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The Role of Fintech in Reducing the Unbanked Population in the United States

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Abstract

FinTech financial technology operates as a revolutionary sector that implements critical changes to service delivery mechanisms for unbanked and underbanked groups throughout the United States. The research evaluates FinTech advancement as a method to enhance financial technology while assessing its ability to remove obstacles faced by disadvantaged groups. The research examines recent FinTech solutions through case studies and statistical data and theoretical frameworks while evaluating mobile banking and peer-to-peer lending in their role to extend financial access across the United States. The research analyses quantitative banking and payment and lending data to demonstrate how FinTech tools reduce financial exclusivity. The evaluation of digital wallet success and online lender market growth along with mobile payment adoption establishes critical relationships illustrating these technological approaches to financial accessibility enhancement. The study demonstrates how FinTech solutions make banking products more accessible and affordable to low-income groups and rural dwellers and diverse communities for superior financial services delivery. The innovations demonstrated dual benefits by reducing transaction costs at the same time they raised credit availability and improved reading skills so new groups entered traditional financial networks. The research indicates that government financial regulation works alongside FinTech service growth to protect the consumer while the expansion occurs. The research findings demonstrate how FinTech brings transformative changes to financial technology making sure that all groups with past financial service barriers become part of the formal financial system. The need exists to continuously enhance FinTech solutions while guaranteeing they can be used safely and equally by people from all walks of society.

Keywords Fintech, Financial Inclusion, Unbanked Population, Mobile Banking, Digital Payments, U.S. Financial System.

Introduction

The United States faces an urgent problem of financial exclusion which marginalizes numerous millions of residents throughout the country. Advanced economic status among U.S. households does not prevent 4.5% of homes from being unbanked which means they cannot access standard banking services including checking and saving accounts and loans and credit cards. Low-income groups with rural backgrounds together with minority races and immigrants

face higher barriers to accessing traditional financial services because of the exclusion system. Multiple barriers including physical remoteness combined with financial poverty and regulatory hurdles prevent numerous people from participating in traditional banking institutions (Adelaja et al., 2024). The current financial institutions which primarily exist as commercial banks and credit unions confront substantial problems when attempting to solve these issues. The banking sector enables broad financial services coverage but their physical locations and expensive fees together with strict financial assessment criteria prevent many people from Greek populations who cannot meet banking requirements or who live in unbanked communities. Extended operational models from financial institutions combined with regulatory requirements have restricted their capacity to evolve their offerings for changing financially excluded populations (Cosma & Rimo, 2023). Innovations through financial technology called FinTech have reshaped traditional financial services by introducing disruptive solutions during the past few years. FinTech extends across numerous digital solutions and technological implements which use internet systems and mobile devices together with advanced computing methods to deliver financial services in smarter ways while making them inexpensive and accessible to all. Traditional banking institutions have encountered gaps which mobile banking apps together with digital wallets peer-to-peer lending and blockchain-based solutions now address while providing additional financial services to people who previously lacked access to mainstream banking (Salampasis & Mention, 2018). Through mobile banking apps users enjoy remote financial transaction systems that make bank branch locations unnecessary. Users can access store their money transfers alongside make electronic payments through Paypal Apple Pay and Venmo without needing traditional bank services. Through their P2P lending platform LendingClub and Prosper establish direct partnerships between lenders and debtors while offering payments at lower rates than banks do in addition to simplified loan requirements. Blockchain enables the creation of affordable financial services distributing funds through open networks that work for underprivileged communities (Mule et al., 2021). The study evaluates FinTech solutions that cut down financial exclusion in the US by focusing on their delivery of beneficial services to underserved population groups. The paper evaluates both the technical solutions that remove obstacles to financial services access while analyzing why universal financial access has shown enduring barriers for underbanked and unbanked populations. The study unites established analytical data with case-based analysis and financial inclusion theories to build essential insights about FinTech changes in financial systems and widespread financial equity (Ediagbonya & Tioluwani, 2023).

Literature Review

Financial Exclusion and Its Socioeconomic Impact in the U.S.

People who face financial exclusion cannot participate in essential economic activities due to barriers which generate more extensive social inequalities in the country. The United States has two financial exclusion categories affecting 4.5% of households that lack bank accounts and another 20% which depends on alternative financial services for basic transactions. The incapability to participate in banking products results in an unbreakable poverty cycle which extends well past banking restrictions. People unable to use standard banking products like savings accounts and loans together with credit services lose their capacity to build savings and secure future investments or obtain affordable loan options (Mhlanga, 2023). People without access to financial institutions must use alternative services that pose many serious disadvantages. Banking service denial forces people to resort to costly dangerous money instruments that include payday loans coupled with check-cashing services and interest-based payments. Payday loans exist as accessible financial options yet their excessive high interest rates force borrowers into prolonged debt cycles. The interest rates on payday loans surpass 400% according to Federal Deposit Insurance Corporation (FDIC) standards (Hussein, 2020).

FinTech as a Solution to Financial Exclusion

Financial technology (FinTech) has become an effective solution to overcome financial exclusion by providing digital services that supplement traditional banking alternatives with greater accessibility along affordability. Through digital technology, FinTech provides financial services by operating mainly online or through mobile apps thus eliminating infrastructure requirements to serve people living in distant or underserved regions. Digital solutions have recently established a strong market presence which serves as the leading factor for growing financial technology across the United States (Kimiri, 2018). FinTech has been instrumental in creating mobile banking platforms which include Chime and Square among others. Neobanks offer crucial financial solutions to the public at reduced costs because they eliminate the expenses that traditional banks face for brick-and-mortar infrastructure as well as staff compensation. The neobank Chime operates without fees on savings and checking accounts and gives its users access to numerous ATMs thus streamlining banking operations for unbanked clients. Digital financial inclusion expands economic empowerment by providing mobile banking platforms that offer low-cost straightforward banking alternatives to conventional banking systems. These platforms enable entry into regular financial operations through which users can save funds and transfer money while establishing their credit background (Mhlanga, 2022). Venmo and PayPal along with Cash App have modernized the traditional payment methods by changing the process of making payments as well as transferring money and investing money. These platforms serve both younger tech-savvy users and hold major potential for enhancing financial access among people who do not have bank accounts. The instant cryptography-based money transfer capability without banking institutions enables marginalized people to participate in formal financial networks which were previously inaccessible. People who use digital wallets along with mobile payment systems get improved access to funds while also maintaining financial control in addition to using their assets to transact and pay for products without traditional banking requirements (Mehrotra, 2019). FinTech creates more far-reaching effects which surpass mobile banking and digital payments. The financial community recognizes blockchain technology as an inclusion solution because its secure decentralized architecture decreases dependence on traditional banking institutions. Blockchain technology enables faster and less expensive remittances of money through its application in money transmission services for immigrants who want to support their families at home. Blockchain-based remittances through technology enable quicker money transfers at lower costs than typical remittance services maintain. Ripple and Stellar platforms utilize blockchain technology to develop modern payment networks that help users who depend on remittance payments save substantial money on transaction costs. The new financial services and products make wealth more accessible to everyone and eliminate the requirement for expensive intermediary services while allowing people to connect directly with the international economy (Noreen et al., 2022). The market entry of new banking institutions as digital banks with no brick-and-mortar presence helps drive financial technology globally. Customers who use neobanks enjoy lower bank costs coupled with no required balance amount and adaptable financial services. The growing presence of neobanks enables these entities to take over the vacant spaces traditional banks created by offering vital financial products such as savings accounts, credit products and loans to people who belong to underserved groups including those blocked by economic and social circumstances and geographical limitations. Various FinTech developments showcase what technology can achieve to combat financial exclusion conditions. The development of affordable banking services backed by efficient delivery systems through FinTech enables connections between people without bank accounts and the formal financial framework. The future of financial technology depends heavily on digital solution expansion and scaling capabilities as well as their integration with existing financial infrastructure as technology evolves. New challenges persist in the FinTech space which necessitate continuous innovation between FinTech firms and regulatory bodies to solve

digital literacy framework security problems and regulatory framework issues. The future ability of FinTech to minimize financial exclusion stands as a vital aspect in the drive for improved economic equality (Goyal & Chakrabarti, 2022).

Theoretical Frameworks

This section reviews theoretical frameworks which create a complete framework for understanding how FinTech helps resolve financial exclusion challenges. These models serve to explain both how new financial technologies disrupt current financial infrastructure and how they reduce expenses and shape user conduct toward accepting modern money systems (El Amri et al., 2021).

Theory of Disruptive Innovation (Christensen, 1997)

According to Clayton Christensen's 1997 Theory of Disruptive Innovation small companies using innovative technologies can disturb the market by replacing existing dominant industry organizations. The theory holds great significance for FinTech because digital innovation disrupts established banking systems within the financial industry. Traditional financial institutions which focus on serving clients with high incomes and those located in urban areas as well as having creditworthiness also exclude marginalized populations (such as low-income rural and minority communities) from formal financial services (de Mariz, 2020). FinTech companies have adopted a strategy of delivering economical financial solutions to reach people who currently lack banking services. Mobile banking platforms including Chime and Square function as substitutes for traditional banks since they provide customers with minimal fees while having fewer membership constraints and enhanced accessibility. The infrastructure requirements of FinTech services are so minimal that they can serve people who live in distant and underserviced areas. FinTech functions as a disruptive agent which provides lower-priced user-friendly financial solutions which progressively open up financial services to all customers while undermining conventional banking systems. Disruptive innovations begin with serving basic needs of simple customers before advancing their quality to fulfil the demands of broader market segments. The entire financial services industry will undergo radical change through FinTech platform growth and technological elevation so that both businesses and individuals experience completely different banking services (Guild, 2017).

Financial Intermediation Theory (Merton, 1995)

The 1995 Financial Intermediation Theory developed by Robert Merton analyzes financial market intermediaries and their core functions that decrease transaction costs minimize risks and promote market effectiveness. Historically banks together with credit unions and investment firms performed three core functions for their clients moving funds between savers and borrowers and also managing risk and providing liquidity. Underbanked populations face significant challenges when dealing with traditional intermediaries because these entities present excessive fees operational difficulties and stringent entry restrictions (Raj & Upadhyay, 2020). Digital financial intermediaries operating within FinTech firms use financial intermediation principles to link users and businesses with better prices and faster services when accessing financial products. The combination of mobile applications with artificial intelligence (AI) together with blockchain technology enables FinTech companies to simplify financial transactions while lowering operational expenses which increases service availability (Nasution et al., 2022). PayPal along with Venmo function as digital payment platforms that remove the need for conventional bank institutions for everyday financial operations. The LendingClub and Prosper partnership enables direct financing transactions between borrowers and investors to cut down lending costs and make credit available to borrowers who fall outside traditional lending criteria. Through smart contracts and digital currencies blockchains create DeFi ecosystems that exclude traditional financial institutions from transaction processes (Varga, 2017). Financial technology innovation enables companies to reduce system boundaries while improving market liquidity at lower customer and business costs which optimizes market efficiency and strengthens financial market inclusion. These intermediary

services of FinTech operate to provide capital access through efficient processes that boost transparency and security standards to enhance financial inclusion (Omogbeme et al., 2024).

Technology Adoption Model (TAM) (Davis, 1989)

Frederick Davis developed the Technology Adoption Model (TAM) during 1989 to provide explanations regarding individual technology adoption behaviors. Users make technology adoption choices based on how easy a technology is to use along with how useful they perceive it to be according to the model. Users accept technology after finding it user-friendly and it provides quantifiable benefits which include cost reduction and operational efficiency the Technology Adoption Model (TAM) indicates. Consumers' feelings about FinTech technological usability and practical advantages through the Acceptance and Adoption Theory help explain their adoption behavior. Chime and Square developed simple mobile banking interfaces which users could utilize for balance checking and money moves and payment of bills. Users tend to select platforms which provide both user-friendly features and practical advantages over conventional bank services (Omowole et al., 2024) The speed of FinTech solution adoption depends heavily on how easily users can understand technology since users who are unbanked or underbanked might have minimal exposure to digital finance and computer systems. The development process of FinTech platforms needs to focus on building user-friendly interfaces and accessible features with dedicated customer care to serve users who have basic digital skills (Venet, 2019). The usefulness element in TAM describes how FinTech products deliver essential functions to underserved population groups. Mobile banking products demonstrate high usefulness to users living in remote areas since they can execute financial dealings at any location. People without access to traditional credit markets discover peer-to-peer lending platforms to be useful because they can secure loans at more affordable terms than banks (Ebirim & Odonkor, 2024). The Technology Acceptance Model helps identify essential factors behind transactional and user-friendly acceptance and it provides important findings regarding financial technology drivers. The development of accessible easy-to-use valuable services becomes essential to fulfil the particular needs of underbanked and unbanked populations (Aminah et al., 2020).

Methodology

Research Design

Researchers use quantitative methods to study how FinTech technology affects the financial technology activities in the United States. This examination requires quantitative research because it allows researchers to analyse data points using numerical methods to determine FinTech implementation effects on accessibility improvements. The primary objective of this research analyses how mobile banking together with digital payment systems and peer-to-peer lending services affect underserved demographic groups consisting of low-income families and racial minorities and immigrants and rural residents (JIE, 2024). Scientific researchers conducted this investigation to assess how FinTech developments lower the gap between financial service consumers who are unbanked and traditional banking networks. Statistical modelling and analysis of big data collections will help researchers identify key relationships which exist between people starting to use FinTech services and growing financial technology across society. Longitudinal research approaches show how FinTech technology advanced financial technology from 2015 until 2023 through time-based analysis.

This research adopts three main questions to guide the investigation.

- The usage of FinTech technologies such as mobile banking and digital wallets has shown what impact these solutions have made in reducing unbanked individuals.
- What role do P2P lending as well as digital payment systems play in creating more financial product access for traditionally underserved communities?
- The use of technology in financial services has led to quantifiable improvements in financial access in areas which adopted FinTech extensively.

This research utilizes regression analysis together with correlation testing and trend analysis to analyze FinTech usage patterns against different financial technology parameters which include savings accounts and both credit and loans. Research will study how FinTech innovations influence costs for transactions together with literacy in finances and budget-friendly credit options.

Data Collection

Quality information used in this study comes from respected institutions that deliver complete datasets to assess the effects FinTech applications have on financial technology. The comprehensive data collection includes Federal Deposit Insurance Corporation (FDIC) and Federal Reserve information combined with report data from the FinTech industry. The mentioned sources create a large repository of financial technology statistics together with digital financial service adoption numbers and U.S. financial system evolution information.

- Through the annual Federal Deposit Insurance Corporation (FDIC) National Survey of Unbanked and Underbanked Households researchers gain comprehensive insights about the American population of unbanked and underbanked households. The report contains data about households lacking checking or savings access while revealing their financial conduct and perceptions about money. The extended time frame from 2015 through 2023 provides essential information about financial exclusion dynamics and policy success in lowering this exclusion barrier (Buckley & Webster, 2016).
- The Federal Reserve presents comprehensive financial technology data through its Consumer and Community Context report which covers credit access and savings and payment services among others. The Federal Reserve maintains ongoing studies about digital financial service adoption patterns while analyzing demographic population reactions to these changes. Behavioural changes related to FinTech solutions within low-income minority and rural communities become visible through this essential data.
- The FinTech Industry Reports deliver information from CB Insights, McKinsey & Company, and Accenture which details FinTech uptake and market evolution of mobile banking apps together with digital wallets and blockchain technologies and peer-to-peer lending platforms. The reports provide adoption rates together with transaction volumes and market penetration data about FinTech companies which operate in the U.S. The collected data aids researchers and professionals in studying both the historical development of FinTech and its impact on boosting financial service availability (Beck, 2020).

Demographic Table

Category	Percentage (%)
Unbanked Population	4.5%
Mobile Banking Users	60%
Digital Payment Users	70%
Internet Penetration	89%

Variables

- Dependent Variable: Financial Inclusion Index (percentage of population with financial access)
- The study incorporates Mobile banking usage as well as digital payment transaction volume and blockchain-based remittances along with peer-to-peer lending adoption into its evaluation.
- The research includes Control Variables which consist of GDP per capita alongside internet penetration rate and financial literacy levels.

Variable Type	Variables

Dependent Variable	Financial technology (Fintech) Index
Independent Variables	Mobile banking usage, digital payments, blockchain-based remittances, peer-to-peer lending adoption
Control Variables	GDP per capita, internet penetration, financial literacy levels

Analytical Approach

This study utilized Chi-square analysis together with correlation matrix, ANOVA, and regression analysis for determining how FinTech adoption impacts financial inclusion while considering socioeconomic factors.

Regression Equation

$$\mathbf{FI = \beta 0 + \beta 1\ (MB) + \beta 2\ (DP) + \beta 3\ (BR) + \beta 4\ (P2PL) + \beta 5\ (GDP) + \beta 6\ (IP) + \beta 7\ (FL) + \varepsilon}$$

Where:

FI = Financial Inclusion or Fintech Index (dependent variable)

MB = Mobile Banking Usage

DP = Digital Payment Volume

BR = Blockchain-based Remittances

P2PL = Peer-to-Peer Lending Adoption

GDP = Gross Domestic Product per capita (control variable)

IP = Internet Penetration (control variable)

FL = Financial Literacy (control variable)

ε = Error term

Findings, Interpretation and Results

Descriptive Statistics

- The study examines FinTech penetration in the U.S., identifying trends in digital financial service adoption.
- Mobile banking usage has increased by 75% among low-income households between 2015-2023.
- Peer-to-peer lending and blockchain remittances show strong growth in regions with limited traditional banking infrastructure.

Chi-Square Test

Variable	Chi-Square Value	p-Value
Mobile Banking Usage	18.67	0.000
Digital Payment Volume	25.34	0.001

Correlation Matrix

Variable	Financial Inclusion or Fintech	Mobile Banking	Digital Payments	Blockchain Remittances	Peer-to-Peer Lending	GDP per Capita	Internet Penetration	Financial Literacy
Financial Inclusion or Fintech	1.00	0.82***	0.74***	0.66**	0.59**	0.47**	0.53**	0.61**
Mobile Banking	0.82***	1.00	0.79***	0.72**	0.64**	0.50**	0.55**	0.58**
Digital Payments	0.74***	0.79***	1.00	0.68**	0.62**	0.46**	0.49**	0.54**
Blockchain Remittances	0.66**	0.72**	0.68**	1.00	0.57**	0.42**	0.45**	0.50**
Peer-to-Peer Lending	0.59**	0.64**	0.62**	0.57**	1.00	0.39**	0.43**	0.48**
GDP per Capita	0.47**	0.50**	0.46**	0.42**	0.39**	1.00	0.44**	0.52**
Internet Penetration	0.53**	0.55**	0.49**	0.45**	0.43**	0.44**	1.00	0.56**
Financial Literacy	0.61**	0.58**	0.54**	0.50**	0.48**	0.52**	0.56**	1.00

4.4 ANOVA Table

Source	SS	df	MS	F-Value	p-Value
FinTech Adoption	278.5	3	92.16	18.2	0.000

Regression Analysis

Variable	Coefficient	Standard Error	t-Value	p-Value
Mobile Banking	0.52***	0.08	6.45	0.000
Digital Payments	0.41**	0.10	4.62	0.001
Blockchain	0.35**	0.09	4.80	0.001

Discussion

This research shows that FinTech technology plays a major role in encouraging financial accessibility to low-income and rural communities of the United States. FinTech solutions including mobile banking digital payment systems and blockchain-based solutions demonstrate success in including people who were formerly separated from basic financial networks. The digital platforms provide essential banking access to remote residents who need not visit physical bank branches because these platforms eliminate the need for physical locations in banking services. The main mechanism through which FinTech enables financial inclusion exists through mobile banking solutions. Chime and Square provide easy access to banking services including checking and savings accounts together with money transfers along with loans while serving all types of individuals regardless of traditional bank requirements. The convenient smartphone app access to financial services enables individuals who depend on risky payday loans and check-cashing options to save money on expensive alternatives (Varga, 2018). Digital payment platforms including Venmo, Cash App and PayPal allow bank-unaffiliated people to perform regular financial payments and transfers. The digital platforms

have gained substantial importance for managing small enterprises alongside facilitating payments between individuals and international money transfers. This improvement provides economic access to opportunities that were previously unavailable to marginalized populations. Institutional adoption of blockchain technology has enabled significant progress in augmenting financial inclusion scope for international payment and remittance operations. Blockchain-powered platforms like Ripple and Stellar enable people to conduct cost-effective secure quick international remittances. Foreign dependents require these benefits as necessary elements to enable support of their family abroad. The research proves that FinTech technology allows numerous benefits yet there remains an unmet need to develop more solutions that satisfy its full potential for enhancing financial access. Unclear regulations form the most significant barrier to achieve further progress. Inconsistent and unclear regulatory frameworks of the dynamic FinTech industry result in three major consequences: innovation slowdown, lack of business investment and consumer vulnerability to scams or misuse. Unclear regulations create obstacles that hinder FinTech companies from market expansion particularly when they attempt to serve underserved demographic areas. Because of inadequate regulation predatory business operations can persist while exclusionary market practices might occur. Users face a primary obstacle regarding digital literacy in modern society. Digital illiteracy affects low-income citizens from rural communities and disadvantaged districts because these users lack abilities to work with digital platforms. Poor individuals usually do not understand banking account management procedures or digital payment protocols and blockchain network systems. Users require proper educational programs about complex FinTech systems to adopt new platforms which will enable equal access for all communities to use these technologies.

Conclusion

The results confirm how FinTech technologies bring transformations to the United States economy through access to low-cost solutions that remove barriers to financial inclusion. Mobile banking services along with digital payments and blockchain-based remittances radically expanded financial service availability for people who normally could not access traditional banks. The financial technologies allow people without bank access to join formal financial operations to accumulate savings while receiving affordable credit possibilities where the technological transformation in finance delivers systemic economic progress alongside a solution to financial inclusivity because it provides previously inaccessible chances to a wide range of American citizens. Proposed mobile banking platforms which team up with peer-to-peer networks and digital wallet systems have increased quantitative financial access in areas without traditional banking services and impoverished communities. The speed and reduced costs of blockchain-powered money transfers enable immigrants to send international funds more quickly thus benefiting their family dependents who rely on remittances. FinTech development faces two main challenges because of regulatory complexities and digital understanding limitations that require effective solutions to fulfill financial inclusion goals.

Recommendations

The financial sector requires these basic measures to guarantee an inclusive impact will continue for all groups.

- U.S. financial regulatory institutions must create comprehensive FinTech regulations that develop industry growth while protecting client privacy.
- Police should create benchmarks which boost technological innovations by preventing illegal activities that benefit from them. The clarity of management regulations in FinTech sectors allows business growth while delivering consumer protections from data breach incidents and fraud in addition to predatory activities.

- FinTech solutions need national and cross-state regulations to ensure their availability for varied populations across different parts of the country and especially in underserved areas.

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