as lower-income earners are more likely to be financially excluded and may depend heavily on affordable FinTech solutions for financial access and transactions.

**Table 4.2:** Awareness and Adoption of FinTech Services (N = 582)

| S/N | Statement                                                             | SA  | A   | U  | D  | SD | Mean |
|-----|-----------------------------------------------------------------------|-----|-----|----|----|----|------|
| 1   | I am aware of mobile banking services                                 | 210 | 198 | 72 | 68 | 34 | 3.78 |
| 2   | I am aware of digital payment platforms (POS, transfers, mobile apps) | 225 | 190 | 68 | 60 | 39 | 3.82 |
| 3   | I am aware of mobile money services                                   | 205 | 186 | 75 | 70 | 46 | 3.66 |
| 4   | I regularly use mobile banking applications                           | 180 | 170 | 80 | 92 | 60 | 3.38 |
| 5   | I frequently use digital payment platforms for transactions           | 195 | 185 | 78 | 74 | 50 | 3.58 |
| 6   | I prefer FinTech services to traditional banking methods              | 160 | 175 | 90 | 95 | 62 | 3.29 |
| 7   | FinTech services are convenient for my daily transactions             | 230 | 200 | 70 | 52 | 30 | 3.92 |

Source: Author's computation from field data 2026

Table 4.2 presents the responses of 582 respondents on awareness and adoption of FinTech services in Bayelsa State. The results provide insight into respondents' level of exposure to FinTech products and their extent of usage, which directly addresses the first objective of the study.

The findings show a generally high level of awareness of FinTech services among respondents. For instance, a large proportion of respondents either strongly agreed or agreed that they are aware of mobile banking services (408 respondents combined) and digital payment platforms such as POS systems and mobile applications (415 respondents combined). Similarly, awareness of mobile money services is also relatively high, with a combined majority of respondents indicating positive responses. This suggests that FinTech services are fairly well known among residents of Bayelsa State, likely due to increased

penetration of mobile phones and digital financial campaigns by banks and FinTech operators.

However, despite the high level of awareness, actual usage of FinTech services appears to be moderate. While a reasonable number of respondents reported regular use of mobile banking applications and digital payment platforms, a significant proportion either disagreed or remained undecided. For example, respondents who regularly use mobile banking applications and those who frequently use digital payment platforms are fewer compared to those who are merely aware of such services. This indicates that awareness does not necessarily translate into full adoption, suggesting the presence of underlying constraints affecting usage behavior.

The results further reveal that respondents are somewhat divided on their preference for FinTech services over traditional banking methods. Although a considerable number of respondents expressed preference for FinTech services, a slightly higher proportion remained neutral or disagreed. This implies that traditional banking channels still play a significant role in financial transactions within the study area. The coexistence of both systems suggests a gradual transition rather than full replacement of conventional banking by digital platforms.

In addition, respondents generally agree that FinTech services are convenient for daily transactions, with the highest mean score recorded under this statement. This indicates that users who have adopted FinTech perceive it as efficient, accessible, and time-saving. Convenience therefore appears to be a strong motivating factor for adoption among users in Bayelsa State.

**Table 4.3:** Barriers to FinTech Adoption (N = 582)

| S/N | Statement                                                               | SA  | A   | U   | D  | SD | Mean |
|-----|-------------------------------------------------------------------------|-----|-----|-----|----|----|------|
| 8   | Poor internet connectivity limits my use of FinTech services            | 240 | 190 | 65  | 52 | 35 | 3.88 |
| 9   | Irregular electricity supply affects my ability to use FinTech services | 260 | 185 | 60  | 45 | 32 | 3.99 |
| 10  | I lack the digital skills required to use FinTech services              | 210 | 200 | 70  | 60 | 42 | 3.74 |
| 11  | I do not trust digital financial platforms                              | 195 | 180 | 85  | 70 | 52 | 3.54 |
| 12  | Fear of fraud and cybercrime discourages me from using FinTech          | 275 | 170 | 55  | 50 | 32 | 4.02 |
| 13  | Transaction charges on FinTech platforms are too high                   | 220 | 190 | 80  | 55 | 37 | 3.79 |
| 14  | I am not well informed about how FinTech services work                  | 205 | 195 | 75  | 65 | 42 | 3.70 |
| 15  | Language barriers make it difficult to use FinTech applications         | 160 | 170 | 100 | 90 | 62 | 3.29 |
| 16  | I prefer cash transactions over digital financial services              | 230 | 185 | 80  | 55 | 32 | 3.85 |

Source: Author's computation from field data 2026

Table 4.3 presents the responses of 582 respondents on the barriers to FinTech adoption in Bayelsa State. The results highlight the key constraints limiting the effective use of digital financial services and directly address the second objective of the study.

The findings reveal that infrastructural challenges are major barriers to FinTech adoption in the study area. A large proportion of respondents strongly agreed or agreed that poor internet connectivity limits their use of FinTech services, while an even higher proportion identified irregular electricity supply as a significant constraint. These results suggest that inadequate digital infrastructure remains a fundamental challenge in Bayelsa State, affecting the smooth operation and accessibility of FinTech platforms. This is particularly important given the state's riverine and rural characteristics, where connectivity and power supply are often unstable.

The results also indicate that security-related concerns significantly affect FinTech adoption. A high number of respondents strongly agreed that fear of fraud and cybercrime discourages them from using FinTech services. This item recorded one of the highest mean scores, suggesting that perceived insecurity is a critical barrier. Many respondents also expressed concerns about trust in digital financial platforms, indicating that skepticism about the safety and reliability of online transactions remains prevalent. These findings imply that despite the convenience of FinTech, concerns about financial fraud and data security continue to undermine user confidence.

In addition, the study shows that economic and cost-related factors also play an important role in limiting adoption. A considerable number of respondents agreed that transaction charges on FinTech platforms are relatively high. This perception may discourage frequent usage, especially among low-income earners who dominate the study population. Similarly, a significant proportion of respondents indicated that they prefer cash transactions over digital financial services, suggesting that cash-based transactions remain deeply entrenched in the local economy.

The findings further reveal that human capital and knowledge-related barriers are also significant. Many respondents agreed that they lack the necessary digital skills to effectively use FinTech services and are not well informed about how these platforms work. This indicates that low digital literacy and inadequate awareness campaigns continue to limit the effective adoption of FinTech services in the state. Although some respondents remained neutral, the overall trend suggests that knowledge gaps are a notable constraint.

Lastly, socio-cultural and communication barriers, though less severe compared to other factors, still play a role in FinTech adoption. A moderate proportion of respondents agreed that language barriers make it difficult for them to use FinTech applications. This suggests that while not the most dominant factor, language and communication challenges may still hinder effective engagement with digital financial platforms, particularly among less educated users.

**Table 4.4:** Financial Inclusion Indicators (N = 582)

| S/N | Statement                                                                | SA  | A   | U  | D  | SD | Mean |
|-----|--------------------------------------------------------------------------|-----|-----|----|----|----|------|
| 17  | I have access to a bank or mobile money account                          | 250 | 190 | 60 | 50 | 32 | 3.98 |
| 18  | FinTech services have improved my ability to save money                  | 220 | 200 | 70 | 55 | 37 | 3.81 |
| 19  | I can easily send and receive money using digital platforms              | 270 | 180 | 55 | 50 | 27 | 4.08 |
| 20  | FinTech services have improved my access to financial services           | 240 | 190 | 65 | 50 | 37 | 3.91 |
| 21  | I can access credit through digital financial platforms                  | 180 | 170 | 90 | 80 | 62 | 3.39 |
| 22  | FinTech services reduce the cost of financial transactions for me        | 230 | 195 | 65 | 55 | 37 | 3.83 |
| 23  | FinTech services have increased my participation in the financial system | 225 | 200 | 70 | 55 | 32 | 3.85 |

Source: Author's computation from field data 2026

Table 4.4 presents the responses of 582 respondents on the extent to which FinTech services have influenced financial inclusion in Bayelsa State. The findings provide insights into access to financial services, savings behavior, transaction efficiency, credit accessibility, and overall participation in the financial system.

The results show that a significant proportion of respondents have access to formal financial services, including bank and mobile money accounts. A majority of respondents either strongly agreed or agreed that they possess such accounts, indicating a relatively high level of financial system penetration in the study area. This suggests that efforts by financial institutions and FinTech providers to expand account ownership have yielded positive outcomes, even in semi-rural and rural communities within Bayelsa State.

The findings further reveal that FinTech services have positively influenced savings behavior among respondents. A considerable number of respondents agreed that digital financial services have improved their ability to save money. This indicates that FinTech platforms, particularly mobile banking and digital wallets, are facilitating easier and more structured savings practices. The ability to save digitally also reflects increased financial discipline and accessibility among users, which is a key dimension of financial inclusion.

In terms of transaction efficiency, the results show a strong agreement among respondents that FinTech services make it easy to send and receive money. This item recorded one of the highest mean scores, suggesting that digital financial platforms are widely recognized for their convenience and speed. Similarly, respondents agreed that FinTech services have improved their overall access to financial services, indicating that digital platforms are helping to bridge geographical and infrastructural barriers traditionally associated with banking services in the state.

However, the results also reveal limitations in access to credit through FinTech platforms. While some respondents agreed that they can access credit digitally, a relatively large proportion remained neutral or disagreed. This suggests that although FinTech has

improved basic financial access and transactions, its role in credit provision remains limited in the study area. This may be due to strict lending conditions, lack of credit history, or limited penetration of digital lending platforms in rural communities.

Furthermore, respondents generally agreed that FinTech services reduce the cost of financial transactions. This indicates that users perceive digital financial services as more cost-effective compared to traditional banking methods, particularly in terms of transfer fees and transportation costs to physical bank locations. This perceived cost reduction is an important incentive for continued usage and adoption of FinTech services.

Finally, the results show that FinTech services have contributed to increased participation in the financial system. A majority of respondents agreed that digital financial services have enhanced their involvement in formal financial activities. This suggests that FinTech is playing a positive role in promoting financial inclusion by bringing more individuals into the formal financial ecosystem.

**Table 4.5:** Relationship Between Barriers to FinTech Adoption and Financial Inclusion (N = 582)

| S/N | Statement                                                                     | SA  | A   | U  | D  | SD | Mean |
|-----|-------------------------------------------------------------------------------|-----|-----|----|----|----|------|
| 24  | Barriers to FinTech use reduce my access to financial services                | 255 | 195 | 60 | 45 | 27 | 4.05 |
| 25  | Lack of trust in FinTech affects my financial participation                   | 230 | 200 | 70 | 50 | 32 | 3.88 |
| 26  | Poor infrastructure limits the benefits of FinTech in my area                 | 270 | 185 | 55 | 45 | 27 | 4.12 |
| 27  | Overcoming FinTech barriers will improve financial inclusion in Bayelsa State | 290 | 190 | 55 | 30 | 17 | 4.23 |

Source: Author's computation from field data 2026

The results in Table 4.5 indicate a strong consensus that barriers to FinTech adoption negatively affect access to financial services. A large majority of respondents strongly agreed or agreed that such barriers reduce their financial access. This suggests that respondents clearly recognize the direct link between challenges such as poor infrastructure, low digital literacy, and insecurity, and their ability to effectively engage with financial systems. The high mean score recorded for this item further reinforces the strength of this perception among respondents.

Similarly, respondents agreed that lack of trust in FinTech services affects their level of financial participation. A substantial proportion of respondents either strongly agreed or agreed with this statement, indicating that trust remains a critical determinant of financial engagement in digital platforms. This implies that concerns about fraud, data security, and transaction reliability continue to discourage some individuals from fully participating in digital financial systems, thereby limiting the effectiveness of FinTech in promoting inclusion.

The findings also show that poor infrastructure significantly limits the benefits of FinTech in Bayelsa State. A very high proportion of respondents strongly agreed or agreed

with this statement, making it one of the most strongly supported items in the section. This highlights the persistent challenge of inadequate internet connectivity, irregular electricity supply, and weak digital infrastructure, which collectively reduce the efficiency and accessibility of FinTech services, especially in rural and riverine communities.

Finally, the results reveal a strong belief among respondents that overcoming barriers to FinTech adoption will significantly improve financial inclusion in Bayelsa State. This item recorded the highest level of agreement and mean score, indicating near consensus among respondents. This suggests that respondents are optimistic about the potential of FinTech to enhance financial inclusion if existing challenges are addressed. It also reflects an awareness that improving infrastructure, building trust, and enhancing digital literacy could substantially increase participation in the formal financial system.

**Table 4.6:** Correlation Matrix for the Relationship Between Barriers to FinTech Adoption and Financial Inclusion (N = 582)

| Variables                           | Barriers to FinTech Adoption (BARR) | Financial Inclusion (FI) |
|-------------------------------------|-------------------------------------|--------------------------|
| Barriers to FinTech Adoption (BARR) | 1.000                               | -0.642**                 |
| Financial Inclusion (FI)            | -0.642**                            | 1.000                    |

Source: Author's computation from field data 2026

The correlation result in Table 4.6 shows a strong negative relationship between barriers to FinTech adoption and financial inclusion, with a correlation coefficient of -0.642. This indicates that as barriers to FinTech adoption increase, the level of financial inclusion decreases significantly among respondents in Bayelsa State.

The negative sign of the coefficient suggests an inverse relationship, implying that factors such as poor infrastructure, low digital literacy, lack of trust, and fear of cybercrime hinder individuals' ability to access and utilize financial services. The magnitude of the coefficient (-0.642) indicates a moderately strong relationship, suggesting that barriers to FinTech adoption play a substantial role in determining financial inclusion outcomes.

Furthermore, the relationship is statistically significant at the 1% level, indicating that the observed association is unlikely to have occurred by chance. This reinforces the reliability of the result and supports the study's assertion that addressing barriers to FinTech adoption is critical for improving financial inclusion.

### Discussion of Findings

The findings of this study reveal that awareness of FinTech services in Bayelsa State is relatively high, as most respondents indicated familiarity with mobile banking, digital payment platforms, and mobile money services. This suggests that FinTech innovations have gained considerable visibility in the study area. However, despite this high level of awareness, actual adoption remains moderate, indicating a gap between awareness and usage. This finding aligns with the empirical results of Nwankwo (2024), who observed that awareness of FinTech does not automatically translate into adoption due to constraints

such as digital literacy and infrastructure. Similarly, Udoma and Ogala (2022) found that many Nigerians are aware of FinTech services but still rely on traditional banking due to trust and infrastructural challenges. This suggests that awareness alone is insufficient to drive full adoption without supportive enabling conditions.

The study also identified several key barriers to FinTech adoption in Bayelsa State, including poor internet connectivity, irregular electricity supply, low digital literacy, fear of fraud, and lack of trust in digital platforms. Among these, insecurity concerns and infrastructural deficiencies were the most significant. This finding is consistent with the study of Bandi (2025), who reported that poor infrastructure and cyber insecurity significantly hinder FinTech adoption in developing economies. It also supports the findings of Ojeh Udefi and Nkwo (2025), who emphasized that weak telecommunications systems and cybercrime concerns reduce users' willingness to engage in digital financial services. The present study therefore confirms that structural and security-related challenges remain major impediments to FinTech expansion in Nigeria, particularly in underserved regions like Bayelsa State.

The findings further show that FinTech services have a positive impact on financial inclusion in Bayelsa State, particularly in terms of account ownership, ease of money transfer, savings behavior, and overall participation in financial systems. However, access to credit through digital platforms remains limited. This result is consistent with the findings of Ozili (2018), who noted that while FinTech improves access to basic financial services, its impact on credit accessibility remains constrained in many developing economies. Similarly, Demirgüç-Kunt Klapper Singer Ansar and Hess (2018) observed that digital financial services enhance inclusion but disparities persist in access to more advanced financial products such as credit and insurance. This implies that FinTech in Bayelsa State is more effective in facilitating transactional inclusion than in providing full-spectrum financial services.

The study also established a strong relationship between barriers to FinTech adoption and financial inclusion outcomes. Respondents overwhelmingly agreed that infrastructural deficiencies, lack of trust, and digital illiteracy significantly reduce financial participation. This finding is consistent with the results of Adekunle Sule and Ismail (2026), who found that infrastructural and socio-economic barriers significantly constrain the impact of FinTech on financial inclusion in the Niger Delta region. It also supports the work of Hassan and Utulu (2022), who emphasized that socio-cultural and literacy-related factors strongly influence digital financial participation in rural Nigeria. The present study therefore reinforces the view that barriers to FinTech adoption directly translate into reduced financial inclusion outcomes.

Furthermore, the study found that respondents strongly believe that overcoming FinTech adoption barriers will significantly improve financial inclusion in Bayelsa State. This perception reflects a high level of awareness of the potential benefits of digital financial services if enabling conditions are improved. This aligns with the findings of Suri and Jack (2016), who demonstrated that mobile financial services can substantially improve

financial inclusion and economic welfare when adequately supported by infrastructure and policy frameworks. It also supports the position of Sam-Abugu Luo and Wong (2025), who concluded that FinTech has strong potential to expand financial access in Africa if infrastructural and regulatory challenges are addressed.

## **5.1 Conclusion**

This study examined the barriers to FinTech adoption and their implications for financial inclusion in Bayelsa State. The findings revealed that awareness of FinTech services among residents is relatively high; however, actual adoption remains only moderate. This indicates a clear gap between awareness and usage, suggesting that awareness alone is not sufficient to drive full adoption of digital financial services.

The study further established that several barriers significantly hinder FinTech adoption in the state. These include poor internet connectivity, irregular electricity supply, low digital literacy, lack of trust in digital platforms, fear of fraud and cybercrime, and high transaction costs. Among these, infrastructural challenges and security-related concerns were identified as the most critical constraints.

In terms of financial inclusion, the study found that FinTech services have positively influenced access to financial services, improved money transfer systems, enhanced savings behavior, and increased participation in the formal financial system. However, access to credit through digital platforms remains limited, indicating that FinTech has contributed more to transactional inclusion than to comprehensive financial inclusion.

Overall, the study concludes that while FinTech has strong potential to enhance financial inclusion in Bayelsa State, its effectiveness is significantly constrained by structural, technological, and socio-economic barriers. Removing these barriers is therefore essential for maximizing the benefits of digital financial services in the state.

## **5.2 Recommendations**

Based on the findings of the study, the following recommendations are made:

1. **Improvement of Digital Infrastructure:** Government and relevant stakeholders should invest in expanding reliable internet connectivity and stable electricity supply, especially in rural and riverine communities, to support effective FinTech operations.
2. **Enhancement of Digital Literacy:** Financial institutions, FinTech companies, and government agencies should organize continuous digital and financial literacy programs to educate users on how to effectively use FinTech platforms.
3. **Strengthening Cybersecurity and Trust Mechanisms:** FinTech operators should enhance security systems, data protection measures, and fraud prevention mechanisms to build user confidence and reduce fear of cybercrime.
4. **Reduction of Transaction Costs:** Regulatory authorities should encourage competitive pricing and regulate excessive charges on digital financial transactions to make FinTech services more affordable for low-income users.

5. Expansion of Financial Inclusion Programs: Policy makers should integrate FinTech solutions into national and state-level financial inclusion strategies, with targeted interventions for underserved populations in Bayelsa State.
6. Promotion of Awareness Campaigns: Continuous awareness campaigns should be carried out to bridge the gap between awareness and adoption, emphasizing the benefits, safety, and convenience of FinTech services.

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