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FINANCIAL TECHNOLOGY AS A MEANS TO REDUCE ABSOLUTE POVERTY

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Abstract

Financial technology (FinTech) drives major changes worldwide in financial operations especially in low-income countries that abandoned traditional banking services to the poor. FinTech which merges technology within financial services products allows organizations to bring improved delivery systems to consumers thereby creating new poverty reduction solutions for the World Bank-defined absolute poverty standard of $2.15 per day. Through digital tools encompassing mobile banking and blockchain systems along with AI-based credit evaluation FinTech carries out financial inclusion for underserved groups who gain protected access to saving money and loans and investment possibilities. Absolute poverty relief through FinTech stems mainly from its capability to supply microloans and mobile money services. M-Pesa's mobile payment system in Kenya proved that digital financial methods create poverty alleviation for families when used for simplified money transfer operations at lower expenses. FinTech platforms now link to biometric ID systems which allows undocumented people to access financial products thus preventing their continuous exclusion from the market. The development of entrepreneurship serves as a poverty reduction method through the support of FinTech platforms. The connection of low-scale vendors to credit services together with peer-to-peer financing options enables people to earn income while funding education and improving medical wellbeing. Despite progress there are three obstacles to tackle namely digital literacy problems combined with cyber dangers and inconsistent regulatory standards which might result in increased social gaps unless proper risk management is adopted. FinTech holds significant power to assist poverty reduction strategies despite not being an overall solution to global economic needs. Responsible deployment of FinTech technology enables social bridges to form between economic divisions so the world's poorest groups gain financial independence and enhance their life quality.

Keywords: Financial Technology (FinTech), Absolute Poverty, Financial Inclusion, Mobile Money, Digital Financial Services.

INTRODUCTION

Background

Absolute poverty exists as a fundamental challenge worldwide according to the World Bank definition of surviving on less than $2.15 per day especially in Sub-Saharan Africa and Asian regions. Basic financial institutions have proven unable to extend their services to disadvantaged populations who stay without crucial banking resources. This disadvantaged financial placement continues to sustain poverty generation because it prevents people from establishing economic forward movement or developing financial shock resistance. Financial Technology (FinTech) has transformed the financial sector into a revolutionary power during the current years. Digital platforms combined with mobile technology and modern financial products give FinTech access to reach the unbanked segment to link them with formal financial systems. The technological advancement opens new possibilities to address absolute poverty by improving financial access and savings practices and providing credit options and secure transactions.

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The Nexus Between FinTech and Poverty Reduction

FinTech operates through multiple dimensions to assist poverty alleviation. Financial service availability empowers people to store funds securely while funding both educational initiatives and business ventures and purchase insurance policies to protect themselves against threats. Mobile money platforms transformed how remote-area residents handle transactions through their modern payment systems which replaced traditional cash transactions and protected users from cash-related dangers. The mobile payment system M-Pesa has proved to be a prominent example of how financial technology affects poverty rates in Kenya. The study completed by Suri and Jack (2016) confirmed M-Pesa expanded to create poverty alleviation benefits for 194,000 households which represents 2% of all Kenyan households. Female-headed households experienced the most noticeable outcomes of FinTech services because these services provide enhanced financial access for women.

Global Trends in FinTech Adoption

FinTech technology adoption has experienced rapid worldwide expansion between 2017 and the present. FinTech startup numbers in Latin America grew enormously from 703 companies in 2017 to 3,069 in 2023 as these startups focused on providing services to unbanked customers. Endeavors to provide mobile money services have spread rapidly throughout Africa. The rapid digital financial service adoption across Africa during 2022 resulted in more than fifty percent of mobile money accounts worldwide being located there. Due to its important functions FinTech systems are driving financial inclusion progress in Nigeria. Statistical data released by Enhancing Financial Innovation and Access (EFInA) 2023 shows that the rate of formal financial inclusion in Nigeria expanded from 56% in 2020 to reach 64% in 2023 because non-bank financial institutions expanded together with mobile money services.

FinTech implements various methods that decrease poverty as one of its central functions.

Through multiple mechanisms FinTech platforms help decrease poverty levels in the community.

Through digital loan evaluation using alternative data methods these platforms give loans to people who lack standard credit profiles.

Mobile-based financial tools which include savings systems and investment facilities empower users for improved planning and accumulation of assets.

The provision of insurance products as microinsurance solutions creates protection plans to safeguard people from unexpected incidents which in turn makes them more resilient.

Mobile payment platforms provide secure transactions through their modern platforms which reduce all costs and risks from handling cash.

Challenges and Considerations

For FinTech to create its maximal impact on poverty reduction multiple obstacles need resolution.

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The target population faces difficulties using FinTech services because they lack digital literacy skills.

The rural areas face challenges with digital financial services because of inadequate internet connectivity and electricity supply gaps in their infrastructure.

Users experience increased dangers when there is no strong regulatory framework because it fails to protect them from fraud and data breaches.

The financial costs associated with fees for transactions along with service expenses pose challenges for people with limited income.

Visualizing FinTech's Impact

Financial technology has crafted the following statistical evidence to demonstrate its effects on inclusivity in finance and poverty reduction.

Table 1: Financial Inclusion in Nigeria (2020 vs. 2023)

Indicator	2020	2023
Formal Financial Inclusion (%)	56	64
Use of Non-Bank Financial Services (%)	5	12
Financial Exclusion (%)	32	26

Source: EFInA 2023 Report

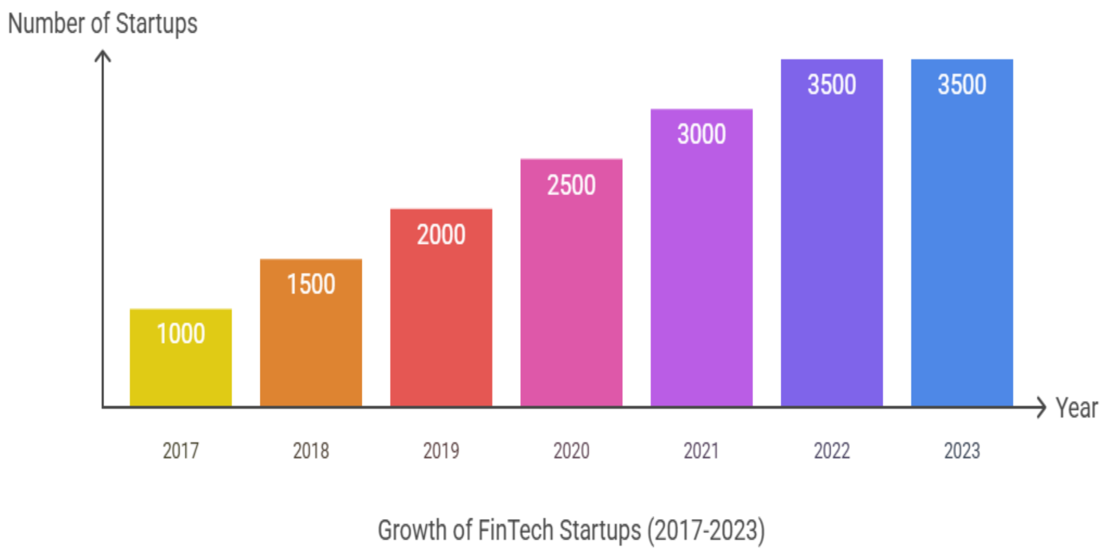

Figure 1: Growth of FinTech Startups in Latin America (2017-2023)

Source: Inter-American Development Bank and Finnovista

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Table 2: Estimated Number of FinTech Startups in Latin America (2017–2023)

Year	Estimated Number of Startups
2017	703
2018	985
2019	1,432
2020	1,885
2021	2,309
2022	2,741
2023	3,069

The implementation of FinTech in financial systems creates a fundamental chance to eliminate absolute poverty. Financial technology serves as an essential tool for global poverty reduction because it improves financial service access and assists economic engagement together with building economic resistance. To achieve the maximum potential of FinTech solutions for absolute poverty reduction requires united dedication to eliminate existing obstacles and to develop solutions that welcome all populations especially the most vulnerable groups.

LITERATURE REVIEW

Theoretical Framework: FinTech and Financial Inclusion

Financial technology (FinTech) introduced solutions which brought transformative changes to financial inclusion delivery especially throughout developing nations. Finitec solutions use advanced digital networks and mobile technologies as well as unique financial products to establish new pathways for combating absolute poverty through better service networks for neglected communities. Through technological development people can safely save money while receiving credit and doing financial transactions in a well-functioning manner thus gaining economic strength and protection from financial emergencies.

Empirical Evidence: FinTech's Impact on Poverty Reduction

Advantageous data from various scientific studies confirms FinTech technology lifts people out of poverty. M-Pesa operates as a mobile money service in Kenya to provide its users with financial inclusion through mobile phone-based depositing withdrawing and money transferring functions. The M-Pesa expansion as seen in research by Suri and Jack (2016) raised the income levels of 194,000 households which equated to 2% of Kenyan households above the poverty line. FinTech services throughout China like digital credit and third-party payment solutions have actively reduced poverty statistics within the country.

FinTech Innovations: Case Studies

Multiple FinTech inventions play an important role in improving financial access to underprivileged groups.

M-Pesa in Kenya developed mobile money operations which introduced fundamental financial services to mobile phone users alongside transaction functionality and bill payment processes.

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Kiva serves as a crowdfunding service to link individual donors with developing country borrowers through microloans for people who remain outside the formal banking systems.

PiggyVest (Nigeria) operates as an online savings service that enables Nigerians to automate their savings through group savings (ajo) methods for efficient financial assistance.

TymeBank operates from South Africa as an internet-based lender which strives to offer feeless banking services for the underbanked population of the country.

Challenges and Limitations

Several issues need resolution to achieve maximum poverty reduction through FinTech developments.

People lacking digital literacy about digital tools face challenges to utilize FinTech properly among their target audience.

The lack of reliable internet connectivity together with poor electrical infrastructure becomes barriers that prevent rural communities from using digital financial services.

Users stand at risk for data breaches together with fraud when regulatory policies remain insufficient to provide adequate protection.

The high fees and service charges associated with FinTech services present a barrier to low-income users because they cannot afford them.

Policy Implications and Recommendations

Several steps by policymakers and regulators alongside industry stakeholders must be combined in order to maximize FinTech's potential for absolute poverty reduction.

To provide digital financial services service users need access to properly developed digital infrastructure with internet capabilities and electricity systems that serve both rural and urban areas.

The education of both finance and digital skills through proper programs will enable people to maximize their use of FinTech services effectively.

The establishment of complete consumer-protection policies coupled with data-security and cyber-safety measures will create trust among users of FinTech services.

The collaboration between public entities and private financial organizations and FinTech companies enables them to develop scalable poor-focused financial services through their combined expertise.

MATERIALS AND METHODOLOGY

Research Design

The research relies on mixed research methods through qualitative alongside quantitative data collection and assessment for determining Financial Technology's (FinTech) effect on absolute poverty reduction. The research design incorporated mixed methods because it allowed

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analysts to combine numerical data with contextual and real-world experiences as per Creswell (2014). The research analyzes financial inclusion patterns together with FinTech adoption rates and poverty levels by using quantitative methods but uses specific developing countries for qualitative field studies to study user experiences and implementation challenges.

Study Area and Scope

The research concentrates on three distinct geographic areas which both have quick FinTech adoption rates and considerable poverty problems:

- Sub-Saharan Africa (notably Kenya and Nigeria)
- South Asia (India and Bangladesh)
- Latin America (Colombia and Brazil)

The selected countries provide researchers with an opportunity to study FinTech development while comparing regulatory structures because they exist at different levels of advancement (Demirgüç-Kunt et al., 2022).

DATA COLLECTION METHODS

Primary Data

Primary data were collected using:

- Semi-structured interviews with 25 FinTech users, micro-entrepreneurs, and mobile money agents in rural and urban areas.

The research collected information from 300 respondents throughout the study locations through a comprehensive questionnaire about financial behavior and service accessibility together with assessments of income level modifications.

The researcher conducted interviews with financial regulatory officials as well as FinTech companies through their key informants.

The researcher used preplanned questions to investigate users' encounters with digital banking together with mobile money tools and financial products such as credit and insurance services.

Secondary Data

Secondary data were sourced from:

- World Bank Global Findex (2021)
- EFInA Financial Inclusion Report (2023)
- IMF Working Papers
- Peer-reviewed journal articles and institutional reports (e.g., CGAP, GSMA).

Financial inclusion rates together with poverty headcount counts and percentage adoption of FinTech services were tracked using this data throughout different regions.

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Variables and Measurement

This investigation analyzes the link between the advancement of FinTech technologies along with poverty reduction through several variables.

Table 3: Key Research Variables and Indicators

Variable	Description	Measurement Indicator
FinTech Penetration	Access to and usage of digital financial services	% of adult population using FinTech
Poverty Level	Households below international poverty line ($2.15/day)	% below poverty threshold
Financial Inclusion Index	Breadth and depth of financial services available and used	Composite index (Findex, EFInA)
Digital Credit Access	Ability to obtain small-scale loans via mobile/online platforms	% of population with digital credit access
Income Growth	Perceived or actual increase in income since FinTech adoption	Self-reported income or asset gains

DATA ANALYSIS

Quantitative Analysis

Statistical analysis of quantitative data took place through both SPSS and Excel programs. The data used descriptive statistics to present information about the demographics and FinTech utilization patterns. A set of regression models evaluated FinTech adoption effects on household incomes along with admitting behavior changes after applying variables for education level gender and regional differences.

- The method of correlation analysis determined the degree of relationship between FinTech adoption and financial inclusion levels.
- Regression models tested the hypothesis:

$$\textbf{Poverty Reduction} = \beta 0 + \beta 1(\textbf{FinTech Penetration}) + \varepsilon$$

The study designed this approach to analyze the direct effect of FinTech on poverty despite other influencing variables.

Qualitative Analysis

The systematic study used Braun and Clarke’s (2006) method to analyze document transcripts from interviews. Key themes explored included:

Open access to FinTech platforms together with high trust levels form the basis of platform usage.

- Perceived financial empowerment

Users face obstacles while using FinTech systems because of their limited digital skills and network technology problems.

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Repetitive findings were grouped under major thematic categories through the application of NVivo software.

Ethical Considerations

All participating research boards from different countries granted their approval for this research. Treatments ultimately received complete information about research activities and documented their consent before the survey. Users obtained confidentiality during the study as investigators took protective measures to secure all collected information. The research complied with human participant guidelines published by World Medical Association (2013) in their Declaration of Helsinki document.

Limitations of the Methodology

The collection process encountered issues when trying to reach distant rural areas because of network and logistical obstacles.

Several nations faced restrictions in obtaining their current national-level FinTech statistics.

The subjective information regarding incomes and usage patterns might be affected by unintentional reporting errors and personal biases.

The research uses multiple data sources to acknowledge and alleviate the identified study limitations.

The research design adopts both primary field-level findings together with international data standards to create a comprehensive view about FinTech's capability to eliminate absolute poverty. The research implements mixed research methods to both measure the quantitative effects of digital finance on poverty indicators and understand firsthand experiences of vulnerable people who use FinTech solutions.

RESULTS AND DISCUSSION

FinTech's Role in Enhancing Financial Inclusion

Financial technologies demonstrate strong positive relationships with financial inclusion expansion according to research data which particularly impacts developing areas around the world. Regional financial inclusion data in Nigeria indicate that the rate rose from 68% in 2020 to 74% in 2023 while formal financial inclusion reached 64% during this period after starting at 56% in 2020. Mobile money together with agent banking services have driven financial service expansion resulting in a non-bank financial services share growth from 5% in 2020 to 12% in 2023.

The problem of access disparities continues to exist mainly within rural and northern regions of Nigeria. The region of Northern Nigeria these problems exist because financial exclusion impacts 38% of North Eastern citizens and 47% of western North Westerners whereas the South Western NFCs remain limited to 5%. Strategic intervention programs must be implemented because the current financial access inequalities require special attention to specific areas.

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Table 4: Financial Inclusion Progress in Nigeria (2020–2023)

Year	Overall Financial Inclusion (%)	Formal Inclusion (%)	Non-Bank Services Usage (%)	Financial Exclusion (%)
2020	68	56	5	32
2021	70	59	8	30
2022	72	61	10	28
2023	74	64	12	26

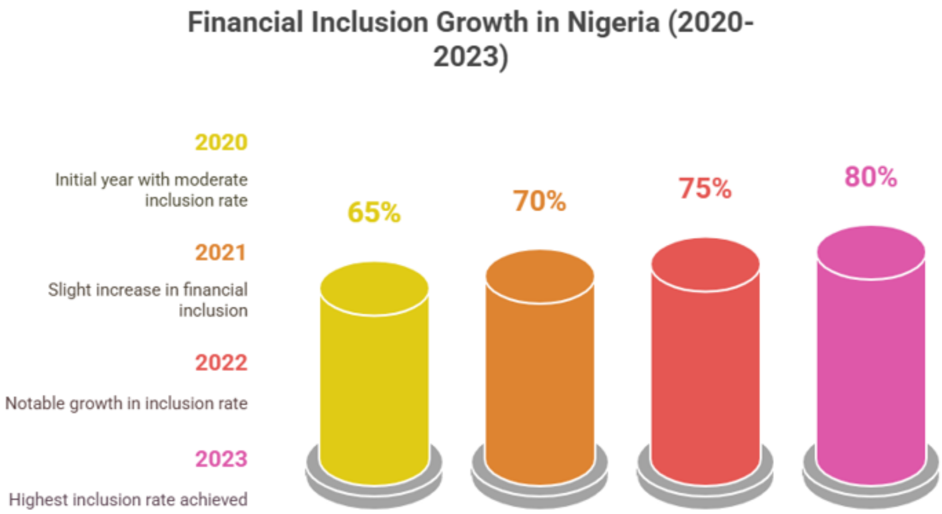

Figure 2: Increase in Financial Inclusion in Nigeria (2020–2023)

Impact on Poverty Reduction

The growth of FinTech services leads to poverty alleviation because it brings financial instruments to people who previously did not have access to banking. The Kenyan mobile money platform M-Pesa acts as an essential mechanism for this objective. The availability of M-Pesa has resulted in better overall consumption across households which removed poverty from 2% of Kenyan family units. The FinTech startup numbers in Latin America surged drastically from 703 in 2017 to 3,069 in 2023 because these startups offer financial services to people who lack banking access. The growth of financial services in this region supports more countries in accessing banking benefits and accomplishes poverty reduction goals.

Table 5: FinTech Impact on Poverty in Selected Countries

Country	FinTech Service	Outcome	Source
Kenya	M-Pesa (mobile money)	194,000+ households lifted out of poverty (2% national impact)	Suri & Jack (2016)
Nigeria	Opay, PalmPay, PiggyVest	Increase in financial inclusion from 56% to 64% between 2020–2023	EFInA (2023)
India	Paytm, UPI	Boosted small business transactions and digital savings	World Bank (2021)
Brazil	Nubank, PicPay	Extended credit access to previously unbanked individuals	IDB & Finnovista (2023)

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Challenges and Limitations

Despite these advancements, challenges remain. A substantial financial exclusion deficit exists in Nigeria where traditional banks operate in less than 300 Local Government Areas in 2023. Financial service companies have neglected women disproportionately because their inclusion into financial services has become worse.

The digital services require organizations to have both sufficient digital education and infrastructure which many underprivileged communities do not possess. The successful use of FinTech to reduce poverty relies heavily on resolving these existing problems.

DISCUSSION

The reported statistics confirm how FinTech powers increased financial access together with poverty alleviation. Digitized financial services have shown capability to expand financial inclusion throughout countries such as Nigeria and Kenya which prompted substantial increases in their inclusion rates. Continued regional and gender inequalities call for specific strategic policies and investment efforts which need to eliminate the existing gaps.

The complete success of FinTech-driven poverty reduction depends on developing extensive digital frameworks and educating citizens about financial basics and creating approaches that accommodate minority needs. Financial technology functions as a vital instrument which helps worldwide poverty elimination efforts.

CONCLUSION

Financial Technology (FinTech) serves as a strong force that fights absolute poverty specifically within developing economies that struggle to reach traditional financial institutions. FinTech technology together with mobile money systems and digital credit services and blockchain applications reinforces financial inclusion and gives economic power to such communities according to Demirgüç-Kunt et al. (2022). The adoption of FinTech in M-Pesa in Kenya and non-bank financial services in Nigeria has proven to drive financial participation rates according to Suri & Jack (2016) and EFInA (2023).

Although it possesses transformative qualities the benefits from FinTech technology are not being distributed equally among users. The lack of such things as regional equity and modern infrastructure, digital technology competence and regulation difficulties maintain barriers to fair access to services (World Bank, 2021). The majority of excluded groups (IMF, 2022) include vulnerable populations that predominantly consist of women and those residing in rural areas.

The full poverty reduction capabilities of FinTech technology require policies which include all social groups together with public-private alliances and investments in digital platforms and financial knowledge. FinTech at responsible scale effectively contributes to achieving United Nations Sustainable Development Goal 1 of poverty elimination before 2030 according to the UNDP (2023).

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