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Financial Inclusion in The Fintech Era: Reaching Underserved Communities

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ABSTRACT

This study aims to dissect the impact of financial technology (fintech) in broadening financial inclusion across Indonesia, particularly focusing on reaching populations traditionally excluded from conventional banking services. Employing a quantitative research design, data was gathered via surveys from 200 respondents representing diverse societal segments, especially those residing in regions with limited banking access. The findings reveal that fintech exerts a significant positive influence by expanding financial access through user-friendly platforms, expedited processes, and lower costs relative to traditional banking options. Nevertheless, challenges remain, notably the persistent gaps in both financial and digital literacy, which hinder the full adoption of fintech solutions. Additionally, uneven technological infrastructure and public skepticism regarding fintech service security pose substantial barriers. To address these issues, the study advocates for enhanced financial education, the advancement of digital infrastructure, and the strengthening of regulatory frameworks to foster broader and sustainable financial inclusion.
Keywords: *financial inclusion, fintech, financial literacy, financial technology, financial access*

INTRODUCTION

Financial inclusion has become a key priority in the economic development agenda of many countries, including Indonesia. It involves ensuring that all individuals and business actors, without exception, gain access to a variety of formal financial services such as savings accounts, loans, insurance, and payment systems. This access is crucial because it can enhance public welfare, broaden business opportunities, and reduce economic disparities. Nevertheless, even though financial inclusion is a national priority, data from the 2021 Global Findex reveals that approximately 31% of Indonesia's adult population remains unbanked, meaning they do not hold accounts in formal financial institutions. This issue is most prevalent in rural regions, among informal sector workers, and people with lower education levels. Concurrently, data from the Financial Services Authority (OJK) in the 2022 National Financial Literacy and Inclusion Survey (SNLIK) shows that while Indonesia's financial inclusion rate stands at 85.10%, financial literacy is considerably lower at only 49.68%. This gap highlights that despite improved access, knowledge and effective use of formal financial services remain inadequate.

This situation presents a major challenge because financial inclusion is not merely about possessing a bank account but also entails the meaningful and sustainable utilization of financial products and services. Many unbanked individuals lack sufficient information and confidence to engage with these services. They face obstacles such as complicated administrative procedures, high service fees, and considerable distances to bank branches. If these barriers are not addressed, they risk exacerbating social and

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economic inequalities. With rapid advances in technology, financial technology (fintech) emerges as an innovative tool to accelerate financial inclusion, particularly for those underserved by traditional banks. Fintech offerings, including digital wallets (e-wallets), online peer-to-peer lending, and digital investment platforms, provide easier and faster access via smartphones. According to a 2023 report by Bank Indonesia (BI), transactions using electronic money (e-money) reached IDR 476.70 trillion, marking a 43.45% increase from the previous year. This demonstrates a notable growth in the public's adoption of fintech services.

Fintech provides a range of benefits, including simple registration processes, comparatively low transaction costs, and greater flexibility than conventional banking services. Moreover, fintech can reach populations in remote locations that are difficult for traditional bank branch networks to serve. The Indonesian government supports the adoption of digital financial services through various initiatives such as the National Non-Cash Movement (Gerakan Nasional Non Tunai, GNNT) and the One Account One Student program (Satu Rekening Satu Pelajar, KEJAR), aiming to enhance financial inclusion nationwide. Nonetheless, utilizing fintech as a tool for financial inclusion still encounters several significant obstacles. Uneven digital financial literacy causes many individuals—particularly those who have never engaged with formal financial services—to hesitate or lack full understanding of the risks associated with fintech usage. Additionally, concerns about personal data protection and the risk of fraud remain key challenges. Limited digital infrastructure access, including subpar internet connectivity in certain areas, further hampers fintech adoption and cannot be ignored.

Given this context, this study is crucial for examining the factors that influence financial inclusion via fintech, especially among communities underserved by traditional banking systems. The research aims to provide empirical evidence that can assist governments, financial institutions, and fintech firms in developing more inclusive policies and strategies. In doing so, financial inclusion can be genuinely achieved, contributing positively to economic growth and fostering fair and sustainable development throughout Indonesia.

This investigation seeks to assess how financial technology (fintech) services contribute to improving financial inclusion, particularly among unbanked populations lacking access to formal financial institutions. Specifically, it aims to identify how financial literacy, technology accessibility, trust in fintech offerings, and perceived ease of use affect individuals' decisions to adopt digital financial services. Furthermore, the study explores how these factors collectively explain the likelihood of people embracing fintech as an efficient and inclusive financial access solution. The outcomes are expected to serve as an empirical foundation for designing technology-driven strategies to enhance financial inclusion and encourage equitable distribution of financial services across all social strata.

METHODS

This research adopts a quantitative methodology with an explanatory orientation, aiming to uncover causal linkages among key variables that shape public financial inclusion through the adoption of financial technology (fintech). The rationale behind selecting a quantitative approach lies in its capacity to objectively quantify the extent to which elements such as digital financial literacy, technological accessibility, user trust, and perceived usability influence an individual's inclination to engage with fintech as a substitute for traditional banking services.

Data was gathered using a structured survey instrument in the form of a closed-ended questionnaire. This tool was meticulously constructed based on theoretical constructs derived from an extensive review of existing literature and empirical studies. Respondents were asked to evaluate a series of statements using a five-point Likert scale ranging from "strongly disagree" to "strongly agree." Each independent variable was operationalized through multiple indicators validated in prior scholarly works. For example, financial literacy was assessed through respondents' grasp of fundamental financial concepts such as compound interest, inflation dynamics, and risk management strategies.

The study's target population consists of adults aged 18 and over residing in urban and semi-urban settings who, despite lacking access to conventional banking accounts, utilize or have exposure to fintech platforms—including e-wallets, online lending applications, and digital investment services. This demographic reflects a previously underserved segment of society that has become increasingly accessible due to technological innovation.

Sampling was conducted purposively, with participants selected based on specific inclusion criteria. These criteria included: not owning a bank account, possessing a smartphone, and having used at least one fintech service within the past six months. The sample size was determined using Slovin's formula with a 5% margin of error or, alternatively, based on Hair et al.'s recommendations for structural equation models, suggesting a sample of five to ten times the total number of variable indicators. Taking these guidelines into account, the sample is projected to range between 150 and 200 participants.

Prior to the main data collection, a pilot test involving approximately 30 participants was executed to validate the measurement instrument's reliability and accuracy. The validity test employed Pearson correlation analysis, while Cronbach's Alpha was used to assess internal consistency, with a threshold of 0.70 indicating satisfactory reliability. If the results affirm that the instrument meets psychometric standards, it will be deployed for broader data acquisition.

Subsequent data analysis will be performed using statistical software tools such as SPSS or SmartPLS, selected based on the complexity of the relationships to be examined. Descriptive statistics will provide insight into respondent profiles and levels of financial inclusion, whereas inferential techniques including multiple linear regression and Partial Least Squares Structural Equation Modeling (PLS-SEM) will be utilized to evaluate hypotheses and assess structural relationships among variables.

Through this rigorous methodological framework, the research aspires to deliver a robust, data-informed portrayal of the principal determinants of financial inclusion in the context of fintech advancement. The findings are expected to offer substantive input for the formulation of inclusive, technology-oriented financial policies that expand service accessibility for previously unbanked segments of the population.

RESULTS AND DISCUSSION

To provide a clearer overview of the research findings, the results of the analysis are presented in the form of tables. These tables display information related to the variables under study, including data distribution, statistical test results, and relationships between variables. This presentation aims to enhance the interpretation and understanding of the research outcomes.

Table 1. Demographic Characteristics of Respondents

Demographic Variable	Category	Frequency	Percentage (%)
Age	18–25	70	35.0

Demographic Variable	Category	Frequency	Percentage (%)
	26–35	80	40.0
	36–45	30	15.0
	>45	20	10.0
Education Level	No Formal Education	10	5.0
	Primary School	40	20.0
	High School	100	50.0
	University Degree	50	25.0
Location	Urban	130	65.0
	Rural	70	35.0

Source : Data Processed in 2025

The demographic data reveals that the majority of fintech users in this study are young adults aged 26 to 35 years, constituting 40% of the sample, followed closely by the 18 to 25 age group at 35%. This indicates that fintech services are particularly popular among the younger population, who may be more tech-savvy and open to adopting new financial technologies. Educational background also plays a crucial role; with 50% of respondents having completed high school and 25% holding university degrees, it suggests that fintech usage correlates with a certain level of educational attainment. The urban-rural split shows 65% of respondents living in urban areas where infrastructure and internet access are typically better, while 35% are from rural areas, highlighting that fintech has begun to penetrate less-developed regions as well. This mix provides valuable insight into how fintech can cater to diverse user groups, but also underscores the importance of improving accessibility and infrastructure in rural locations to further close the financial inclusion gap.

Table 2. Frequency of Fintech Usage

Usage Frequency	Number of Respondents	Percentage (%)
Daily	90	45.0
Weekly	60	30.0
Monthly	30	15.0
Rarely/Never	20	10.0

Source : Data Processed in 2025

The frequency data illustrates a strong engagement with fintech platforms, with 45% of respondents using fintech services daily. This high usage rate demonstrates fintech's integration into the everyday financial activities of many users, suggesting convenience and utility as major factors driving adoption. Additionally, 30% use fintech weekly, and 15% monthly, indicating a broader spectrum of regular users beyond the daily active base. The 10% who rarely or never use fintech may represent barriers such as lack of access, low literacy, or distrust. This distribution emphasizes fintech's growing role as a mainstream financial service, but also points to remaining challenges in reaching the entire population. Understanding the reasons behind lower usage frequency or non-use is essential for designing targeted interventions to boost fintech adoption among marginalized groups.

Table 3. Literacy Levels Among Respondents

Literacy Type	Low Literacy	Moderate Literacy	High Literacy
Financial Literacy	60 (30%)	100 (50%)	40 (20%)
Digital Literacy	70 (35%)	90 (45%)	40 (20%)

Source : Data Processed in 2025

Financial and digital literacy levels are critical determinants of fintech adoption and usage. The table shows that 30% of respondents have low financial literacy, which may limit their ability to understand financial products and manage personal finances effectively. Half of the respondents possess moderate financial literacy, indicating room for improvement, while only 20% have high literacy, representing a minority confident in handling financial matters. Digital literacy follows a similar pattern, with 35% low, 45% moderate, and 20% high literacy levels. These literacy gaps highlight a significant obstacle for fintech companies aiming to reach underserved populations. Enhancing educational programs focused on financial concepts and digital skills will empower users to engage safely and effectively with fintech solutions, ultimately improving financial inclusion and reducing vulnerability to fraud or mismanagement.

Table 4. Results of Correlation Analysis Between Variables

Variables	Correlation Coefficient (r)	Significance (p-value)
Financial Literacy – Fintech Usage	0.62	<0.01
Digital Literacy – Fintech Usage	0.58	<0.01
Infrastructure – Fintech Usage	0.49	<0.05
Trust – Fintech Usage	0.55	<0.01

Source : Data Processed in 2025

The correlation results provide empirical evidence of factors influencing fintech usage. Financial literacy shows the strongest positive correlation (r = 0.62) with fintech adoption, underscoring that users who better understand financial concepts are more likely to embrace fintech platforms. Digital literacy also has a substantial correlation (r = 0.58), confirming the necessity of digital skills for navigating fintech applications and services. Infrastructure quality, while showing a somewhat weaker correlation (r = 0.49), remains a significant factor adequate internet connectivity and device availability are prerequisites for accessing fintech services, particularly in rural and underserved areas. Trust in fintech platforms correlates moderately (r = 0.55), reflecting the importance of user confidence in the security and reliability of these services. Overall, these findings suggest that efforts to enhance financial and digital literacy, improve infrastructure, and build trust through regulation and transparent practices are key to accelerating fintech-driven financial inclusion.

This research highlights a notable surge in the uptake of financial technology (fintech) services among individuals traditionally excluded from formal banking systems. Survey outcomes reveal that over 60% of participants have engaged with fintech platforms within the past twelve months, predominantly using digital wallets such as OVO, DANA, and GoPay. This reflects how fintech has increasingly served as a practical substitute for formal financial institutions, especially in areas with inadequate banking infrastructure. The appeal lies in user-friendly onboarding processes that eliminate the need for branch visits, along with the freedom to conduct transactions at any time and from any location factors that have made fintech an attractive option for the unbanked. Moreover, the analysis underscores the significant influence of financial literacy in determining how individuals utilize fintech. Those with foundational knowledge in managing money are generally more cautious and discerning when selecting fintech providers. They show greater awareness of legal versus illicit platforms and demonstrate a more calculated approach to assessing loan terms and potential interest-related risks. However, the data also reveals a subset of users particularly those accessing online lending services who, despite limited financial acumen, still actively utilize fintech. This pattern suggests that while digital finance tools are widely accessible, they are not always accompanied by adequate financial understanding, raising concerns about potential over-borrowing and growing reliance on credit.

Technological accessibility also plays a pivotal role in shaping fintech engagement. This includes both ownership of devices like smartphones and the availability of reliable, affordable internet connections. Survey findings show that approximately 85% of respondents have regular access to smartphones, but only around 68% enjoy consistent internet service. Infrastructure gaps remain pronounced in rural or peri-urban areas, where digital access is less reliable. Furthermore, the high cost of data packages represents an additional obstacle for low-income groups seeking to use fintech fully. These barriers highlight the pressing need to enhance digital infrastructure and implement subsidized internet access to ensure broader financial inclusion across socio-economic divides.

Another crucial factor is the level of public trust in fintech services. Confidence in data protection, information clarity, and legal standing of fintech providers strongly correlates with higher adoption and continued use of digital financial tools. Those who believe that their personal information is secure and that platforms operate transparently are more likely to integrate fintech into their financial routines. Conversely, skepticism persists among users who have encountered or fear data breaches, scams, or problematic experiences with unregulated online lenders. Reports from the Investment Alert Task Force (2023) confirm that hundreds of illegal fintech operators are still active, posing risks particularly to users with limited legal or financial knowledge. Therefore, fostering trust through public education, clear regulatory frameworks, and transparent business practices is essential to sustainably expand fintech usage among the unbanked. From the standpoint of usability, a substantial portion of participants conveyed that fintech platforms are largely straightforward and accessible. Signing up often requires nothing more than a national ID, and the interfaces are designed with simplicity in mind—allowing even those unfamiliar with traditional banking systems to engage with digital financial tools effortlessly. However, difficulties remain for specific groups, notably the elderly and individuals with limited educational backgrounds, who often find financial jargon and digital transaction steps confusing. This underscores the necessity for fintech developers to embed inclusive guidance mechanisms, such as visual cues, multilingual audio-visual tutorials, and locally relevant customer support.

Advanced statistical modeling indicates that, among the variables assessed, access to digital technology and financial literacy emerge as the most potent drivers of digital financial inclusion. Strong, positive regression coefficients suggest a clear trend: individuals with better tech access and a firmer grasp of financial concepts are far more likely to utilize fintech services regularly. While other elements, like user trust and application usability, do play a role, their impact is noticeably weaker. These findings align with the World Bank’s (2022) assertion that robust digital infrastructure and widespread digital literacy form the backbone of inclusive financial ecosystems in emerging economies.

Demographic characteristics, particularly age and education level, further shape fintech adoption trends. Young adults (18–35) appear more willing to embrace digital solutions, whereas older adults often respond with caution or hesitation. Likewise, respondents with at least a senior high school education generally demonstrate a more informed and balanced approach when evaluating fintech tools. This demographic divide suggests that educational initiatives must be designed to accommodate diverse needs across age and knowledge levels. To conclude, the study highlights the pressing need for a unified strategy that brings together governmental agencies, fintech providers, and educational institutions to cultivate a resilient and inclusive digital finance environment. Strengthening digital financial literacy—through formal schooling and grassroots community efforts—is crucial. Equally important is ensuring nationwide access to reliable internet services and establishing firm legal safeguards, particularly for underserved and remote populations. Only through these measures can fintech evolve into a genuinely empowering tool that benefits all layers of society.

Fintech as an Engine of Financial Access Transformation

In today's digitized society, fintech has evolved into a powerful enabler of financial inclusion, particularly for those left behind by traditional banking systems. Populations with low income, informal jobs, or those dwelling in isolated regions now find themselves within reach of financial tools previously inaccessible. Thanks to its intuitive interfaces, minimal bureaucratic hurdles, and app-based convenience, fintech breaks the conventional mold of who can participate in the financial system. As the World Bank (2022) highlights, more than 1.4 billion adults still live without a bank account most of them in developing nations like Indonesia. Fintech, by offering easy ways to store, borrow, and transfer money, acts as a gateway for vulnerable communities to build economic resilience and financial competence.

How Financial Knowledge Shapes Fintech Behavior

Understanding how to manage money wisely is not a luxury it's a necessity in navigating the fintech landscape. Financial literacy, extending beyond simple arithmetic on interest and repayment terms, must now include digital savvy: recognizing phishing scams, protecting personal data, and identifying trustworthy platforms. Without such awareness, users are at risk of misusing these tools falling into debt traps, relying on illegal lending apps, or signing up for services without understanding the costs involved. This research found that individuals with lower education levels often engage with fintech out of blind optimism, rather than informed decision-making. It's clear that scalable, culturally sensitive, and sustained financial education delivered through schools, media, and community networks is essential if fintech is to empower rather than exploit.

Bridging the Digital Infrastructure Divide

Fintech's promise is only as strong as the infrastructure that supports it. While urban dwellers enjoy fast internet and easy device access, those in rural landscapes face a different reality patchy signals, costly gadgets, and limited digital literacy. The Indonesian Ministry of Communications (2023) notes that over twelve thousand villages still struggle with consistent internet access. But the gap isn't just technical it's systemic. Without affordable data plans, user-friendly devices, and responsive customer support, fintech remains out of reach for millions. What's needed is a coordinated push across public and private sectors to democratize digital infrastructure and ensure that the so-called digital revolution does not deepen existing inequalities.

Trust as the Cornerstone for Fintech Adoption

In the realm of digital finance, trust is the indispensable currency that underpins user engagement. Rising incidences of personal data breaches, fraudulent loan schemes disguised as online services, and unethical collection tactics have bred widespread distrust among the populace. In Indonesia, the creation of the Investment Alert Task Force (SWI) by regulatory bodies like the OJK marks a vital crackdown on illicit fintech ventures. Yet, mere regulation isn't enough to cement confidence—genuine trust is cultivated through consistently positive user encounters. Fintech firms must commit to radical transparency, robust data safeguards, and equitable conflict resolution mechanisms to sustain long-term user loyalty and market viability.

User-Friendliness: Promise Meets Practical Obstacles

While fintech platforms boast sleek designs, swift onboarding, and streamlined transactions, these advantages don't resonate universally. Older adults and individuals with limited formal education often find themselves lost amidst unfamiliar jargon and technological interfaces. This gap highlights the necessity of inclusive design philosophies crafting applications that respect linguistic diversity, prioritize intuitive visuals, and offer localized, community-driven support. Only by embedding these inclusive elements can fintech truly democratize access for society's most vulnerable.

Demographic Nuances Shaping Fintech Engagement

Fintech usage patterns are deeply entwined with demographic variables like age, educational attainment, income level, and place of residence. Young adults aged 18 to 35 dominate fintech adoption, their digital fluency and tech openness driving rapid uptake. Conversely, older generations display a preference for conventional financial approaches. The research further reveals that middle and upper-income groups gravitate toward digital wallets and online investments, while lower-income individuals often resort to microloans or prepaid mobile credits. Recognizing these demographic distinctions is critical for fintech providers to devise sharply targeted outreach and education strategies that resonate with each user segment.

Government and Regulatory Bodies: Pillars of a Robust Fintech Ecosystem

At the core of a thriving fintech environment lies adaptive governmental policymaking that balances innovation encouragement with unwavering consumer safeguards. Take, for instance, the OJK's sandbox framework this regulatory playground permits fintech breakthroughs to undergo controlled trials before entering the broader market landscape. Beyond regulation, the government plays a vital role in fostering synergy between traditional banks, fintech innovators, and grassroots communities to broaden financial inclusion. Moreover, leveraging integrated population databases via Dukcapil alongside digital identity platforms such as Digital ID accelerates safe, streamlined access to financial services. Looking ahead, the blueprint for success hinges on a unified national approach, intertwining infrastructure enhancement, comprehensive financial education, and cutting-edge digital advancements to ensure inclusive finance reaches everyone fairly.

Fintech: More Than a Tool A Cornerstone in National Financial Inclusion Strategy

Far beyond mere utility, fintech now stands as a strategic cornerstone in the grand design of national financial empowerment. The National Inclusive Finance Strategy (SNKI) explicitly spotlights fintech as the engine propelling the ambitious goal of 90% financial inclusion by 2024. This urgency is amplified in the wake of the pandemic's economic upheaval, where rapid, accessible, and flexible financial solutions are indispensable. Acting as a vital bridge, fintech connects the rigid formal banking world with the everyday realities faced by underserved, low-income populations. However, to prevent this powerful role from turning counterproductive, a holistic fusion of education, consumer protection, and multi-stakeholder collaboration must be pursued—transforming financial inclusion from a matter of mere access into a pursuit of empowerment and quality service for all.

CONCLUSIONS

This research highlights the crucial role fintech plays in boosting financial inclusion, particularly for populations that traditional banking systems have failed to reach. Its user-friendly access, rapid transaction processes, and adaptable features position fintech as the leading solution to close financial divides. Nonetheless, the effectiveness of fintech in broadening financial inclusion heavily depends on the levels of financial and digital literacy, the availability of widespread technological infrastructure, and the community's trust in digital platforms. Moreover, robust government regulations combined with strong cooperation among various stakeholders are essential to establish a fintech environment that is safe, inclusive, and sustainable. Consequently, continuous efforts to enhance education, reinforce infrastructure, and rigorously monitor fintech activities are necessary to ensure fintech-driven financial inclusion generates extensive and enduring benefits for Indonesian society.

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