FinTech Solutions, Financial Inclusion and Sustainable Economic Growth in Developing Countries

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Abstract

This study examines how innovations in financial technology are changing financial services in developing nations. The study focuses on how FinTech can improve financial inclusion by giving underserved groups access to financial services, thereby fostering sustainable economic growth. Through a qualitative analysis of case studies from Latin America, South Asia, and sub-Saharan Africa, the study investigates how platforms like Paystack, GCash, and M-Pesa have transformed financial access, and how they are encouraging entrepreneurship and raising living standards. However, it draws attention to issues like cybersecurity threats, regulatory gaps, and the digital divide, especially in rural areas. The results emphasise that strong policies, digital literacy initiatives, and infrastructure development are required to take full advantage of FinTech's potential for inclusive and sustainable growth. Policymakers, financial institutions, and FinTech entrepreneurs can learn from the study how to

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eliminate barriers to financial inclusion and promote sustainable economic growth in developing countries.

Keywords: Financial Inclusion, FinTech Solutions, Sustainable Economic Growth, Developing Countries, Digital Financial Services

Introduction

Financial inclusion is now a key component of global economic development, particularly in developing countries where a significant portion of the population lacks access to banking services. The World Bank estimates that approximately 1.4 billion adults globally do not have access to formal financial services, with a disproportionately high number residing in low- and middle-income countries (Demirgüç-Kunt et al., 2021; World Bank, 2022). Financial exclusion not only limits individual opportunities for prosperity but also stifles overall economic growth because households struggle to save, invest, and manage financial risks, and because businesses face barriers when attempting to obtain credit.

Traditionally, official banking systems have been the primary means of providing financial services. However, these institutions commonly have a limited reach in remote and rural areas with inadequate infrastructure and high operating costs (Beck et al., 2014; Tay, Tai, and Tan, 2022). The rigorous documentation requirements and the high costs of bank account maintenance, which can be prohibitive for those with low incomes, further perpetuate financial exclusion. In developing countries in sub-Saharan Africa, South Asia, and Latin America, access to financial services is often a privilege rather than the norm, making this problem particularly acute in those regions (Allen et al., 2016).

In recent years, financial technology, or FinTech, has emerged as a disruptive force in the fight against financial exclusion. FinTech is the innovative and user-friendly use of technology to deliver financial services. Through digital payments, peer-to-peer (P2P) lending, mobile banking, and blockchain technology, fintech has opened up new avenues for previously underserved groups to interact with the formal financial system (Mhlanga, 2023;Ozili, 2020). Mobile payment platforms such as M-Pesa in Kenya and GCash in the Philippines have demonstrated how FinTech can provide

easily accessible, reasonably priced financial services to millions of unbanked individuals, promoting inclusive growth (Belmonte et al., 2024; Jack & Suri, 2011).

FinTech's role in financial inclusion also has a big influence on sustainable, economic growth. According to Cull et al. (2014), financial inclusion empowers individuals to save, invest, and buy risk insurance, which boosts income generation and lowers poverty. Furthermore, it increases access to credit for businesses, particularly micro, small, and medium-sized enterprises (MSMEs), fostering entrepreneurship, job creation, and economic resilience (Klapper et al., 2016; World Bank, 2019). Therefore, understanding the connection between economic growth and FinTech-driven financial inclusion is necessary to create policies that promote sustainable development in developing countries.

Statement of the Problem

Access to formal financial services remains a significant issue in developing countries, where a significant portion of the population is excluded from the financial system. Traditional banking institutions are often inaccessible to low-income and rural communities due to their high fees, poor infrastructure, and burdensome documentation requirements. This financial exclusion hinders economic opportunities, limits savings, investment, and risk management, and stifles overall economic growth. Even though FinTech solutions offer innovative ways to bridge this gap, regulatory limitations, cybersecurity risks, low digital literacy, and unequal access to digital platforms are some of the barriers preventing their widespread adoption.

This study examines how FinTech solutions can enhance financial inclusion and promote sustainable economic growth, as well as eliminate the barriers that still stand in the way of these solutions' full potential in developing countries.

Significance of the Study

This study is significant because it examines how FinTech innovations are fostering inclusive economic growth and altering the financial services sector in developing countries. FinTech offers a long-term, scalable solution to bridge the financial inclusion gap because traditional banking systems struggle to meet the needs of underserved communities (Sahay et al., 2020).

Through an analysis of how FinTech fosters inclusive growth and reduces economic inequality, this study contributes to the growing body of research on the role of digital financial services in development.

The study aims to highlight the socioeconomic impacts of FinTech, especially in the context of developing economies, even though a lot of research has concentrated on its technological and operational aspects. The study will offer important insights into the effectiveness of FinTech solutions in addressing financial exclusion and fostering sustainable economic growth by exploring case studies from Latin America, Southeast Asia, and sub-Saharan Africa. Additionally, it will pinpoint potential challenges that could prevent FinTech's full benefits from turning into reality, like cybersecurity threats, regulatory constraints, and gaps in digital literacy (Frost, 2020).

The study's findings will be useful to policymakers, financial institutions, development organisations, and FinTech entrepreneurs who want to expand financial access and promote economic growth in developing countries. Policymakers will better understand the infrastructure and regulatory changes needed to support FinTech innovation, and financial institutions can use these insights to develop inclusive, customer-focused products that address the needs of unbanked populations (Ugochi and Odonkor, 2024).

Aims and Objectives

The primary aim of this study is to examine how FinTech solutions impact financial inclusion and sustainable economic growth in developing countries. The study will concentrate on how FinTech innovations facilitate financial access, potential challenges to their effectiveness, and their implications for economic development. The study's specific objectives are to:

i. Examine the role of FinTech solutions in enhancing financial inclusion in developing countries;
ii. Analyse the relationship between financial inclusion and sustainable economic growth in selected developing economies;
iii. Identify the challenges and potential risks associated with the adoption of Fintech in driving financial inclusion and economic growth.

Theoretical Framework

This study's theoretical framework investigates the nexus between FinTech, financial inclusion, and sustainable economic growth in developing nations. Understanding how FinTech solutions support financial inclusion and how this promotes sustainable economic growth is based on theories related to financial intermediation, innovation diffusion, and economic growth. We can gain a better understanding of the transformative potential and limitations of FinTech by critically examining these theories and their applicability to developing economies.

Financial Intermediation Theory

The theory of financial intermediation, which holds that financial institutions serve as middlemen between savers and borrowers, facilitating the effective distribution of resources within an economy, is central to financial inclusion (Diamond & Dybvig, 1983). By reducing transaction costs and resolving information asymmetry, traditional financial intermediaries like banks help with risk management, credit provision, and savings. However, infrastructure limitations, high costs, and regulatory bottlenecks frequently limit the reach of these traditional institutions in developing nations (Demirgüç-Kunt & Levine, 2008; Heeks et al., 2021).

Fintech innovations have disrupted the conventional framework of financial intermediation by providing online alternatives to traditional banking. By eschewing traditional banks, fintech companies are providing financial services directly to consumers through peer-to-peer (P2P) lending, digital payment platforms, and mobile money. This decentralised model of financial intermediation has reduced entry barriers, allowing unbanked and underbanked populations to engage in the formal financial system. For instance, in Kenya, where traditional banks were previously nonexistent, mobile money services like M-Pesa have been significant in giving residents of rural areas access to financial services (Shaikh et al., 2023; Suri & Jack, 2016).

Financial intermediation theory explains FinTech's efficiency gains, but it also presents significant risk and regulatory challenges. Unlike traditional financial institutions, many FinTech companies operate outside the purview of central banks and financial regulators, potentially increasing the risk of

fraud, data breaches, and insolvency for users (Kotovskaya, 2024; Philippon, 2016). The rapid expansion of digital financial services also raises concerns about systemic risks because these platforms may lack the capital buffers and deposit insurance that traditional banks have. Therefore, even as FinTech improves financial inclusion, regulatory frameworks must keep up with technological advancements to maintain financial stability in developing countries (Arner et al., 2017).

Innovation Diffusion Theory

The diffusion of innovation theory provides a further lens to understand the spread and adoption of FinTech solutions (Rogers, 2003). The impact of social networks, early adopters, and communication channels on the rate of innovation adoption is highlighted in this theory, which explains how innovations and new technologies spread throughout a society. FinTech innovations, such as blockchain technology, digital wallets, and mobile banking, are gradually entering developing countries, particularly among populations with limited access to traditional banking services.

The adoption of FinTech solutions is not consistent across all societal segments, which is one important finding from diffusion theory. Due to challenges like low digital literacy and inadequate internet infrastructure, older and rural populations may adopt FinTech more slowly than young persons, who are typically more tech-savvy, urban, and better educated (Mahmud, Joarder, and Muheymin-Us-Sakib, 2022; Gomber et al., 2017). Given the potential to create a "digital divide" between those who can access FinTech services and those who cannot, this uneven adoption presents a challenge to the goal of universal financial inclusion. Additionally, even though many developing nations have a relatively high mobile phone penetration rate, internet connectivity is still scarce, especially in rural areas, which limits the growth of internet-based FinTech services (Ozili, 2018).

Innovation diffusion theory, however, emphasises FinTech's potential for quick scaling after a critical mass of users is attained, notwithstanding these challenges. As more people use FinTech services as a result of greater social acceptance and trust in digital platforms, peer effects and network externalities are important factors in this process (Bajunaied, Hussin, and Kamarudin, 2023; Venkatesh et al., 2012). In Kenya, for example, M-Pesa expanded quickly because of its capacity to satisfy users' financial needs,

as well as its aggressive marketing strategies and alliances with mobile network providers (Ndung'u, 2021; Osabutey and Jackson, 2024). Therefore, to encourage broad adoption and financial inclusion, policymakers and financial institutions must have a thorough understanding of the diffusion dynamics of FinTech.

Economic Growth Theory

The relationship between financial inclusion and economic growth can be understood using both traditional and modern theories of economic growth. The neoclassical growth model states that capital accumulation, labour input, and technological development are the primary forces behind economic growth (Solow, 1956). Financial inclusion encourages capital accumulation and entrepreneurship, which in turn spur economic growth by increasing access to credit and enabling people and businesses to invest in lucrative endeavours (King and Levine, 1993; Shen et al., 2024).

Nevertheless, the neoclassical model does not adequately account for the role of financial inclusion in tackling income inequality and poverty alleviation, even though it highlights the significance of saving and investing. This gap is filled by the endogenous growth theory (Romer, 1990), which highlights the role that technology, innovation, and human capital play in promoting sustained economic growth. Given that it makes it possible for low-income people to access financial services, make educational investments, and enhance their standard of living, FinTech can be viewed in this context as a driver of inclusive growth (Beck et al., 2007; Dario and Figueiredo, 2024). FinTech can increase productivity and income generation by lowering transaction costs and facilitating greater financial participation, especially for MSMEs, which are frequently the backbone of developing economies (Demirgüç-Kunt et al., 2020).

However, theories of economic growth also highlight the potential trade-offs between rapid financial inclusion and macroeconomic stability. Although expanding credit availability can spur economic growth, it can also lead to increased debt, particularly in the absence of robust consumer protection regulations (Klapper et al., 2016). Additionally, the introduction of FinTech firms into developing countries could disrupt long-standing financial systems, posing a threat to traditional banks and raising monetary policy concerns

(Arner et al., 2017). Policymakers must thus balance the need for financial inclusion with the dangers of financial instability.

Critique and Synthesis

The theories of financial intermediation, innovation diffusion, and economic growth provide valuable insights into the relationship among FinTech, financial inclusion, and sustainable growth, despite also highlighting important limitations. First, the current regulatory frameworks in many developing countries are insufficient to handle the complexities of digital finance, even though financial intermediation theory highlights the importance of regulation. Second, diffusion theory emphasises how social networks and peer pressure propel adoption, but it may overlook structural barriers to FinTech access, such as poverty, gender inequality, and a lack of infrastructure (Pazarbasioglu et al., 2020).

Finally, economic growth theories argue that financial inclusion promotes growth by enabling investment and entrepreneurship, but they may not sufficiently account for the risks associated with excessive debt and unstable finances. Furthermore, even though FinTech solutions have been effective in expanding access to financial services, they are unable to address more important development problems, such as weak institutional frameworks, political unpredictability, and corruption, which continue to impede sustainable growth in many developing countries.

FinTech has great potential to promote financial inclusion and sustainable economic growth, but its sustainability depends on the broader socioeconomic context, the regulatory environment, and the ability to eliminate systemic adoption barriers. Therefore, a thorough understanding of these theoretical positions is necessary to develop effective policies and interventions that optimise FinTech's benefits while lowering its risks.

Methodology

This study examines how FinTech solutions impact financial inclusion and sustainable economic growth in developing nations using a qualitative research methodology and mainly secondary data. Reputable publications will be used to collect the data, including reports from global FinTech organisations like the Financial Stability Board and the Global Findex Database, as well as reports from international financial institutions like the

World Bank, International Monetary Fund (IMF), and United Nations (UN). Furthermore, online reviews by FinTech service users and government publications from developing countries will offer useful insights into experiences and applications in the real world.

A qualitative approach is chosen because it allows a comprehensive understanding of the contextual factors that affect the adoption and effectiveness of FinTech solutions in diverse geographic areas. Such an approach is particularly useful when studying complex social, technological, and economic phenomena, where the range of user behaviour and policy impacts may be too complex for numerical data alone. The availability of thorough, trustworthy reports that provide macro-level analyses on trends in financial inclusion and the role of FinTech also makes secondary data ideal for this study. Taherdoost (2021) claims that secondary data is cost-effective and efficient for research on complex, wide-ranging topics, while qualitative approaches offer deeper interpretive insights into emerging trends (Silverman, 2020).

The research population for this study consists of developing countries globally, with a sample size focused on sub-Saharan Africa, South Asia, and Latin America. From each of the following regions— South Asia (India and the Philippines), Mexico and Brazil (Latin America), and sub-Saharan Africa (Kenya and Nigeria). These countries were selected for their significant adoption of FinTech solutions. These regions represent a diverse range of developing economies with varying levels of financial inclusion and FinTech penetration, allowing for a comparative analysis of the impact of FinTech on financial inclusion and economic growth.

These regions are ideal for this research because the World Bank (2024), Bakker et al. (2023), and Bas et al. (2023) have determined that they have the most potential for FinTech-driven financial inclusion. This regional focus provides a thorough yet in-depth understanding of how FinTech solutions can transform different economic settings.

The qualitative data will be analysed by using the narrative analysis method, with an emphasis on identifying important themes, trends, and insights regarding how effectively FinTech works to promote financial inclusion and economic growth. Given that it offers a deep and comprehensive understanding of how FinTech solutions impact financial ecosystems in developing nations, narrative analysis has been selected. By

integrating various data sources, this method provides a thorough and contextually informed understanding of FinTech's transformative role. According to Elliott (2005), narrative analysis is especially helpful for investigating complex, real-world occurrences by looking at the experiences and tales within a particular setting. This approach will allow the study to present a comprehensive view of FinTech's role in sustainable economic growth and financial inclusion.

Findings

This section presents the findings about how effectively various FinTech platforms, services, and products promote financial inclusion and boost economic growth in developing countries. The analysis focuses on prominent FinTech platforms like M-Pesa in Kenya, Paystack in Nigeria, Paytm in India, GCash in the Philippines, CoDi in Mexico, and Pix in Brazil. These platforms have transformed financial access for underserved communities by enabling transactions, savings, and investments. The results show how they support the economic growth of these countries, promote entrepreneurship, and aid in bridging the financial divide. The key successes and challenges are also discussed.

M-Pesa in Kenya

M-Pesa, which was introduced by Safaricom in 2007, has transformed financial inclusion in Kenya by giving millions of people who were previously unbanked access to mobile-based financial services. M-Pesa began as a straightforward platform for money transfers but has since grown into a full-fledged financial ecosystem that provides services like bill payment, insurance, loans, and savings. With over 66 million active users in multiple African nations by 2022 (Statista, 2025), Kenya was M-Pesa's largest market, with about 34 million users (Safaricom, 2024).

M-Pesa has had a significant influence on financial inclusion in Kenya. A 2016 Massachusetts Institute of Technology (MIT) study found that the platform improved access to financial services, especially for women, lifting 194,000 households— nearly 2% of Kenyan households— out of extreme poverty (Matheson, 2016). Additionally, it has enabled more than 96% of the nation's mobile money transactions (Africa Business, 2023; Mas, Radcliffe, and Foundation, 2010), with users transacting more than $314

billion annually via M-PESA (Vodafone, 2020). Furthermore, M-Pesa has improved small business operations by making credit easily accessible and facilitating smooth payment systems, which has helped the economy grow and contributed roughly 59% of its GDP in 2023 (Warwick Business School, 2024).

M-Pesa's success has transformed Kenya's financial landscape and made it a model for other developing countries, positioning Kenya as a global leader in mobile banking innovation (Tyce, 2020).

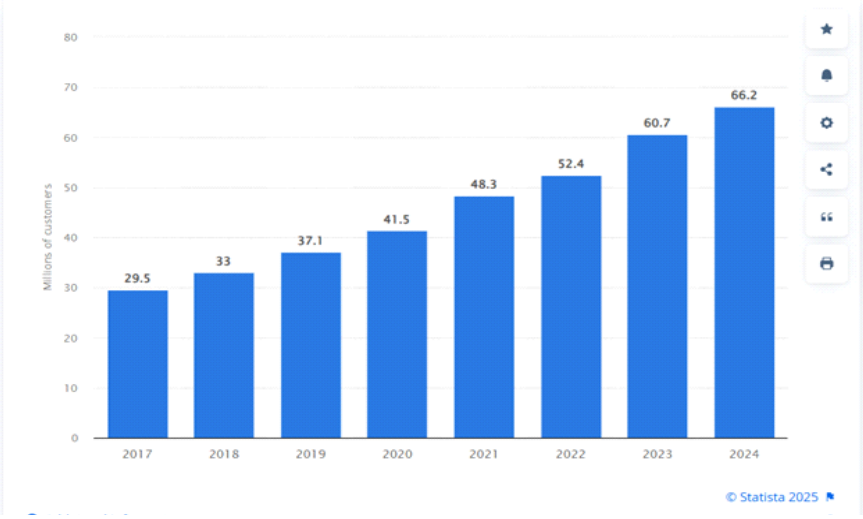

Fig 1. Number of M-PESA customers 2017-2024 in Millions (Statista, 2025).

Paystack in Nigeria

In Nigeria's financial technology (FinTech) sector, Paystack has emerged as a significant player since its establishment in 2015, assisting businesses with online payments (Kola-Oyeneyin, Kuyoro, and Olanrewaju, 2020). Paystack was initially developed as a payment gateway and provides seamless transaction processing, allowing businesses to accept credit cards, bank transfers, and mobile money payments. With its launch, Nigeria's dearth of suitable online payment options was addressed and a stable platform for the service and e-commerce industries was created.

The growth of Paystack has been impressive. By 2020, the business had grown to Ghana and South Africa and handled more than half of all online payments in Nigeria (TechCrunch, 2021). Paystack's international appeal and success were demonstrated in 2020 when it was purchased for $200 million by the multinational payment giant Stripe, one of the biggest startup exits in Africa (Bloomberg, 2020; Wachira, 2020).

Paystack has greatly enhanced Nigeria's e-commerce landscape by enabling digital payments and over 200,000 businesses to carry out secure online transactions (Paystack, 2020). However, there are still problems with high transaction costs and inconsistent internet infrastructure, which could affect the reliability of services. However, by encouraging financial inclusion and enhancing business efficiency, particularly for SMEs, Paystack significantly contributes to Nigeria's digital economy (CB Insights, 2024). Paystack's capacity to foster client relationships, introduce new business models, and accelerate growth benefits over 50,000 African companies (Boyd, 2020).

Paystack Services User Reviews

S/N	Review	Reviewer	Portfolio
1	*Paystack's rapid turnaround times, faultless execution, passion and commitment, and innovative thinking have all been commended for their work.*	Olubayo Adekanmbi	Chief Transformation Officer, MTN
2	*Payment failures have decreased since we implemented Paystack, and clients now have a variety of payment alternatives.*	Bayo Adesanya	Chief Digital Officer, AXA Mansard
3	*Taxify only took cash prior to Paystack. With Paystack, riders can now pay with their cards, and we can quickly send drivers their earnings.*	Nonso Onwuzulike	Operations Manager, Bolt

4	*As Paylater has expanded rapidly, Paystack has also expanded along with us, scaling flawlessly to accommodate our high transaction volumes.*	Henry Uku	Growth Lead, Carbon
5	*We added Paystack as a payment option without informing our customers, and within a month, it was the most popular option.*	Akin Alabi	CEO, Nairabet
6	*The simple and useful KYC that Paystack's BVN and Bank Account Look-Up features allow us to perform is very beneficial to our business.*	Timi Ajiboye	CEO, BuyCoins
7	*More clients are using PiggyVest since we started using Paystack for transfers because they can instantly access their savings when they request them!*	Joshua Chibueze	Co-founder & Chief Marketing Officer, PiggyVest
8	*"We were trying to get people to subscribe to affordable health insurance plans- Paystack's recurring billing feature helped us do that effectively."*	Opeyemi Obembe	Chief Technical Officer, Reliance HMO
9	*"Using Paystack, we've seen a significant increase in our loan collections and we can onboard customers online much faster than before.*	Daniel Watts	Chief Risk Officer, Renmoney

Table 1: Author's compilation, (Paystack , 2018).

Paytm in India

Established in 2010, Paytm began as a platform for bill payment and mobile recharge (Puneeth and Nethravathi, 2021). With services including e-commerce solutions, mobile wallets, and the Unified Payments Interface (UPI), it has grown over the years to become one of India's biggest digital payment companies. When digital payments gained popularity following the Indian government's demonetisation in 2016, its growth accelerated. Aiming to introduce half a billion Indians to mainstream financial services, Paytm, which has over 130 million users, has been leading India's transition to a cashless economy (World Economic Forum, 2024).

The cashless economy in India has benefited greatly from Paytm. By Financial Year 2022-23, digital transactions made up 99% of all transactions, according to the Reserve Bank of India (RBI). Paytm accounted for 15% of all UPI transactions, which equated to 10.9% of the cashless economy (Chakraborty, 2024). There are still issues even though Paytm has made payments easier for millions of people and expanded financial inclusion. Concerns regarding data privacy, security flaws, and the company's capacity to continue turning a profit in the face of competition from other online platforms like Google Pay and PhonePe have been raised. Paytm is still revolutionising India's digital financial scene in spite of these worries.

User Reviews of Paytm, India

S/N	Review	Reviewer	Portfolio
1	*Paytm can be used by employers for a variety of internal financial transactions. Employers can use the Paytm link or QR Code to easily pay their clients and employees. The company can use Paytm to send the money immediately if an employee requests an emergency advance. I'm dissatisfied with their customer service.*	Aishwarya Varshney	Infrastructure Engineer, American Express

2	*We used Paytm as a payment solution in our company, which allowed us to accept payments from clients more quickly and successfully. It provides a single platform for both domestic and international payments. Customers can use a variety of payment methods, including debit/credit cards, prepaid cards,UPI, Net Banking, wallets, and more, through this payment gateway. Since clients now had a simple way to pay for our services, our sales have increased. On its platform, it facilitates the payment of all bills. You can generate a business QR code with this payment gateway to receive payments instantly and receive notifications.*	Rajkishore Mohapatra	Founder & CEO, Mohapatra Enterprises
3	*Paytm is mostly used as a payment gateway service in our company. We work with Razorpay Pay to enable Paytm's services, which include UPI, credit card, debit card, and Paytm wallet service. It makes sense to work with a major player in the market like Paytm, as it is one of the most popular online wallets in India. Additionally, our Advantage Club wallet works with Paytm.*	Darpan Chauhan	Marketing Manager, Advantage Club

4	*We use Paytm to pay our bills for food, water, electricity, and other services, as well as to transfer money online. Our business also uses it to collect payments from customers. All financial transactions on Paytm are conducted using 128-bit encryption SSL security, making it a very safe and reliable app for online payments and money transfers. Additionally, it offers a mobile wallet, which is quite helpful. Booking tickets for flights, trains, buses, taxis, and hotels is another useful use for it.*	Anmol Dubey	Full-stack Developer, Azoora, Inc.

Table 2: Author's Compilation (TrustRadius, 2025).

GCash in the Philippines

GCash, which was introduced in 2004 by Mynt, a Globe Telecom subsidiary, has become the leading digital payment platform in the Philippines. GCash, which was initially developed for mobile payments and money transfers, has grown to offer services like bill payment, mobile commerce, and even investments with a focus on promoting financial inclusion. With 60 million users, or 83% of the adult population, GCash has become a necessary component of daily life in the Philippines (WARC, 2022).

The platform's objective is to democratise financial services and make them accessible to all Filipinos, particularly the 63% of the population without banking access. By Financial Year 2022, GCash had 29 million daily logins and processed 19 million transactions, with a monthly gross transaction value of 500 billion pesos (WARC, 2022). The platform's commitment to user trust and community involvement is demonstrated by significant features like QR code donations and Customer Protect, which ensures transaction security.

Notwithstanding its successes, GCash has faced challenges. Concerns regarding data privacy and regulatory oversight were raised by the platform's rapid growth. Additionally, maintaining transaction speed and reliability in the face of growing demand may become difficult as the business expands. However, the Philippines' shift to a cashless, more inclusive economy still depends on GCash.

User Reviews of Gcash, Philippines

S/N	Review	Reviewer	Portfolio
1	*I thought about transferring the remaining money to my bank account because my Gcash account had been fraudulently charged. When I opened the Gcash app, I requested an OTP, and ten hours later it was sent. There are many problems with this app, and it's difficult to create a ticket, which is required if you need help. Kindly shut down Gcash and release a better wallet app for the Philippines by 2025. Much obliged!*	Avelino December	NA
2	*In my entire life, I have never encountered customer service this slow. On December 18, 2024, I successfully deducted 10,000 pesos from my bank account through a cash-in transaction, but I received a message on my GCash app stating that the cash-in did not proceed. As of today, January 25, 2025, there is still no resolution despite my providing proof of payment.*	Ohrly	NA

3	*"I have used G Cash for two years. Most times it works properly so it's easy to forget that you really can't trust that it will work when you really need it. When there is a problem logging in, the system will say something is wrong, but won't tell you what specifically is wrong. They love using "try again later." I was trying to send money to my friend's nephew for ice cream. That will have to wait."*	Glen D Christensen	NA
4	*"The most expensive financial service in the world, the gcrypto service, is a scam, they tell you the fees on the website and charge you double sometimes more, stay away, use any alternatives , use cash , use anything but gcash".*	loudini jaafar	NA

Table 3: Author's Compilation, (Trustpilot, 2025).

CoDi in Mexico

Banxico, Mexico's central bank, introduced CoDi (Cobro Digital) in 2019 to hasten the nation's shift to a cashless economy. CoDi functions as a real-time payment platform that enables users to use mobile devices and QR codes to make both online and offline purchases. In a nation where roughly 56% of the workforce works in the unorganised sector and frequently relies heavily on cash, CoDi is intended to promote financial inclusion by reducing cash dependency (Oliver et al., 2021).

Since its establishment, CoDi has experienced substantial growth. The annual value of transactions increased by nearly 600 million Mexican pesos in 2022, reaching about 2.5 billion pesos, or 127 million US dollars, through online transfers (Statista, 2025). The platform has helped reduce Mexico's cash usage by 11 percentage points over the last decade.

The adoption of CoDi has been slower than anticipated, in contrast to other countries like Brazil where instant payments are more prevalent.

One barrier is small businesses' and informal workers' resistance to moving from cash to other payment methods. The low internet penetration in rural areas is another obstacle to the widespread adoption of CoDi. Nonetheless, CoDi remains a crucial tool in Mexico's initiatives to advance financial inclusion and cashless transactions.

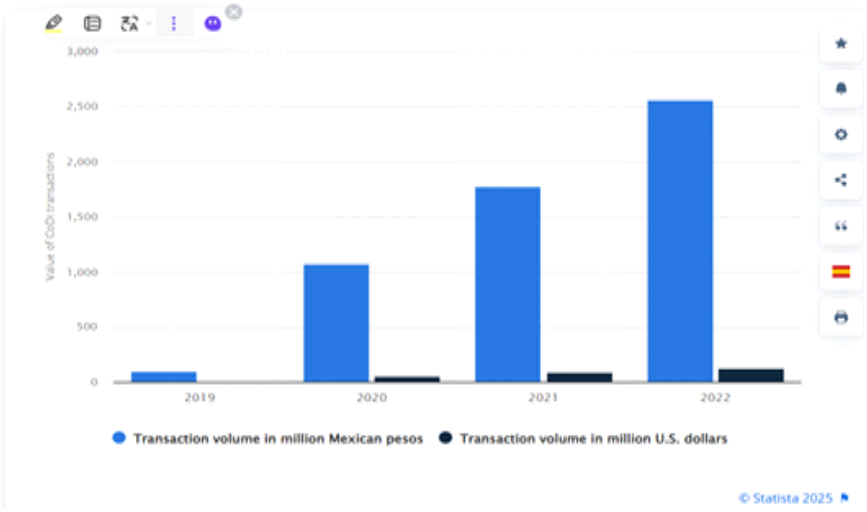

Fig 2: Value of real time payment in Mexico with local Scheme CoDi from 2019-2022 (Statista , 2025).

Pix in Brazil

In November 2020, Brazil's Central Bank introduced Pix, a real-time digital payment system that revolutionised the country's financial system. Using recipient information, QR codes, or mobile apps, Pix allows users to send and receive money instantly. This system has greatly aided in financial inclusion, especially for those who were not previously banked, and has been widely adopted in Brazil. According to Abecs (2025), Pix increased by 74% by 2023, handling nearly 42 billion payments and 23% more than credit and debit card transactions.

Pix's success is ascribed to its low transaction costs, ease of use, and round-the-clock operation. Brazil's Bolsa Familia programme, which aids

low-income families, has been especially affected. More than 90% of Brazilians, or about 160 million people, have bank accounts now, compared to just 35% of recipients prior to Pix (IFM Correspondent, 2025). Many citizens now have the ability to engage in the digital economy and obtain formal financial services thanks to this transformation.

However, Pix's rapid growth has also presented challenges. Some critics claim that because of its widespread use, there is a greater chance of fraud and cybercrime. Despite these concerns, Pix remains an essential part of Brazil's efforts to transition to a cashless economy, boosting productivity and economic engagement.

Users Reviews of Pix, Brazil

S/N	Review	Reviewer	Portfolio
1	*"Pretty much like Zelle, the difference being that Pix was implemented by the government so every bank in Brazil that you have an account you are able to generate a Pix key, using your cpf (similar to social security number), email, phone, or a coded key."*	**rgoes2**	
2	*"PIX is a digital money transfer modality. Like, say, wire transfer. All banks in Brazil have this modality, which is free and works at most times, making it more efficient than other money transfer modalities for daily transactions, successfully digitising many transactions, and doing so without needing a third-party wallet unlike [how it] is done in many places (where you'd have your bank account, but manage daily digital transfers through digital wallets)."*	**araralc**	

3	*"I don't know what Zelle is. Pix is pretty much the same as Venmo or CashApp. It's an instantaneous cash transfer service. The only difference is you pay no fees as it's run by the Central Bank and not a private company. It only works between two Brazilian bank accounts. You can't open a bank account in Brazil unless you have a Brazilian tax number (CPF)."*	**nostraw-berries**	
4	*Pix has already been explained. When it comes to sending money to v5axik, wise is definitely recommended. It does require access to a brazilian bank account though. When I transfer my salary it takes seconds to reach my Brazilian bank account.*	**UserName-IsBack**	

Table 4: Author's Compilation (Reddit, 2025).

Discussion of Findings

This section presents the study's findings, which are supported by relevant theories and evidence from reliable sources. Each objective is addressed under a different theme, ensuring a comprehensive analysis of the ways FinTech impacts sustainable economic growth and financial inclusion in developing countries.

The Role of Fintech Solutions in Enhancing Financial Inclusion

Fintech solutions have greatly enhanced financial inclusion in developing countries through mobile-based financial services like Paystack in Nigeria, GCash in the Philippines, and M-Pesa in Kenya. The success of M-Pesa, which has more than 66 million active users in Africa and has enabled financial access in remote areas that traditional banks were previously unable to reach, serves as a significant example (Matheson, 2016; Statista, 2025). The financial intermediation theory, which highlights the function of

middlemen in enhancing resource allocation, is demonstrated by these platforms, which close the gap between savers and borrowers. The decentralised nature of these FinTech platforms has disrupted traditional financial intermediation by offering banking services to the unbanked and underbanked (Adesola Oluwatosin Adelaja et al., 2024; Diamond & Dybvig, 1983).

However, despite these positive developments, challenges remain, particularly in rural and impoverished areas where low levels of digital literacy and inadequate infrastructure limit adoption (Ozili, 2018; Yu, Bekerian, and Osback, 2024). The innovation diffusion theory emphasises this slow adoption, especially for older, rural populations that face technological barriers (Bilal and Jaghdani, 2024; Rogers, 2003). Despite the success of M-Pesa and Pay-stack in urban areas, more needs to be done to promote inclusive growth in more rural areas (Mahmud, Joarder, & Muheymin-Us-Sakib, 2022).

The Relationship Between Financial Inclusion and Sustainable Economic Growth

There is a strong positive correlation between financial inclusion and sustainable economic growth, particularly when considering how FinTech assists individuals and MSMEs in obtaining loans, making investments, and launching their own enterprises (King & Levine, 1993; Klapper et al., 2016 Sharma, Ilavarasan, and Karanasios, 2023). The introduction of Paystack in Nigeria has improved the business environment and encouraged the creation of jobs and revenue by facilitating digital transactions, especially for small businesses (TechCrunch, 2021). In the Philippines, GCash has provided financial services to millions of previously unbanked Filipinos, thereby encouraging broader economic participation (WARC, 2022).

Economic growth theory, particularly the endogenous growth model, supports the notion that financial inclusion promotes capital accumulation, technological advancement, and the development of human capital, all of which contribute to sustainable economic growth (Fatima et al., 2020; Romer, 1990). This is evident in countries like Brazil, where Pix has significantly expanded access to financial services for low-income individuals, boosting productivity and enabling participation in the digital economy (IFM

Correspondent, 2025). Through the facilitation of credit access and the reduction of transaction costs, fintech has significantly contributed to sustainable economic growth in developing countries.

However, there are some issues with the relationship between economic growth and financial inclusion. Economic growth theories warn that rapid credit expansion without robust consumer protections can lead to unstable finances and increased debt levels (Bezemer et al., 2021; Klapper et al., 2016). The rapid adoption of FinTech services, such as mobile lending platforms, may lead to unsustainable financial practices, especially in markets with minimal regulatory oversight (Arner et al., 2017; International Monetary Fund, 2022).

Challenges and Risks Associated with Fintech Adoption

FinTech solutions have many positive effects on economic growth and financial inclusion, but they also carry a number of risks, especially when it comes to cybersecurity, regulatory gaps, and unequal access to digital platforms. The absence of strong regulatory frameworks in developing nations to effectively manage the risks connected to digital financial services is one of the biggest challenges (Pazarbasioglu et al., 2020). For example, there is a greater chance of fraud, data breaches, and systemic financial instability because many FinTech platforms function outside the jurisdiction of central banks (Philippon, 2016; Kotovskaya, 2024).

Furthermore, if FinTech adoption differs across different societal segments, diffusion theory suggests that the digital divide could get worse. Initiatives for financial inclusion have a limited reach in rural areas because low levels of digital literacy and insufficient infrastructure are impeding the widespread adoption of FinTech solutions (Adel, 2024; Gomber et al., 2017). Improving digital literacy and expanding internet infrastructure are two targeted interventions that are necessary to address these problems and guarantee equitable access to FinTech services (Belmonte et al., 2024).

The findings demonstrate that although FinTech solutions have proven essential in promoting sustainable economic growth and improving financial inclusion, there are still many obstacles to overcome. To fully realise the potential of FinTech in developing countries, policymakers and financial institutions must collaborate to address the technological, infrastructure,

and regulatory obstacles. Long-term equitable and sustainable economic development will be greatly aided by these initiatives.

Conclusion

This study has demonstrated that FinTech solutions significantly enhance financial inclusion and promote stable, sustainable economic growth in developing countries. By increasing financial services' accessibility for the underserved populations, particularly through mobile-based platforms like M-Pesa, GCash, and Paystack, fintech has bridged the gaps left by traditional banking systems.

The findings show the close relationship between financial inclusion and economic growth, especially in terms of promoting entrepreneurship, job creation, and revenue generation. However, there are challenges to adopting fintech, including cybersecurity risks, regulatory voids, and unequal access in rural areas. These risks underline the need for robust legislative frameworks and targeted programmes to promote digital literacy and infrastructure development. Ultimately, FinTech has a lot of potentials to support inclusive growth, but its long-term sustainability depends on eliminating the socioeconomic and technological barriers that are preventing widespread adoption.

Recommendation

The study's findings indicate that establishing robust regulatory frameworks to keep an eye on the expanding FinTech sector should be a top priority for regulators and policymakers in developing countries. Laws governing data security, consumer protection, and fraud prevention need to be reinforced in order to lower the risks associated with digital financial services. Governments should also invest in improving digital infrastructure and promoting digital literacy, particularly in rural and underserved areas, to ensure equitable access to FinTech solutions. Together, governments, financial institutions, and FinTech businesses can encourage innovation and equitable economic growth. Finally, more research is needed to examine how FinTech will affect financial stability in the long run and to develop strategies for overcoming adoption barriers in low-income communities.

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