A Literature Review on How Do Different FinTech Innovations Influence Consumer Behaviour and Contribute to Financial Inclusion in African, Asian, and Latin Developing Countries

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Table of Contents

List of Tables

List of Figures

Abbreviations

P2P ----- Peer-to-Peer

SEM ----- Structural Equation Modelling

TAM ----- Technology Acceptance Model

UTAUT ----- Unified Theory of Acceptance and Use of Technology

RCT ----- Randomized Controlled Trial

CBDC ----- Central Bank Digital Currency

API ----- Application Programming Interface

BOP ----- Bottom of the Pyramid

UX ----- User Experience

AI ----- Artificial Intelligence

DeFi ----- Decentralized Finance

MFI ----- Microfinance Institution

OLS ----- Ordinary Least Squares

Abstract

Financial technology (FinTech) has rapidly transformed financial access and usage in developing economies where traditional banking remains limited. The purpose of this review is to find out how mobile money, digital banking, blockchain applications, and peer-to-peer lending affect consumer behaviour and financial inclusion, to understand the factors that help or hinder their use by underserved groups, to see how they change saving, spending, borrowing and investing, to assess their effects on empowerment, entrepreneurship and resistance to shocks and to study the associated risks and privacy issues. A systematic analysis of 99 peer-reviewed studies (2015–2025) reveals substantial increases in account ownership, reductions in transaction costs, and more deliberate financial planning. Mobile money platforms have improved households' ability to handle shocks, thanks to easier remittances and better saving habits. At the same time, digital banks and P2P lenders have made it easier for small entrepreneurs to get credit despite the lack of digital knowledge, trust and infrastructure in many areas. Although blockchain can provide secure and transparent remittances and identity management, its use in underserved areas is limited by its complexity and uncertain rules. People are more likely to adopt digital services if they have reliable internet, simple digital skills and trust providers, but identification rules, uneven infrastructure, and vague regulations often stop progress. Risks like over-indebtedness, data breaches, fraud and leaving out the least connected people prove that technology is not enough for everyone to benefit. Future studies should focus on long-term behaviours after adopting FinTech, how regulations work, and the situations of marginalized people to guide the growth of fair and stable FinTech systems in developing countries.

Keywords: FinTech, consumer behaviour, financial inclusion, mobile money, digital banking, blockchain, developing countries.

CHAPTER 1: Introduction

1. Introduction

1.1 Background of the Study

FinTechs have been the recent sensation in the financial services landscape in recent years. It is pursued by innovations like mobile banking, peer-to-peer lending, bitcoin and blockchain technology, and digital payment platforms that have rewritten the game's rules on financial systems by changing how people and businesses should interact with the financial systems. FinTech innovations have greatly helped provide needed financial services to people in developing countries where traditional banking infrastructure is either unformed or inaccessible, as is the case beyond developed countries (Mothobi & Grzybowski, 2017).

The increased existence of mobile money services in Kenya via M-Shwari and blockchain-based remittance solutions in the African and Latin American context are examples of the growing upward clout that FinTech is having on consumer behaviour as well as economic participation (Suri et al., 2021; Campbell-Verduyn & Giumelli, 2022). The emergence of FinTech has allowed users to carry out financial transactions, take small loans, save solutions, and even invest in a simple mobile platform without the need for a conventional bank account. Therefore, this technological evolution transforms financial habits and prompts the achievement of the financial inclusion objective set by the World Bank and the United Nations.

FinTech has considerable potential but has not fully diffused; its spread is still uneven, and this spread is heavily linked to socioeconomic, regulatory and infrastructural factors. At the same time, it is determined by the level of adoption rates and impact levels in different regions (Gupta & Kanungo, 2022; Abbasi et al., 2021) and is dependent on the level of consumer trust, digital literacy, and policy frameworks. It follows that any study of how

FinTech innovations affect and inspire consumer behaviour should and has already been pertinent to the field of inclusive finance, and knowing this has been the focus of both scholarly interrogation and policy development.

1.2 Problem Statement and Justification

While the potential of FinTech to cause disruptive and inclusive change globally has been recognized, validating that it does is still embryonic in developing countries. According to Gupta and Kanungo (2022), digital financial platforms help offer low-cost and sustainable banking to those at the bottom of the pyramid. However, Gabor and Brooks (2016) note that the lack of regulation in the digital finance field could lead to new forms of dependence and unclear power structures. However, when the digital-finance market is not tightly regulated, there are worries about how safe people are, the risk of systems failing and the possibility of becoming overly dependent on difficult-to-understand algorithms.

The rationale for this research comes from the necessity to balance current findings and to identify patterns, challenges, and gaps in knowledge that the FinTech innovations have in relation to varying financial decisions that have implications (positive and negative) on the inclusion outcomes of individuals. This gap is bridged by a comprehensive literature review, which provides useful information for researchers, practitioners, and policymakers on how to design FinTech interventions that are scalable and equitable.

1.3 Research Questions

The overarching research question that guides this study is:

- How do FinTech innovations influence consumer behaviour and financial inclusion in developing countries?

The following sub-questions support this central question:

- What behavioural changes are associated with the adoption of specific FinTech services such as mobile money, digital banking, blockchain, and P2P lending?
- What are the enablers and barriers to FinTech adoption among underserved populations?
- How do FinTech platforms reshape saving, spending, borrowing, and investment decisions?
- What socio-economic outcomes are linked to increased financial inclusion through FinTech?
- What risks or unintended consequences accompany the widespread adoption of FinTech tools?

1.4 Research Objectives

The primary objective of this systematic literature review is to critically analyze how FinTech innovations affect consumer financial behaviour and contribute to financial inclusion in developing economies. Specific objectives include:

- To identify and describe the behavioural changes among consumers resulting from the adoption of key FinTech services—mobile money, digital banking, blockchain, and P2P lending—in developing countries.
- To explore the enablers and barriers that influence FinTech adoption among underserved populations in developing countries.
- To investigate how FinTech platforms reshape consumer saving, spending, borrowing, and investment decisions in developing countries.
- To assess the socio-economic outcomes, such as economic empowerment and poverty reduction, linked to increased financial inclusion through FinTech

- To examine the risks, unintended consequences, and security and privacy challenges associated with the widespread adoption of FinTech tools in developing countries.

1.5 Significance of the Study

The findings of this research matter for academic, policy and practical purposes. The study combines the findings from 99 peer-reviewed articles over a decade (2015–2025) to show how mobile money, digital banking, blockchain and peer-to-peer lending have shaped people's financial habits and lives in developing countries. Rather than fragmented studies, this review gathers a range of theories, methods and findings to explain how FinTech could transform the financial sector.

Policymakers and regulators find the study important as they must decide how to encourage innovation without endangering those who use these products. The study's findings help shape policies that make digital finance fair and responsible. The research helps financial service providers and FinTech developers learn about what users like, what stops them from using new technologies and what helps them use them. These findings help create tools that are accessible, easy to use and effective for people in need.

The study also adds to the academic field by pointing out important gaps in research, such as not having enough long-term evidence, not paying enough attention to what happens after adoption and underrepresenting marginalized groups, leading to new suggestions for future FinTech research focused on inclusion and sustainability.

CHAPTER 2: Literature Review

2.1 Overview of FinTech in Developing Economies

Each FinTech area addresses particular issues in traditional banking and attracts specific user groups. For example, mobile money services are mainly made for people without bank accounts who need to move, pay or save money. On the other hand, digital banking platforms might appeal to people living in cities who use technology by offering services that are similar to or built on standard banking. P2P lending is popular among consumers and small companies who want another way to get credit, and blockchain technology is used to make transactions, identity checks and remittances safer, more transparent and more efficient.

FinTech is making it easier for people in developing countries to use financial services by removing old barriers. According to Munyegera and Matsumoto (2015), using mobile money in rural Uganda helps families keep their spending steady during emergencies and continue investing in themselves. Because of mobile devices and cheaper digital tools, FinTech has grown rapidly in Sub-Saharan Africa, South Asia and Latin America (Asongu & Roux, 2023; Gupta & Kanungo, 2022).

In developing countries, FinTech provides solutions for problems in financial institutions by offering mobile payments, savings options, credit, insurance and digital investments. People find these services more straightforward, more affordable, and easier to get than traditional banks' services. For example, in Kenya, M-Shwari has made it possible for millions to conduct everyday transactions, send money and get microfinance services without visiting a bank branch (Suri et al., 2021).

The demographics of FinTech users add another factor to consider when developing FinTech in developing countries. Mobile money services help increase entrepreneurship more for youth and prime-age adults than for the elderly and those in rural areas but not urban

areas. It is important to mention that women experience a strong positive effect on their business results. (Koomson et al., 2022). As a result, designers of inclusive FinTech should consider the users' habits and how trust is built within their cultures

Notably, technology adoption is only one aspect of FinTech's success in the developing economies; importantly, behavioural responses of consumers are also required. As for literature, it points out that perceived service affordability within the concept of service and convenience, and perceived security are what motivate the FinTech adoption. Companies can use cloud computing, big data, and AI to give consumers easy digital payments, credit scoring, and automatic savings through their usual platforms. As a result, borrowing becomes easier and more open, encouraging people to use more organized financial methods that fit their changing spending habits (Yuan, 2024).

Overall, the promise and persistence of disparity in the FinTech landscape in developing economies are summarized. While digital finance is well-suited for rapid expansion of its reach, it could become a pathway to financial inclusion and consumer empowerment only if it is introduced in the local context, with the diversity of the population to be served and systemic emboldening in view. In this respect, the behaviour and the inclusion of FinTech adoption remain a must to be understood for sustainable development and equitable growth.

2.2 FinTech and Consumer Behaviour

FinTech innovations are more than technology; they influence how people view, access and use financial services. Thanks to FinTech, people in developing countries can now use services that allow fast transactions, unique financial offerings and easy user interaction. As a result of these technologies, people now have different habits for spending, managing money and deciding on savings, loans and investments.

The way consumers behave in FinTech is determined by several things, such as how easy they think the system is to use, how useful it seems, their trust in it, the influence of others and their ability to use technology. For instance, Sultana et al. (2023) used the extended UTAUT model to survey undergraduates and found that two main factors affected their use of FinTech. First, students' belief in how useful a FinTech service will be is a key factor in predicting their intention to use it. Additionally, how simple users find the platform to use is a key factor. In short, if students notice the advantages and have an easy-to-use interface, they are much more willing to use FinTech services.

Blockchain and cryptocurrency technologies have become important and disruptive parts of FinTech, providing new, safe and clear options for financial services. Blockchain uses a distributed ledger system, which means transactions are recorded on several computers so they cannot be changed after the fact without the network's permission. Da Silva and Moro (2021) state that blockchain technology can increase consumer confidence. They use text-mining to review the literature and find that three main elements—immutable ledgers, decentralized validation, and increased traceability—are always important for users' confidence in distributed-ledger systems. On the other hand, the lack of clear regulations and worries about security and reliability, including system failures and fraud, prevent people from trusting blockchain-based financial services. When consumer-protection rules are not well established, digital banking users can easily be affected by hidden charges, complex algorithms, and greater risks with their data (Nalluri & Chen, 2023).

Furthermore, P2P lending has made it easier for people to borrow by removing old rules and using technology to help decide who gets credit. According to Abbasi et al. (2021), as the number of P2P FinTechs rises, small and medium enterprises use these platforms more often to get the funds they need, thanks to better credit scoring and lower interest rates because of lower costs. At the same time, Bartlett et al. (2021) reveal that algorithmic

underwriting on consumer-lending platforms can shape the costs and access of borrowing for minorities, as they are often charged higher interest rates, showing that the way platforms and algorithms work can affect trust and fairness, which then guide consumers' decision on where to borrow. These studies point out that P2P lending's data-driven approach increases access to credit and affects borrowers' behaviour because of its convenience, lower costs, and fairness.

In short, FinTech is changing the way people and society handle their finances. It affects both people's behaviours and their views on financial inclusion, trust, autonomy and opportunity. Learning about these changes is very important for making digital finance solutions that are suitable for developing countries.

2.3 FinTech and Financial Inclusion

Innovations in FinTech are now widely seen as helpful for including marginalized populations in the financial sector, since regular banking services are not available to them. Access to financial services such as savings, credit, insurance and payments has become increasingly important in policy and development circles.

The latest studies indicate that the presence of trustworthy and well-trained mobile money agents helps more people access financial services. When agents are credible and provide good service, customers trust using mobile money and keep using it. It ensures that people who do not have access to banking can now use its services (Shaikh et al., 2022). On the other hand, extensive survey reviews show that people's backgrounds and income still influence who benefits from FinTech. According to Zins and Weill (2016), the Global Findex shows that men, wealthier and better-educated people, and older individuals tend to use financial services more than others, which means that FinTech may initially widen rather than close the traditional gaps in financial inclusion.

How FinTech is included in society depends on the policies in place. In India, regions with well-defined rules and dedicated programs for FinTech contribute more to the economy's growth, meaning that official support can help spread inclusive services and make them more beneficial (Sreenu & Verma, 2024). Conversely, a review of mobile money in Africa points out that if persistent problems like data privacy, inadequate infrastructure, and unclear stakeholder benefits remain, low-income consumers may not be included unless policymakers design specific measures to help them (Osabutey & Jackson, 2024).

All in all, it is clear that for FinTech to include more people, it needs advanced platforms and reliable methods, fair access to all groups, and strong support from regulators. For digital finance to provide affordable, safe, and lasting financial services to those in need, it must work with reliable agent networks and have strong policies and designs.

2.4 Overview of Research Methodologies in Reviewed Literature

An analysis of the 99 peer-reviewed articles reviewed reveals a diverse application of research methodologies to study FinTech innovations, consumer behaviour, and financial inclusion. These methodologies can broadly be categorized into quantitative, qualitative, and mixed-method approaches.

2.4.1 Quantitative Methods Approach

The most common method in the FinTech literature is quantitative techniques, which are used in 55 articles out of 99 reviewed. The most frequently used regression frameworks include ordinary least squares (OLS), logit, probit, and panel-data models, which researchers mainly apply to estimate the digital-finance adoption relationship with outcomes. As an example, Munyegera and Matsumoto (2015) employ fixed-effects panel regressions on a five-year household survey in rural Uganda to demonstrate that recipients of mobile money

remittances have much smoother consumption trajectories in response to rainfall shocks. Similarly, Apeti (2022) uses panel data covering several developing countries and employs OLS and fixed-effects models to estimate the degree to which the adoption of mobile -money can decrease household consumption volatility.

Structural Equation Modelling (SEM) is a standard method for researchers to study the relationships between several latent constructs simultaneously. Sultana et al. (2023) used SEM in an extended UTAUT framework to study how performance expectancy, effort expectancy, and facilitating conditions together affect undergraduates' intentions to adopt FinTech services, finding that the model fits well and key constructs had significant effects. SEM is well-suited for assessing models such as TAM and UTAUT in FinTech situations since it checks both the accuracy of measures and the relationships between variables in one analysis.

Econometric modelling of time series and panel data is used to examine broader trends and policy effects in financial markets. The authors used time-series econometrics to study the changing relationship between P2P lending and cryptocurrency trading in developing countries. Their results showed that the unpredictable movements of crypto prices can influence the stability of alternative lending.

Overall, quantitative research focuses on identifying patterns and generalizing findings across populations. It is most effective when targeting large user bases, measuring adoption and impact, and evaluating policy effectiveness. However, it may not fully capture localized user experiences, trust dynamics, or social and cultural barriers to adoption. Approximately 55% of the reviewed studies employed quantitative methods, often utilizing survey data, financial transaction datasets, or platform-level analytics. These studies typically rely on statistical tools such as regression analysis, structural equation modelling (SEM), or machine learning algorithms to see how FinTech adoption impacts consumer behaviour

2.4.2 Qualitative Method Approach

To learn about the different experiences and factors in consumer use of digital financial tools, FinTech research mainly uses qualitative methods. About 33% of the 99 reviewed studies used qualitative approaches to learn about the social, cultural and behavioural factors of FinTech adoption among less-served and vulnerable customers. These methods are instrumental when we want to know the reasons behind consumer behaviour with financial technology.

Researchers frequently use in-depth interviews to get insight into the motivations and experiences of users. In their study, researchers spoke with people in East Africa and South Asia to learn about reasons for leaving mobile money platforms. The study found that women faced several obstacles to leaving, including not knowing how to use technology, not owning a phone or other device and being kept from leaving by others in their community. These findings helped make clear how social norms and family power structures influence whether or not FinTech is used, which could not have been discovered through a survey alone.

Institutional discourse and policy analysis are applied to analyze FinTech discourses and policies. Campbell-Verduyn and Giumelli (2022) report that discourse analysis is used to study blockchain inclusion projects in Africa, and many of these, while presented as supporting decolonization or empowerment, were led by foreign tech companies and investors who could maintain the existing global hierarchy. For this reason, these studies reveal how power dynamics affect and are affected by the language and systems of global finance in the FinTech sector.

Case studies are another well-known approach to thoroughly analyze the FinTech implementation, platform or digital strategy used at the national level. They make it possible for researchers to study whether M-Shwari in Kenya, bKash in Bangladesh or blockchain-

based remittance systems will succeed or not. This work includes examining data from interviews, company reports and regulatory papers.

When generalizability is not an issue, qualitative studies give insight into the success or failure of FinTech tools, what users believe financial risk means and the impact of social factors on their decisions. In particular, their use is especially needed in developing countries where social customs, informal markets and trust within communities guide financial behaviour.

In total, 33% of the studies reviewed were qualitative, and they played a unique and important role. They enable the researcher and policy-maker to better understand the social aspects of FinTech adoption to design inclusive and relevant digital financial services. FinTech research adds qualitative information to the quantitative models to make the research better and more meaningful by helping innovation reach more people in the real world.

2.4.3 Mixed Methods Approach

Mixed methods research is used to investigate the adoption of FinTech, its effects on behaviour and the results of financial inclusion. Around 11% of the 99 articles that use mixed methods suggest that mixed methods are seen as a valuable approach for linking numbers with stories to gain better and richer insights. This method works well because statistics alone cannot fully represent it, especially when studying FinTech, where digital actions are linked to social habits, infrastructure and how much users trust the systems.

Many FinTech researchers use the sequential explanatory design as a common mixed methods approach. The first thing to do is gather data in numbers, such as survey answers, adoption trends and financial behaviour and then analyze that data. Initially, researchers can use quantitative methods to study the main reasons for adoption. As an example, Nugraha et al. (2022) surveyed 415 SMEs in Indonesia, asked them to complete questionnaires and used

PLS-SEM to find that perceived usefulness, perceived ease of use, government support, trust and user innovativeness were the most important factors influencing FinTech adoption Bouteraa et al. (2023) also used a stepwise method to study what prevents people in the United Arab Emirates from using FinTech. At the start, experts were consulted to find the main themes, and then a large survey of 332 bank customers was carried out.

Even though those strengths exist, mixed methods research takes many resources and requires much expertise and time. Integrating data can be challenging and requires researchers to use numbers and words. Nevertheless, mixed-method research helps us understand more about these challenges, which are important for current FinTech research.

In short, only a few articles used mixed methods, yet their influence is greater than their number. With these studies, the statistical strength of quantitative models can be added to the real-life findings from qualitative research. In FinTech areas where these tools vary by context, a combined approach using different methods allows a clearer picture of how digital financial inclusion works in practice.

2.5Theoretical Frameworks

There is a need to anchor in existing theoretical models to understand how FinTech innovations affect consumer behaviour and financial inclusion. These frameworks offer the instruments to evaluate adoption patterns, behavioural reactions and system-level consequences, particularly in quickly changing digital financial ecosystems.

The Technology Acceptance Model (TAM) has been extensively applied in FinTech. Perceived usefulness and perceived ease of use, core TAM constructs, are shown by Khuong et al. (2022) to significantly predict Vietnamese youth's intention to adopt mobile banking and digital wallet services.

Unified Theory of Acceptance and Use of Technology (UTAUT) combines eight previous models of technology acceptance into one framework that includes performance expectancy, effort expectancy, social influence and facilitating conditions and also looks at four moderators: gender, age, experience, and whether the use was voluntary (Venkatesh et al., 2003). In FinTech, performance expectancy shows how much users believe a digital wallet or peer-to-peer lending app will help them with their finances, and effort expectancy demonstrates how easy they think using a mobile banking interface is. When people in a community or social circle back to a payment platform, it encourages those unsure to use it. In the end, having dependable internet and a smartphone is important for making practical use of technology in poorly served areas. Considering these factors and boundary conditions, UTAUT explains a lot of the variation in FinTech adoption and can guide the development of digital financial services that are easier for users to use.

In addition to these adoption-focused models, theories of financial inclusion are also needed. The Financial Capability Framework, Sherraden (2013), defines effective financial inclusion as a combination of financial knowledge, skills, access and opportunity. This approach recognizes that providing technology tools like digital banking platforms or mobile wallets cannot provide favourable results. Users also have to have the cognitive and behavioural ability to manage money, make informed decisions and navigate financial products confidently. The framework emphasizes that in developing countries where large parts of the population may not have formal financial education or be digitally illiterate, access to FinTech should be accompanied by ongoing support systems, including user education, helplines, community-based digital literacy programmes and financial coaching. From this vantage point, a successful FinTech innovation is one that not only extends to more users but also allows them to become more financially well off by engaging with digital tools over time and responsibly. According to this viewpoint, FinTech is only helpful if customers embrace technology and use it to help them make wise financial decisions.

Another helpful viewpoint is the diffusion of innovations theory (Rogers, 2012). It describes how new technologies diffuse through society through different adopter types: innovators, early adopters, early majority, late majority and laggards. Their behaviour and feedback are shaping perceptions of the broader population. Once the social proof has been built and institutional support has strengthened, technologies may reach the early and late majority. This model allows us to understand why mobile wallets, digital banking and other services often succeed in metropolitan areas and then diffuse to rural or marginalized communities in the FinTech context. A number of factors, such as institutional trust, communication routes, perceived innovation value, and cultural compatibility, influence the diffusion process. FinTech solutions are only adopted at a low rate in underserved areas unless they are customized, culturally aligned and accompanied by awareness campaigns or community engagement.

From a sociotechnical perspective, Structuration Theory is applied to study the co-evolution of technology and social structures in financial systems (Turner, 1986). Human behaviour is influenced by social structures, such as institutions, rules and regulations, and power relations. At the same time, individuals can act to reshape these structures. In the FinTech context, digital tools do not function in isolation but somewhat shape and are shaped by existing societal arrangements. For example, FinTech innovations might enable people to use alternatives to traditional banks, but their design, availability, and take-up are profoundly cultural, regulatory and historically unequal. However, as Campbell-Verduyn and Giumelli (2022) point out, blockchain solutions may not necessarily be decentralizing. It strengthens already-existing disparities if money flows continue to be dominated by foreigners or if governance is imposed from outside.

Prospect Theory points out that people react more strongly to potential losses than potential gains (Kahneman & Tversky, 1979b). Because of this bias, people's reactions to

privacy concerns, loan offers and new technology are affected in FinTech. Mobile money users may overreact to data-leak fears and avoid convenient digital wallets, even if small fees or breaches are unlikely, so reassuring messaging about collective security can help. Peer-to-peer lending seems riskier than bank loans because a single default can be serious; investing in several small loans reduces the risk of losing it all. Blockchain's ability to keep records and transactions honest eases concerns about hacks, but using cryptography that people are not used to can still seem frightening.

Financial technology is now using these insights to improve the design of its products and interfaces for users. Mobile apps can help users by setting up default savings, sending reminders, or setting goals for regular savings or loan repayments. In countries where people do not have much financial experience, these tools become very important for increasing financial inclusion by teaching users how to act with their money.

In conclusion, these theories help to see how FinTech affects consumer habits and financial access. Each model focuses on different aspects: some outline how adoption happens, others focus on the factors that support or stop adoption, and some describe the behavioural results. Both approaches help explain the main reasons, problems and results of FinTech innovation for underserved people.

2.6 Identified Research Gaps

While a lot of research has been done on FinTech and its effects on consumers and financial inclusion, some key gaps are still present in the literature reviewed. First, many studies focus on how many people adopt technology, but not on how well it is used in the long term. Even though mobile money, digital banking and P2P lending platforms are gaining users, studies often overlook how people change their behaviour, how long they stay involved

and how deeply they engage with finances (Bernards, 2019). It is uncertain whether FinTech services lead to lasting financial control or only brief usage without much result.

Second, most of the literature is centred on a few regions. Many research studies on FinTech adoption and its effects concentrate on Kenya, India, China and Nigeria, with low-income and fragile states in Latin America, Southeast Asia and Sub-Saharan Africa being less studied. As a result of this geographic bias, we do not fully understand how FinTech works in various social, political and regulatory settings. Regional needs can only be understood through local studies, which should guide how FinTech is applied.

Furthermore, much research has been done on gender and rural inclusion, but only a few offer intersectional perspectives. People have not explored enough how gender is connected with age, education, disability or social norms to determine access and use of FinTech. There are unique problems that women in rural areas with little digital knowledge or smartphone access often face, which are often not considered. As a result, researchers should use designs that include and represent different user groups.

Fourth, although some studies use TAM or UTAUT to study technology adoption, few examine what happens after adoption, such as users dropping out, misusing the technology or facing unintended results. There is little proof that adoption leads to better financial inclusion or ability. In the same way, many theories about behavioural economics interventions (like using apps or gamified savings) are discussed.

Fifth, the research points to an increase in interest in blockchain and cryptocurrency, though most studies are still theoretical. Not many studies have looked at blockchain-based identity systems and remittance platforms designed for low-income people. In addition, a lot of blockchain-for-inclusion projects are still led from outside, which causes doubts about their

sustainability and whether communities truly own them. Studies that include users are needed to determine if these technologies help people or make them reliant on foreign systems.

In summary, the reviewed literature reflects a rich but uneven landscape. Future research should move beyond adoption metrics to explore long-term user outcomes, cover underrepresented regions, incorporate intersectional analysis, empirically evaluate emerging technologies, and assess the role of regulatory ecosystems. Addressing these gaps is critical for designing inclusive, effective, and context-sensitive FinTech solutions.

CHAPTER 03: Research Methodology

3.1 Research Design and Philosophy

The focus of this systematic literature review study is based on interpretivism principles, as it is consistent with an overarching aim to uncover how FinTech innovations interact with consumers' behaviours that reality is socially constructed and knowledge is a product of individual and group interpretations of the interaction of people in given cultural, institutional and technological environments (Louis et al., 1983). Since factors such as the level of trust, the cultural norms in a country, gender, and access to technology are important for adopting financial behaviour, this approach is perfect for research areas in which these factors play an important role in both adoption and outcomes.

Interpretivist researchers oppose statistical generalizations, claiming that the ideas of technology understanding, such as the use of FinTech and digital financial inclusion, cannot be understood except by exceeding statistical generalizations and calling to interpret what individuals think and do with technology (Orlikowski & Baroudi, 1991). This implies that in the case of this study, this means studying how users become users of mobile money, navigate digital credit systems, or interact with blockchain services, not as isolated, rational beings, but

as socially embedded and working off and influencing these economic conditions, digital literacy, social network, and institutional trust.

On the other hand, positivism is a philosophical stance that genuine knowledge comes only from observable, empirical evidence and logical or mathematical proof. Statements gain meaning through direct measurement or by being analytically true, while unobservable metaphysical claims are considered nonsensical. This approach insists on testable hypotheses, systematic observation, and quantification as the foundations for building reliable knowledge (Stace, 1944). However, most positivist FinTech studies tend to isolate variables, apply statistical models, and make generalizable conclusions about behaviour. Although these methods are very useful in pattern generation and correlation generation, such as the relationship between mobile banking usage and savings rate, such methods typically cannot unpack the subjective, sense and contextual features that lead to real-world adoption and usage patterns in heterogeneous populations (Bryman, 2016).

The interpretivist paradigm is philosophically sound because it looks at understanding instead of prediction, interpreting instead of measuring, and context instead of universality. It is helpful to use an approach that looks closely at the literature and combines insights from social, technological and behavioural aspects of using FinTech.

3.2 Research Approach and Strategy

The study uses a systematic review approach to examine 99 peer-reviewed articles that focus on the relationship between FinTech, consumer behaviour and financial inclusion in developing countries from 2015 to 2025. The study goes the opposite route: it does not test a hypothesis a priori but seeks to generate conceptual ideas by synthesizing existing scholarly evidence. In particular, this kind of research question is very appropriately tackled through an inductive approach if the emerging and socially embedded phenomena,

such as FinTech, are under study because theoretical frameworks are continuously evolving, and their context is deeply rooted and dynamic (Snyder, 2019; Tranfield et al., 2003).

Additionally, the strategy is especially appropriate for drawing attention to conceptual and empirical gaps in the literature. Recent review studies in other domains have demonstrated that systematic literature review syntheses are capable of identifying underexplored user groups, untested behavioural outcomes, and weaknesses of current research designs (Okoli & Schabram, 2010). This particular capability is perfectly in line with one of the central goals of this study, coming up with ways to develop future research to FinTech and digital inclusion in underserved contexts.

Consequently, the systematic literature review strategy provides a solid and context-dependent framework for analyzing how financial technologies impact consumer behaviour. This enables the research to maintain its methodological correctness while admitting interpretive depth, thus making it suitable to respond to the multi-dimensional and evolving character of FinTech's footprint in both the developed and developing economies.

3.3 Data Collection Methods

3.3.1 Literature Search Strategy

For this study, a literature search strategy has been designed to ensure that academic research on the relationship of FinTech innovation, consumer behaviour, and financial inclusion was systematically, comprehensively, and unbiassed collected. The aim was to locate and include a variety of peer-reviewed journal articles that critically address the impact of financial technologies on the behaviour of consumers of financial services and their access to financial services within low-income settings.

The process involved going through the data many times in a planned way. Initially, the research cycle focused on scoping how broad the research should be. After that, specific

criteria are used to decide which studies to include or exclude. The title and abstract are some of the criteria to determine if the studies were relevant. The full texts were studied to verify that they fit the study's main themes if considered relevant.

The same set of filters was applied at screening to be methodologically rigorous and transparent. Publication type (peer-reviewed journal articles), language (English) and date range (from 2015 to 2025) were included.

Duplicates and irrelevant materials were excluded throughout this process, and articles were put into a literature management tool to help code, synthesize and track references. In the end, 99 articles were included. The empirical and conceptual foundation for the analysis presented in later chapters and for answering the research questions was based on these articles, which were structured in a thematic review.

The following table summarizes the search parameters and eligibility criteria applied throughout the data collection phase:

Table 1: **Search Criteria**

Search Criteria	Eligibility Parameters
Databases	Google Scholar, ScienceDirect, SSRN
Evidence Criteria	Peer-reviewed academic journal articles
Keywords	FinTech, Financial Technology, Consumer Behaviour, Financial Inclusion, Mobile Money, Digital Banking, Digital Finance, Blockchain, Cryptocurrency, P2P

	Lending, Peer-to-peer, Crowdfunding, Digital Wallets,
Search within	Article title, abstract, and keywords
Language	English-language articles only
Time Period Covered	Articles published between 2015 and 2025

Note: Author constructed (2025)

3.3.2 Inclusion and Exclusion Criteria

During the selection of the articles for this study, the selection process was made rigorous to ensure the relevance, quality and consistency of the reviewed literature. They were defined to guide the review towards peer-reviewed academic research that directly addresses the meeting point between FinTech innovations, consumer financial behaviour and financial inclusion, in particular in developing and emerging economies.

The criteria used to include studies aimed to capture a broad set of studies spanning multiple disciplines (finance, business, Information Systems, behavioural sciences) within a particular field and exclude any fields that were not in the scope of digital financial services. The review was limited to the final stage, peer-reviewed journal articles published in English, in order to maintain scholarly quality.

On the other hand, studies with low academic rigour, limited relevance, or studies focusing on non-consumer-facing technologies were excluded as exclusion criteria. The excluded publications included non-English language publications, grey literature (such as white papers or opinion editorials), studies unrelated to FinTech, or studies of consumer behaviour (in biomedical science or pure engineering). Thus, the final sample was ensured to be a high-quality empirical or theoretical work related to the study's core objectives.

The following table provides a structured summary of the inclusion and exclusion parameters applied throughout the screening and selection process:

Table 2: Inclusion and exclusion criteria

Criterion	Inclusion Criteria	Exclusion Criteria
Time Period	2015-2025	All other years
Subject Area	- Business and Management - Economics and Finance - Information Systems - Development Studies - Behavioural Science	- Chemistry - Engineering (Non-FinTech) - Medicine and Life Sciences - Arts and Humanities - Pure Mathematics
Document Type	Peer-reviewed journal articles	- Conference papers - Book chapters - Editorials - Commentaries - White papers
Language	English	All non-English languages
Source	Academic journals	- Trade journals - News or media sources
Publication Stage	Final published articles	- Preprints - Articles in press

Note: Author constructed (2025)

3.3.3 Screening and Selection Process

A multi-stage process was used to screen and select the 99 peer-reviewed articles for this study to guarantee they were relevant, methodologically transparent and of high quality. The main aim of this stage was to sort through and choose studies that focused on how FinTech innovations, consumer actions, and financial inclusion connect in developing countries.

Stage 1: Initial Scoping Review

The research process started by searching six major databases—SSRN, ScienceDirect and Research Gate—with a wide range of keywords, such as "FinTech," "Mobile Money," "Digital Banking," "Blockchain," "Cryptocurrency," "Digital Wallets," "P2P Lending," "Consumer Behaviour," "Financial Inclusion," and "Developing Country OR specific country names." Only English-language, peer-reviewed journal articles published between January 2015 and February 2025 were considered. All in all, 5,620 records were found.

Before manual screening, the records were first checked for exclusions by an automated system. Specifically, 270 papers were removed because they were not published between 2015 and 2025; 4,825 were discarded because they were not peer-reviewed journal articles (conference papers or book chapters); 40 were non-English publications; 95 were in fields that had nothing to do with consumer or financial inclusion; and 29 were exact duplicates across one or more databases. With these exclusions, 5,259 records were removed, and 361 unique records were left to move to title and abstract screening.

Stage 2: Title and Abstract Screening

Out of the total, 361 titles and abstracts were studied to determine their relevance. At this point, any article that did not fit the research topic was not included. The following studies were not considered at the title/abstract level: (1) those that only focused on developed

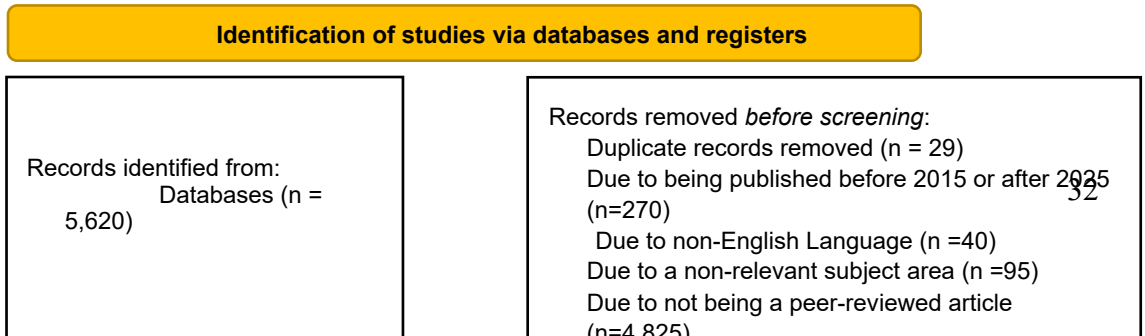
economies, (2) those without any consumer behaviour or financial inclusion results and (3) those that only discussed the technical side of FinTech without any consumer data. After the screening, 95 articles were eliminated as irrelevant, so only 316 remained for full-text review.

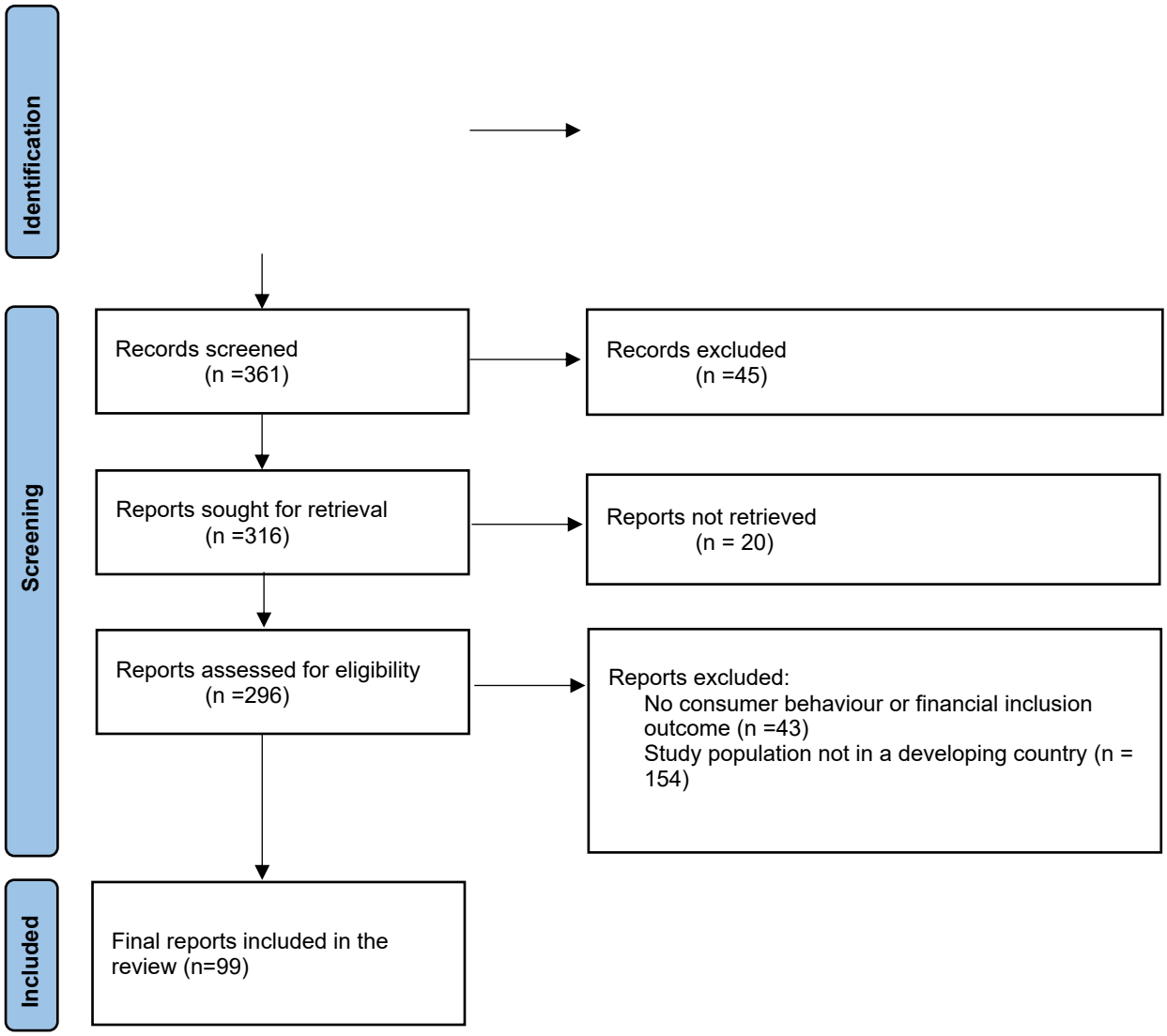
Stage 3: Full-Text Review and Thematic Relevance

Full-text PDFs were sought for all 316 abstracts that passed the title/abstract screen. Of these, 20 full texts could not be obtained (due to paywalls, broken links, or unresponsive authors), so 296 articles were successfully retrieved for detailed review. Each of these 296 full texts was assessed against stricter inclusion criteria: (1) empirical analysis of FinTech adoption or usage in low- or middle-income (developing-country) contexts, (2) examination of consumer-level behavioural changes resulting from FinTech innovations (for example, shifts in payment habits or savings practices), (3) evaluation of FinTech's contribution to financial inclusion outcomes (such as increased access to credit, improvements in saving or remittance behaviour, or enhanced resilience to economic shocks), and (4) evidence of rigorous, peer-reviewed research methods, such as surveys, experiments, regression analyses, or qualitative fieldwork.

As a result of the full-text review, 45 articles were excluded, 43 lacked a strong focus on consumer behaviour or financial inclusion despite mentioning FinTech; 154 were conducted in high-income or developed countries. As a result of the exclusions, 99 articles were kept for the final systematic review since they met all the criteria.

Figure 1: *PRISMA flow diagram*





The Quality Appraisal

The quality assessment of the included studies was conducted using a combination of established appraisal tools, including MMAT, CASP, and bibliometric to ensure a

comprehensive evaluation of methodological accuracy. This approach strengthened the validity of the overall synthesis by highlighting both methodological and potential limitations. A detailed summary of the appraisal process and scoring criteria is provided in the appendix.

3.4 Data Analysis

The data analysis for this study relied on a systematic literature review strategy method based on 99 peer-reviewed articles. All the articles were examined and interpreted to spot patterns linked to FinTech innovation, how people use money and financial inclusion. The analysis examined how different FinTech tools influence the financial actions of underserved people in developing countries, including saving, borrowing and managing risks.

Digital literacy, mobile infrastructure, regulations and cultural beliefs were all coded as important factors in the analysis. We then looked at articles in different regions and among different user groups to find out how their impact and use differed. As a result of this analysis, the study found that mobile money supports household resilience, while blockchain solutions have not reached many users despite their potential. Through the thematic synthesis, the study found important gaps in research on behaviour after adoption and the financial results over time, which are discussed and recommended in the following chapters.

3.5 Ethics and Limitations

3.5.1 Ethical Issues

All procedures in this study were based on ethical standards for systematic literature reviews and followed the principles of integrity, transparency and good methods. Since the research uses only secondary data from scholarly publications, no one is interviewed, and no personal data is processed. Nonetheless, ethics were taken into account in

the way the literature was chosen, assessed and explained. All studies in the review were presented as they were originally written, with attention given to not changing the authors' aims, methods or results.

When the studies involved people using digital financial technologies, the focus was on how those studies handled informed consent, data protection and proper use of digital tools. A well-balanced literature assessment was produced, and bias was avoided by using precise criteria for including and omitting research in the selection process. These considerations together increase the credibility, scholarly worth and integrity of this research.

3.5.2 Limitations of the Research

This study brings together a wide range of existing works on FinTech, consumer behaviour and financial inclusion in developing countries, but it has some limitations. At first, only peer-reviewed journal articles in English from 2015 to 2025 were examined, so studies published in other languages or as policy reports or industry white papers were not included. Because of this language and publication bias, the analysis may not reflect a wide range of global opinions.

Second, while the formal process helped select the best candidates, using secondary data limited the amount of contextual understanding. The fact that the included articles differ in their designs, breadth and how they were carried out may make it difficult to compare and generalize their results.

Since FinTech is always progressing, the academic literature could miss out on the latest trends and user actions because the innovations are not fully documented. Therefore, more research is needed in understudied areas and among various users to confirm and build on the results presented here.

CHAPTER 4: Results and Discussion

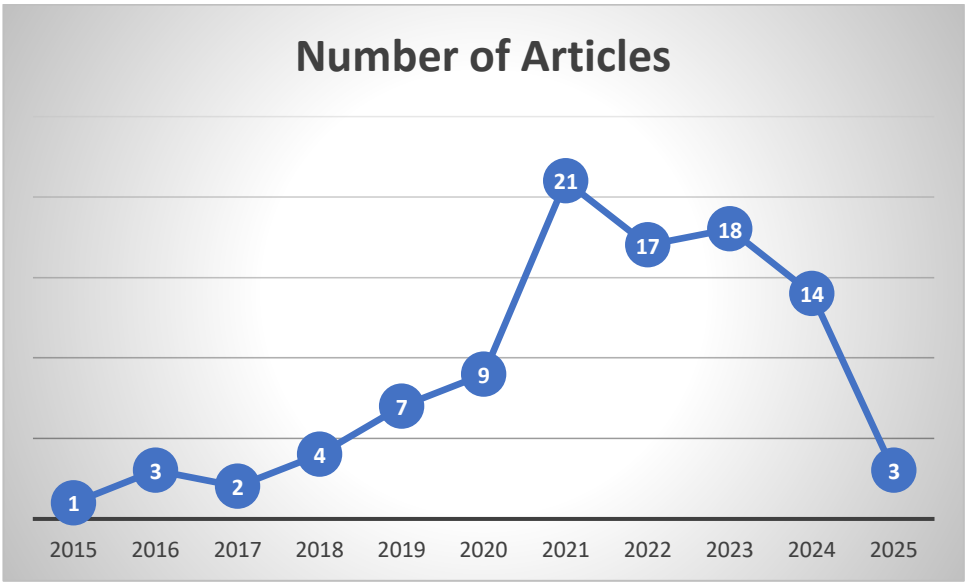
4.1 Descriptive Overview of Reviewed Literature

4.1.1 Publication Trends and Geographic Focus

The publication trend observed in this study reveals three distinct phases in the development of FinTech-related research, each shaped by external global events and shifting scholarly priorities.

Figure 2:

Annual scientific production of publications related to the effect of Fintech innovations on consumer behaviour and financial inclusion



Noted: Author constructed (2025)

Before 2020, there was little research on FinTech, and the number of publications increased slowly from 2015 to 2019. At this time, researchers in FinTech mainly looked at the early stages of mobile money, digital banking and new blockchain technologies. Gomber et al.

(2018) pointed out that digital platforms can help bring financial services to people who do not have access, yet empirical research was not as common then as it is now.

Starting in 2020, the number of FinTech-related articles rose quickly, reaching more than 21 by 2021. As the COVID-19 pandemic began and advanced, it led to a significant increase in the use of digital financial services worldwide. Because people could not visit branches and needed to avoid contact, there was a fast and broad increase in the use of mobile banking, digital wallets, and online lending platforms. In the same way, the World Bank (2022) found that digital payments were used much more widely around the world during the pandemic, mainly in low- and middle-income countries, confirming that digital financial tools were necessary for daily transactions and financial inclusion.

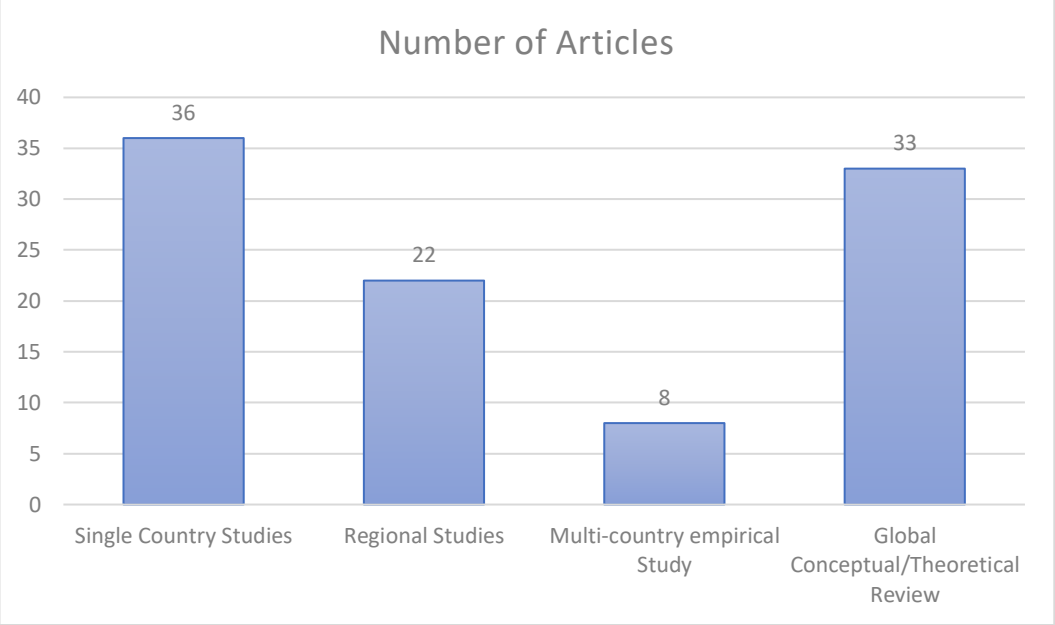
After the 2021 peak, the number of publications decreased in 2024. This could mean that the main themes, using digital payments and mobile money, are becoming common, so the field is shifting to explore AI-based financial services and FinTech, promoting sustainability. They argue that while the central area of FinTech inclusion research is still strong, other areas, such as climate-focused digital finance, ethical AI governance and algorithmic regulation, are becoming more popular, suggesting that research interests are evolving rather than decreasing.

The research trends of this decade demonstrate that the FinTech agenda has shifted in response to worldwide events, technological advances and new policies. The fast development from 2020 to 2022 confirms how important digital finance is for development, and the current diversification shows that the field is maturing and spreading into different areas of study. This timeline proves the value of the current study and places it in an active and developing field of study.

4.1.2 Geographic Categorization Framework for Synthesizing FinTech Literature

A four-geographic-level framework brings together information from 99 studies on digital financial inclusion and behaviour. The first group, global conceptual works, contains literature reviews, meta-analyses and theoretical papers that deal with FinTech topics worldwide; these were chosen because they combine different types of evidence or develop new concepts rather than reporting data only from a single country. A four-geographic-level framework brings together information from 99 studies on digital financial inclusion and behaviour. The next level, single-country deep dives, focuses on a single market, uncovering the small-scale ways people shop, the rules they must follow and the challenges in their infrastructure.

Figure 3: Geographic categorization of articles



Noted: Author constructed (2025)

The design of this hierarchy ensures that both theory and data are well represented. Universal definitions of financial inclusion, diffusion of innovations, and institutional voids are explained in global conceptual works, leading to hypotheses that can be tested in real life. Multi-country comparisons look at these hypotheses in different regulatory and infrastructural settings to determine what works best in each place and help decide which variables and models to use. Regional studies combine theoretical concepts and real-life examples by studying several countries at once. Single-country investigations allow to see how the local environment affects FinTech use and its outcomes.

The use of the four-tiered approach helps accomplish three important things. To start, all relevant studies are included and sorted adequately so the research can clearly show where the data is concentrated and where it is not. Second, whether cross-national econometric modelling or a detailed case study, each approach matches the scale best suited to its research question. Third, there are fewer single-country studies in Latin America and fewer regional studies in Central Asia, which suggests new chances for important research. As a result, this framework enables a thorough literature review and a research plan combining broad trends with detailed local details.

4.2 Thematic Insights from Literature

4.2.1 Mobile Money and Inclusion

Mobile money is the most commonly studied FinTech innovation that promotes financial inclusion in the reviewed literature. The initial work showed that mobile banking could help fill the gaps left by formal banks through the use of widespread mobile networks. According to panel data from rural Uganda, mobile money improved household welfare, mainly because it helped families manage their spending when their incomes suddenly changed (Munyegera & Matsumoto, 2015). Five Sub-Saharan African countries were studied,

and the results agree that using mobile money helps households overcome shocks to their income (Koomson et al., 2021)

Besides helping families, mobile money has made it easier for people to use savings and credit services (Lashitew et al., 2019). A thorough study of agent interactions in Nigeria found that trust and convenience are key reasons for adoption. Unbanked and poor people said that being close to an agent was more important than knowing how to use digital tools (David-West et al., 2021).

How inclusion outcomes are shaped depends on gender dynamics. An analysis across many countries found that women were less likely to use mobile banking due to barriers to mobile access and cultural traditions; however, programs that combined training in digital skills with visits by agents lessened this difference (Lee et al., 2021). Studies in Sub-Saharan Africa show that mobile money allowed women to reduce costs, lend to each other and invest more in their businesses, which increased the number of self-employed women (Asongu & Roux, 2023).

A number of single-country studies give more detail on the obstacles faced by institutions and infrastructure. After demonetization in India, mobile payment services helped maintain daily transactions. Although M-Pesa has helped millions in Kenya, the research found that the lack of easy connections with formal banks and the high charges for transfers may stop the poorest households from staying included in the economy (Tyce, 2020; Bateman et al., 2019)

The research points out three important factors that influence mobile money inclusion. Accessibility, as measured by how close agents are and how widely networks operate, is usually the leading factor: agent density is responsible for much of the difference in mobile-money use among Nigeria's unbanked poor (David-West et al., 2021) and having a nearby

network is the most significant factor in predicting mobile-money use in five African countries (Lashitew et al., 2019).

4.2.3 Blockchain in Financial Access

Several studies document blockchain to assist in creating alternative credit reputations based on permanent transaction records. According to Trivedi et al. (2021), blockchain can provide financial institutions with a reliable record to verify creditworthiness when other data is unavailable. Still, Campbell-Verduyn and Giumelli (2022) point out that these technological improvements might not help more people. They point out that even new payment networks built on blockchain, such as China's CIPS, still potentially exclude some users from financial transactions. These authors argue that most blockchain experiments have supported, rather than replaced, the existing colonial financial and security systems. Overall, blockchain and smart contracts provide functional improvements in trade finance, but Ganne (2021) and Campbell-Verduyn and Giumelli (2022) point out that without legal and policy changes, these tools could actually maintain or increase the difficulties people experience in accessing financial services.

Sant'Anna and Figueiredo (2024) consider blockchain and distributed-ledger technologies a main FinTech innovation that could significantly improve access to financial services, but the potential is not yet measured. They point out that because blockchain keeps records that cannot be changed and supports smart contracts, it could help create new ways of tracking credit and identity, lessening the need for traditional credit bureaus. Still, the review reveals that no studies have examined whether these features help underserved people open accounts, take out loans or save money over time. For this reason, they urge future studies to use proper designs, such as field experiments and panel data analysis, to assess how blockchain helps include more people in the financial system (Sant'Anna & Figueiredo, 2024).

4.2.4 P2P Lending and Trust

People seeking loans can get money from lenders or investors directly, without banks, by using crowdfunding or peer-to-peer finance. Because of these innovations, more small businesses and individuals with no formal credit history can get financing that supports traditional banking channels (Abbasi et al., 2021; Bartlett et al., 2021). Likewise, entrepreneurs and social causes can use Kickstarter, GoFundMe and Ketto to raise money from the public, offering them rewards or shares, which helps spread access to capital to more people than just institutional investors (Figueroa-Armijos & Berns, 2021)

P2P lending makes it easier for excluded borrowers to participate in financial decisions. Because borrowers share their stories and lenders can pick projects they prefer, it encourages honesty and trust (Maskara et al., 2021). P2P lending gives investors a new way to diversify their investments, apart from stocks, bonds or bank savings. Funding borrowers directly allows investors to earn better returns than they would with traditional banks, mainly in places where credit is hard to get. Trust is established in peer-to-peer lending because platforms use open credit review and risk-sharing features that reassure everyone involved.

Even though P2P lending and crowdfunding have much potential, trust and consumer protection issues are still important. Bartlett et al. (2021) also show that the use of algorithms for credit scoring in P2P lending can result in biased loan terms that hurt marginalized borrowers and may lead to more defaults and difficulties in platform liquidity when risk is not well diversified and supervision is weak.

Overall, these models are community-based and provide a strong opportunity for more people to participate and for new ideas to emerge. They help underserved people by making it possible for them to lend and borrow money together and by providing them with funding

options beyond banks. To ensure sustainable growth and trust, these platforms need strict rules, open operations and designs that protect everyone involved for an extended period.

4.3 Systematic Literature Review Findings

RQ1: What behavioural changes are associated with the adoption of specific FinTech services such as mobile money, digital banking, blockchain, and P2P lending?

Mobile Money

Studies consistently find that mobile money adoption substantially changes consumer behaviour by improving financial resilience and access. For example, in rural Uganda, households with mobile-money accounts experienced smoother consumption and higher welfare during income shocks (Munyegera & Matsumoto, 2015). Cross-country analyses in Africa report that mobile-money users are significantly more likely to save and invest for the future, and less likely to fall into poverty, than non-users (Koomson et al., 2021). Because these services make it simple for low-income customers to move money, they have more ways to transact and often rely less on cash (Lashitew et al., 2019). In short, mobile money helps people save more and use online financial services by making their financial actions official (Kiconco et al., 2019; Munyegera & Matsumoto, 2015).

Nigerian studies reveal that those with little money and no bank account care more about how close the agent is and how reliable the network is than being digitally literate when using mobile payments (David-West et al., 2021). Households' financial habits are transformed in various ways when they use mobile money. Ugandan households in rural areas that get remittances through mobile money platforms appear to recover from shocks more smoothly and are more resilient (Munyegera & Matsumoto, 2015). Thanks to mobile money in Sub-Saharan Africa, unemployed women can now use informal credit to become entrepreneurs, as shown by Asongu and Roux (2023). In addition, community-based learning

greatly enhances these effects: Kiconco et al. (2019) prove that having peers and local training boosts both the number of rural users and their financial transactions, proving that social support is key to keeping digital finance habits alive.

Table 3: Summary of Mobile Money Services and Financial Inclusion

Theme	Positive Impact	Limitations and Critical Perspectives	Citations
Consumption smoothing	Facilitates remittances and transfers that stabilize household consumption during shocks	Effects depend on wide adoption; limited reach can leave some households unprotected	(Munyegera & Matsumoto, 2015; Koomson et al., 2021)
Adoption and diffusion	Peer and network effects accelerate the uptake of mobile-money services	Requires sufficient agent networks and social learning; literacy is needed	(Lashitew et al., 2019; Kiconco et al., 2019)
Gender empowerment	Empowers women by reducing transaction costs and enabling entrepreneurship	Persistent gender gap due to device and mobility constraints	(Asongu & Roux, 2023; Lee et al., 2021)
Accessibility (agents/networks)	Agent networks and mobile coverage extend financial	Sparse networks and network outages limit adoption,	(David-West et al., 2021] [Lashitew et al., 2019]

	services into rural areas	especially in remote regions	
Affordability (fees)	Generally lower fees than informal alternatives, reducing transaction costs for users	Remaining fees and lack ofinteroperability can still deter the poorest	(Tyce, 2020; Bateman et al., 2019)

Note: Author constructed (2025)

Digital banking platforms, like internet and mobile banking

Users report that features like real-time account management, automated transfers, and digital loans encourage more active financial management (Khuong et al., 2022). For example, studies of Vietnamese youth show that perceived usefulness and platform trust are the strongest drivers of mobile banking adoption, suggesting that digital tools boost users' financial confidence (Khuong et al., 2022). These platforms encourage more transactions and better money management because they make it easy to use banking services from anywhere, and useful tools are built into the apps.

More than just raising the number of transactions, the personalized tools in digital banking apps encourage people to spend less and save more. Indian users who got automated spending alerts and budgeting tips through their mobile wallets said they had better control over their discretionary spending and usually saved some money every month.

Even so, digital banking is mainly used by people living in cities who are young and have jobs, leaving those in rural areas with lower incomes behind. Lee et al. (2021) find that urban youth adopt mobile banking more often than rural youth because they have better access to networks and more devices. Similarly, Zins and Weill (2016) the factors of infrastructure like internet and mobile access as well as education are powerful predictors of

financial inclusion in Africa. Although the specific role of internet access and digital skills cannot be separated, these factors have a strong impact on the probability of possessing a bank account.

Many digital banking users feel more confident managing their finances and are ready to use credit products, as interviews show that these platforms give them instant access to their account balances and personalized credit deals. Even so, research shows that some consumers turn to cash or unofficial ways to pay when they feel their digital transactions are not trustworthy: Senyo et al. (2020) discovered that people do this to feel safer. Moreover, different types of barriers, such as gender, the quality of internet in rural areas and smartphone ownership, prevent some people from using digital banks, as shown by Lee et al. (2021).

Table 4: Summary of Digital Banking Platforms and Financial Inclusion

Theme	Positive Impact	Limitations and Critical Perspectives	Citations
Accessibility & Convenience	24/7 remote account opening, instant transfers, and real-time balance checks	Requires reliable internet, up-to-date devices, and basic digital literacy; rural/older users may be excluded	(Khuong et al., 2022)
Savings Behavior	Forced-save features and goal-based round-ups smooth consumption variability and boost	Small automatic deductions may go unnoticed; opt-out options can undermine long-term saving gains	(Apeti, 2022)

	precautionary savings		
Credit Access & Usage	Leverages digital footprints for micro-loans and algorithmic underwriting, expanding credit to thin-file or unserved borrowers	Algorithmic bias and lack of transparency; underserved segments may still face rejection	(Abiona & Koppensteiner, 2020) (Bartlett et al., 2021)
Customer Empowerment & Trust	Perceived usefulness and platform reliability drive greater financial autonomy and willingness to shift more activities online	Persistent digital-trust gaps, security concerns, and low digital literacy can hinder adoption	(Khuong et al., 2022) (Mamun et al., 2023)
Youth & Urban Adoption Bias	Rapid uptake among younger, tech-savvy, urban populations leads to higher engagement and early habit formation	Older, rural, and less-educated groups lag behind, risking a widening digital divide	(Khuong et al., 2022) (Sultana et al., 2023)
Innovation & New Services	Integration of robo-advisors, InsurTech	Complexity, privacy concerns, and	(Allen et al., 2022)

	add-ons, and crypto/CBDC interfaces enriches the choice and tailorability of financial products	regulatory uncertainty can slow uptake among mainstream users	

Note: Author constructed (2025)

Blockchain Technology

The FinTech services provided through blockchain have remarkably changed users' perceptions of trust and security behaviours. Through the application of distributed ledger technology, consumers express increased levels of confidence in the integrity of transactions and privacy of data, consequently lowering digital finance anxiety. As an example, text-mining reveals that the transparency capabilities of blockchain technology contribute to higher levels of consumer trust, prompting users to engage in more frequent peer-to-peer transactions and to branch out into other digital financial instruments (Da Silva & Moro, 2021; Ante, 2020). They also display more security-positive behaviours, like regularly auditing smart-contract conditions and keeping their private keys, as trust in intermediaries declines, compared to the more security-negative behaviours of relying on third parties seen in conventional online banking.

The use of blockchain-based lending systems has transformed the risk-taking and repayment habits of borrowers. The empirical evidence of microcredit on blockchain shows that transparent and unchangeable ledger entries can lead to more disciplined repayment

behaviour because social collateral and programmable contracts are enforced in a timely manner (M. M. Hoque et al., 2024).

In addition to personal finance, the blockchain FinTech promotes cooperative and community-based tendencies. In smart communities, the community members participate in the consensus-based governance system, where tokenized voting and rewards systems are used to co-produce public goods and validate the communal data (Aggarwal et al., 2019). Nevertheless, this transition also brings exclusionary logic: the marginal groups can be outpaced by the complicated onboarding procedures. New digital divide advocacy patterns and peer support networks should fill the technical gaps (Campbell-Verduyn & Giumelli, 2022). Therefore, blockchain does not only change individual practices but also redefines social interactions on a group level concerning finance.

Table 5: Summary of Blockchain, Cryptocurrencies, and Financial Inclusion

Theme	Positive Impact	Limitations and Critical Perspectives	Citations
Cross-border remittances	Near-instant transfers with much lower fees than banks	Regulatory compliance and on-ramps remain complex	(Rodima-Taylor & Grimes, 2019)
Smart contracts	Automates the execution of loans, insurance, and escrow, reducing intermediary costs	Legal recognition gaps; scalability and energy constraints	(Trivedi et al., 2021)
Central Bank Digital Currency	Enables secure, interoperable digital	Privacy concerns, reliance on robust	(Allen et al., 2022)

	payments in pilot jurisdictions (the Bahamas' Sand Dollar)	mobile/internet coverage	(Sant'Anna & Figueiredo, 2024)
Cryptocurrencies	Peer-to-peer value transfers and a potential hedge against local currency depreciation	High price volatility, limited consumer trust and usability	(Allen et al., 2022)
DeFi lending platforms	Algorithmic underwriting and on-chain collateral enable credit access for thin-file or unbanked users	Smart-contract vulnerabilities; uncertain regulatory status	(Campbell-Verduyn & Giumelli, 2022)

Note: Author constructed (2025)

Peer-to-peer (P2P) lending and crowdfunding

P2P lending has encouraged borrowers to try a new way of getting loans, as it is more accessible than traditional and alternative financial services in parts of the world where they are not easily found. Maskara et al. (2022) show that when rural communities lose their bank branches, more people turn to P2P lending online. In areas with few pawnshops, P2P activity rises per person, which suggests that people who used to go to fringe lenders now use P2P instead. This change in behaviour highlights a broader trend: people in areas with little

traditional credit access are now using digital lending platforms more than ever. (Maskara et al., 2021).

Prosocial motivations and stories are used in reward- and donation-based crowdfunding instead of promising financial returns to bring in community funding. Jancenelle and Javalgi (2018) report that campaigns focused on moral ideas such as care and fairness get more early help and collect more pledges than those that only describe the product. Figueroa-Armijos and Berns (2021) add to this by finding that female- and rural-led projects with a strong social focus get better funding because they build trust with donors and make resources available to entrepreneurs that formal financiers tend to ignore.

Even so, crowdfunding can also lead to some behavioural problems. According to Figueroa-Armijos and Berns (2021), backers consider delays or unmet promises as breaking a social contract, which makes them much less likely to support other campaigns. The authors found that partnering with respected microfinance institutions greatly helps refugee entrepreneurs secure more funds, making the project appear less risky to donors. The study reveals that crowdfunding's ability to democratize finance is based on strong narratives, trustworthy partnerships, and project management.

Table 6: Summary of Peer-to-Peer (P2P) Lending and Crowdfunding

Theme	Positive Impact	Limitations and Critical Perspectives	Citations
Expanded credit access	Funding for underserved SMEs and thin-file	Without any guarantees, default risk continues to be	(Abbasi et al., 2021) (Bartlett et al., 2021)

	borrowers is made possible by alternative scoring models and typically at a lower cost	high and algorithmic underwriting can introduce bias.	
Investor returns & diversification	Achieving portfolio diversification and routinely earning yields above bank deposit rates	Elevated credit and platform insolvency risk; losses concentrate if defaults cluster	(Saiedi et al., 2020)
Trust & storytelling	Personal narratives and social endorsements on platforms build peer trust and improve funding success for borrowers	Does not consider applicants who do not have strong social networks or the ability to tell their stories online	(Figueroa-Armijos & Berns, 2021)
Entrepreneurial financing	Crowdfunding empowers micro-entrepreneurs—including refugee and youth ventures—to secure seed capital	Success skews toward projects with strong online marketing and urban connectivity	(Gama et al., 2023)
Risk exposure & literacy	Participation fosters engagement with	Needs financial literacy and can lead	(Saiedi et al., 2020) (Bartlett et al., 2021)

	formal finance and can spur financial skill development	to over-indebtedness.	

Note: Author constructed (2025)

RQ2: What are the enablers and barriers to FinTech adoption among underserved populations?

Network and Device Infrastructure: Fast progress in mobile and Internet networks has made it possible for the industry to grow quickly. For example, China finished rolling out 3G/4G networks in almost all townships by 2015, and around 90% of villages gained access to broadband (Kong & Loubere, 2021). At the same time, mobile phones have become very popular: Uganda saw mobile money users rise from nearly nothing to over one-third of families in a few short years. Because more people now use smartphones and data is more affordable, FinTech services are now open to groups that could not use banks in the past. Traditional finance takes more time, involves costly banks and requires cash. FinTech can remove these three obstacles.

Digital Literacy and Usability: User skills on digital platforms help shape whether a technology is accepted. In places where people use digital tools, the take-up of fintech is simpler, with young urban users leading the way. According to research, frequent use means overcoming the anxiety caused by technology problems. Making people aware or training them encourages usability.

Trust and Security: Trusting FinTech providers is very important. People worry about privacy and fraud because multiple data breaches have seriously damaged finances. Loose rules in the industry cause uncertainty: limited legal options make users hesitant to

hand over significant amounts. As a result, people are concerned about their data being safe and are unprotected by patchy financial laws. Furthermore, when services provide confidence by satisfying certification rules or being clear about transactions, people begin to trust them and their use increases.

Cost and Affordability: Many people are choosing crypto because it is cheaper and requires less credit. Using mobile money usually means paying less for sending money, travelling and completing transactions. Ugandan users were able to make remittances more cheaply with FinTech, which greatly helped their well-being. Unfortunately, the first costs (like a smartphone or data plan) can prevent the poorest people from joining. For a long time, rural and low-income people have been excluded by traditional financial rules like high balances, strict verification and high costs. FinTech can help overcome many problems by providing low-cost and quick services at agents' locations. However, any costs left for fees or devices continue to prevent the low-income from joining.

Socio-institutional and Regulatory Factors: The way people adopt depends on government rules and social expectations. When governments and companies join forces, FinTech is supported. The availability of mobile-money interoperability (supported by the government) has encouraged more people to use these services. However, social and cultural factors also make it harder to use technology. Social factors prevent many African women from using formal banking services. While mobile fintech helps, social and institutional challenges are still part of the problem when it comes to adoption.

Table 7: Summary of Barriers to FinTech Adoption

Theme	Positive Impact	Limitations and Critical Perspectives	Citations

Digital infrastructure	Better access is gained by using agent networks and smartphones.	Weak networks, electricity, and agents in rural areas	(Johnen et al., 2023)
Regulatory environment	Clear rules and sandboxes build trust.	Fragmented laws and weak enforcement.	(Erel & Liebersohn, 2022)
Demographics and equity	Mobile money empowers women entrepreneurs.	Skewed to young, urban, educated users.	(Koomson et al., 2021) (Asongu & Roux, 2023)
Digital literacy & trust	Targeted education and peer support boost confidence.	Low skills and privacy/security fears persist.	(Kiconco et al., 2019) (Bouteraa et al., 2023)

Note: Author constructed (2025)

Table 8: Summary of Enablers to FinTech Adoption

Theme	Positive Impact	Limitations and Critical Perspectives	Citations

Income Level	Higher earnings boost uptake of digital finance	Risks widening inequality if only higher-income segments adopt.	(Demir et al., 2020)
Education & Digital Literacy	Digital-skills training drives use of advanced FinTech services	Digital literacy programs are uneven; older and rural populations often remain excluded.	(Sultana et al., 2023)
Agent/Branch Network Density	More cash-in/out points and branches accelerate adoption	Urban bias in agent placement; rural and remote areas are still poorly served.	(Coffie & Hongjiang, 2022) (Johnen et al., 2023)
Trust & Security	Strong fraud safeguards and a reputation foster confidence	Persistent concerns about fraud and data privacy; trust-building initiatives can be slow/costly.	(Saiedi et al., 2020) (P. K. Senyo et al., 2021)
Social & Peer Influence	Word-of-mouth and community endorsements boost trials	Over-reliance on close-network referrals may limit reach beyond well-connected communities.	(Jancenelle & Javalgi, 2018) (P. Senyo & Osabutey, 2020)

Cost & Fee Structure	Low or zero fees encourage frequent small transfers	Sustainability concerns for providers: Zero-fee models may be withdrawn or need heavy subsidies.	(Tyce, 2019) (Bateman et al., 2019)
Infrastructure	Widespread internet and smartphone access underpin usage	Connectivity blackspots persist; the cost of devices and data remains prohibitive for the poorest.	(Knaack & Gruin, 2020) (Zhao et al., 2022)

Note: Author constructed (2025)

RQ3: How do FinTech platforms reshape saving, spending, borrowing, and investment decisions?

Nan et al. (2020)'s systematic review of 82 empirical studies on Sub-Saharan Africa finds widespread evidence that once people start using mobile-money services, they not only remit more often but also begin to treat their mobile-money wallets as savings instruments. In contexts where "cash-in/cash-out" agents are ubiquitous, users report greater ease in setting aside small amounts safely, and empirical panels in Uganda show appreciable increases in recorded savings balances among adopters compared to non-users.

In rural Uganda, Munyegera and Matsumoto (2015) find that families with mobile-money accounts tend to have more stable consumption patterns: getting a mobile-money account raises the chance of receiving remittances by about 20 percentage points, and those who receive remittances see their yearly inflows increase by about one-third—both effects they attribute to reduced use of big cash transfers and more frequent, smaller transactions.

Koomson et al. (2021) use an instrumental-variables approach—exploiting the local density of mobile-money agents—to show that, across five Sub-Saharan African countries, mobile-money adoption substantially bolsters household resilience to idiosyncratic shocks. They estimate that adopters are 36–42 percentage points more likely to send emergency support and 30–36 points more likely to receive it than non-adopters. Importantly, these gains accrue disproportionately to female-headed and rural households, underscoring FinTech's potential to narrow both gender and geographic vulnerability gaps.

Koomson et al. (2022) exploit nationally representative surveys from Kenya, Tanzania, and Uganda to show that mobile-money users are 24.4 percentage points more likely to start a business than non-users (instrumented by agent density). They further document that this entrepreneurship boost is strongest among women and rural residents, groups traditionally underserved by formal finance, and that the channel runs in part through improved digital savings and easier access to small digital credit.

Table 9: Summary of Behavioural Changes from FinTech Adoption

Theme	Positive Impact	Limitations and Critical Perspectives	Citations
Saving and budgeting	In-app tools boost saving and budgeting	Easy credit can spur overspend	(Apeti, 2022)
Credit and borrowing	Moves users from informal to formal credit	Risk of over-indebtedness	(Abiona & Koppensteiner, 2020) (Abbasi et al., 2021)

Digital payments usage	More frequent cashless transfers	Digital-literacy gaps	(Zins & Weill, 2016) (Lashitew et al., 2019)
Entrepreneurial activity	Empowers micro-entrepreneurs	Needs digital skills/networks	(Asongu & Roux, 2023) (Mamun et al., 2023)
Autonomy/confidence	Greater financial control and trust	Security and trust concerns	(Khuong et al., 2022)

Note: Author constructed (2025)

RQ4: What socio-economic outcomes are linked to increased financial inclusion through FinTech?

Household Welfare and Consumption: Studies based on real-world data show that households greatly benefit from using FinTech. In rural Uganda, a study using panels found that those who used mobile money consumed more per person than those who did not. These consumption increases span food, health, education, and other spending categories. Overall, the review by Nan et al. (2020), of mobile-money programs in Africa shows that their broad use has resulted in many socioeconomic benefits for households, including household welfare.

Saving and Investment: Being digitally included helps people save more and access credit. Having digital savings and credit allows people to save, which in turn supports entrepreneurship since more people can start micro-businesses. FinTech makes it possible for underserved people to put their money into businesses or productive assets.

Income Smoothing and Resilience: FinTech greatly helps families manage their finances and get through unexpected difficulties. Several studies show that those who use mobile money get remittances more frequently and in larger amounts, which allows them to smooth out their spending. Adopting mobile money led to a positive result: families with mobile accounts were much more likely to send or receive financial help from others when facing shocks. The main result is that both female- and rural-headed households gain more ability to cope with shocks when they use FinTech. As a result, mobile money can act like informal insurance, as Suri et al. (2021) found, helping consumers manage costs when they get sick or experience weather shocks.

Poverty Reduction and Financial Autonomy: FinTech helps make it easier for people to save and borrow, which can reduce poverty. When a household's spending and income improve, it can lift some families above the poverty line; even if poverty rates are not always mentioned, the increased spending shows this. In addition, using FinTech gives people more independence. For example, women can now use their channels to manage their money without relying on men. A research report demonstrates that mobile money makes it easier for women to get financial help in Ghana, Kenya and Rwanda, proving that FinTech can help reduce gender differences. The literature shows that digital finance helps marginalized groups (women and rural people) become more socially and economically active.

Table 10: Summary of Socio-Economic Outcomes of FinTech Adoption

Theme	Positive Impact	Limitations and Critical Perspectives	Citations

Household income & welfare	Boosts consumption and reduces poverty	Gains hinge on broad uptake; some remain excluded	(Munyegera & Matsumoto, 2015) (Koomson et al., 2021)
Entrepreneurship & employment	Spurs microenterprise growth and job creation via easier credit	Benefits skew toward literate, urban entrepreneurs	(Abbasi et al., 2021)
Gender equality	Economically empowers women and narrows inclusion gaps	Social norms and access barriers limit full parity	(Lee et al., 2021) (Asongu & Roux, 2023)
Economic formalization	Digital payments broaden the tax base and traceability	Informal activity can persist without policy support	(Masino & Niño-Zarazúa, 2018) (Rodima-Taylor & Grimes, 2019)
Investor returns & savings	Delivers higher yields and strengthens	Volatility and required financial know-how pose risks	(Apeti, 2022)

	precautionary savings		

Note: Author constructed (2025)

RQ5: What risks or unintended consequences accompany the widespread adoption of FinTech tools?

Security and Privacy Concerns: Using FinTech makes many people nervous because they think their private or financial data might be at risk. It is clear from surveys that people are worried their data could be compromised when they make online payments or transfers. Those worries are justified, as cyberattacks on financial apps can result in significant losses. However, many FinTech companies have not established strong enough security or clear rules to help their customers. According to the literature, incomplete laws in some areas can make it difficult for users to address problems related to fintech. A platform's failure to handle data or default can make it harder for financial inclusion to succeed.

Exclusion Risks: Although FinTech may include those left out, it can also cause others to be excluded. Those who do not have a phone or internet access (often the poorest, least educated or living far from cities) cannot participate. A review points out that most of the proven advantages are found in countries with high FinTech use (like Kenya and Tanzania), suggesting that FinTech is not yet widely available in areas with little adoption. Even with mobile tools, some gaps between men and women still exist. People who cannot afford a phone or do not know how to use technology could be excluded by FinTech.

Over-Indebtedness and Credit Dependency: Digital credit that is simple to access can lead to borrowers getting loans they cannot afford. Though the articles mainly highlighted credit access as a positive, some experts warn that overly aggressive lending by fintechs could cause some borrowers to get into debt. In Ghana, the MoMo study revealed that digital credit is used more, but if not managed carefully, it could cause people to borrow more than they can

afford. Similarly, authors in China's rural finance field have pointed out that unrestricted big-data lending by e-commerce firms could put additional financial strain on farmers struggling financially. Such concerns are part of a larger warning in the literature: if not controlled, fintech credit models could become harmful.

Algorithmic and Policy Bias: Using data for decision-making can also introduce social biases. Because FinTech platforms gather lots of personal data, algorithms that are not clear can end up helping just a few groups (such as urban people instead of rural people or men instead of women). In China, a new system links a person's financial privileges to their behaviour. Even though these articles do not focus on them, these developments make us wonder about fairness.

Table 11: Summary of Risks and Challenges of FinTech Innovations

Theme	Positive Impact	Limitations and Critical Perspectives	Citations
Cybersecurity & fraud	Advanced encryption and real-time fraud monitoring	Phishing and breaches erode trust	(Saiedi et al., 2020) (Osabutey & Jackson, 2024)
Debt and default risk	Algorithmic underwriting improves screening	Easy digital credit can fuel debt	(Suri et al., 2021)
Inequality and bias	Automated scoring can reach thin-file users	Algorithms may embed demographic bias	(Demir et al., 2020) (Bartlett et al., 2021)

Regulatory gaps	Clear e-KYC and sandbox frameworks protect users	Fragmented rules create uncertainty	(Gabor & Brooks, 2016)
Operational reliability	Distributed systems boost uptime and failover	Outages and network failures disrupt service	(Avom et al., 2023) (Johnen et al., 2023)

Note: Author constructed (2025)

4.4 Research Gaps and Future Opportunities

Based on our review of 99 articles, the approach to research in FinTech is very different from one study to another. About 55 articles are quantitative and 33 qualitative case studies, while another 11 articles mixed-methods investigations. Most FinTech research is done in Sub-Saharan Africa (19 %) and East Asia & Pacific (11 %), with global or multi-country studies taking another 38 %. At the same time, Latin America & the Caribbean, MENA, South Asia, Europe & Central Asia, and North America each have less than 5 %, and Central Asia is almost unstudied. Further research ought to explore these regions by doing detailed country-specific studies, such as Brazil, Mexico, and Saudi Arabia, comparing different countries' rules and facilities, Ghana vs. Peru, and looking into barriers and opportunities faced by urban/rural areas, women, men, older people, and migrants.

In the existing literature, mobile money systems are covered by 43 % of the studies, blockchain/cryptocurrency applications by 18 %, peer-to-peer lending and crowdfunding by 12 %, and the "others" group by 15 %. Alternatively, digital banking advancements, including

budgeting alerts, automated transfers, Insurtech and microinsurance, and digital identity, are poorly studied and account for just 6 %, 3 %, and 2 % of the corpus, respectively. Lastly, financial inclusion has not yet fully explored user capability. While it is clear that not knowing how to use digital or financial tools is a problem, few studies have tested solutions. Researchers should study educational tools and designs that might encourage more people to use them. Working on these gaps, using various techniques, reaching more people and exploring different FinTech areas will improve our knowledge of how innovation affects behaviour and inclusion.

4.4.1 Methodological Gaps

It is evident from these proportions that researchers rely too much on single types of studies, do not often use mixed methods to confirm their findings, rarely track effects over time, and do not test their theories in real-world settings.

Researchers studying mobile money and other FinTech services most commonly rely on survey data and standard regression techniques. For example, Abiona and Koppensteiner (2020) use household survey data from Tanzania and estimate logit models to show how access to mobile money reduces household poverty under different shock scenarios. Apeti (2022) applies OLS (Ordinary Least Squares) regressions to panel data on household consumption volatility across multiple developing countries to assess the smoothing effect of mobile money. In Asia, Kiconco et al. (2019) compare rural and urban Ugandan regions using probit models on FinScope survey responses to identify social-network effects in mobile-money learning.

On the macro side, Avom et al. (2023) tracked 50 African countries over 2004–2020 with fixed-effects panel regressions, finding significant links between agent density and financial inclusion. A smaller group of studies employs quasi-experimental designs or

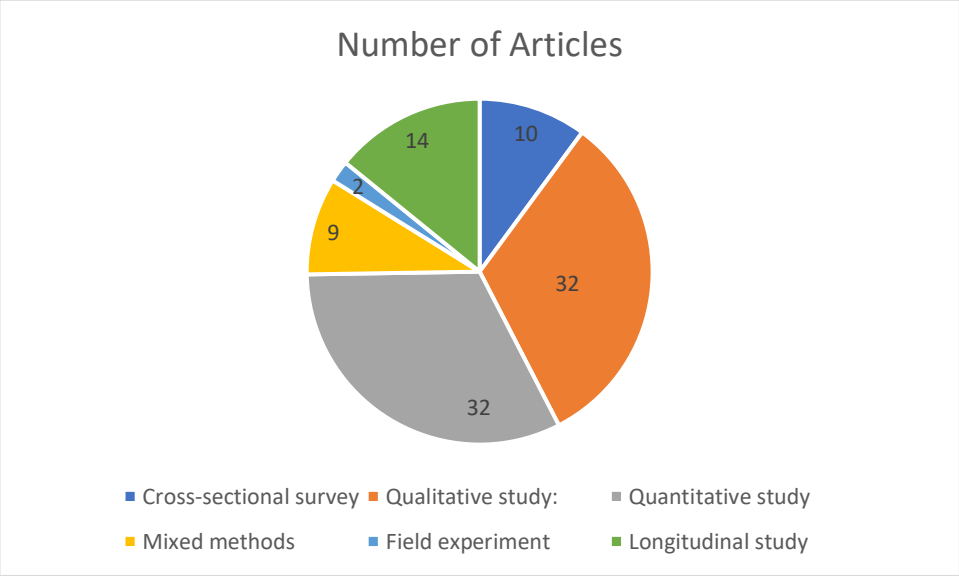
randomized controlled trials to strengthen causal claims. Munyegera and Matsumoto (2015) exploit panel data from rural Uganda with household fixed effects to isolate the effect of remittance-receiving via mobile money on welfare outcomes. Suri et al. (2021) use a regression-discontinuity design around eligibility cutoffs for digital loans in Kenya's M-Shwari product, demonstrating that access to small, instant loans reduces the probability of foregoing essential consumption during shocks. Though actual randomized trials are not common, Djahini-Afawoubo et al. (2022) introduce mobile-cash transfers in a community in Benin, comparing the poverty impact in treated and controlled villages throughout the intervention.

Researchers learn more about adoption pathways by using behavioural and comparative methods. Senyo et al. (2020) use fsQCA on FinScope data from Ghana and discover that high trust and low transaction cost are important for adopting mobile money. Lee et al. (2021) tested survey data from South Asia using structural equation modelling. They discovered that women are more likely to use mobile banking if they feel their money is secure. Asongu et al. (2021) investigate the effect of legal environments and innovation drivers on mobile-money diffusion in 30 developing countries using PLS-SEM.

Even with all the different approaches, important gaps remain. Most studies are done in sub-Saharan Africa and South Asia, while Latin America, Eastern Europe and fragile states are less often examined. Second, most papers use one survey or a brief panel, making tracking how people's behaviour changes over time difficult. Moreover, although a few studies rely on causal methods, most still use correlational regressions that find it hard to control for reverse causality or missing variables. Fourth, there is not much in the way of deep qualitative research, so we do not hear much about what motivates users or the cultural obstacles they face. Gender and other inclusion dimensions are often recognized but are not studied in depth; for example, Lee et al. (2021) point out that women may feel less secure, but most studies do not test interventions for women or examine the relationships within a household.

As a result, future studies should improve both the methods and the contexts they use. Experts could conduct field experiments, for example, by offering random marketing deals for digital wallets or take advantage of the staged introduction of FinTech rules as a natural experiment. If researchers could track the same households or firms over several years, they could learn how digital finance impacts both their resilience and growth. Using in-depth interviews or observing participants will help explain the reasons behind the survey results and show what social or cultural factors are at play. Research efforts focused on gender and using women-only agents or special digital literacy courses can explore how to close the difference in use. Lastly, mobile platform records, call-detail logs and geospatial tools can help identify regions needing better service and arrange service deployment accordingly. Future studies can use strong methods, in-depth studies, and more areas and products to give more straightforward advice on how FinTech helps with financial inclusion.

Figure 4: Distribution of Research Methodologies in FinTech Literature

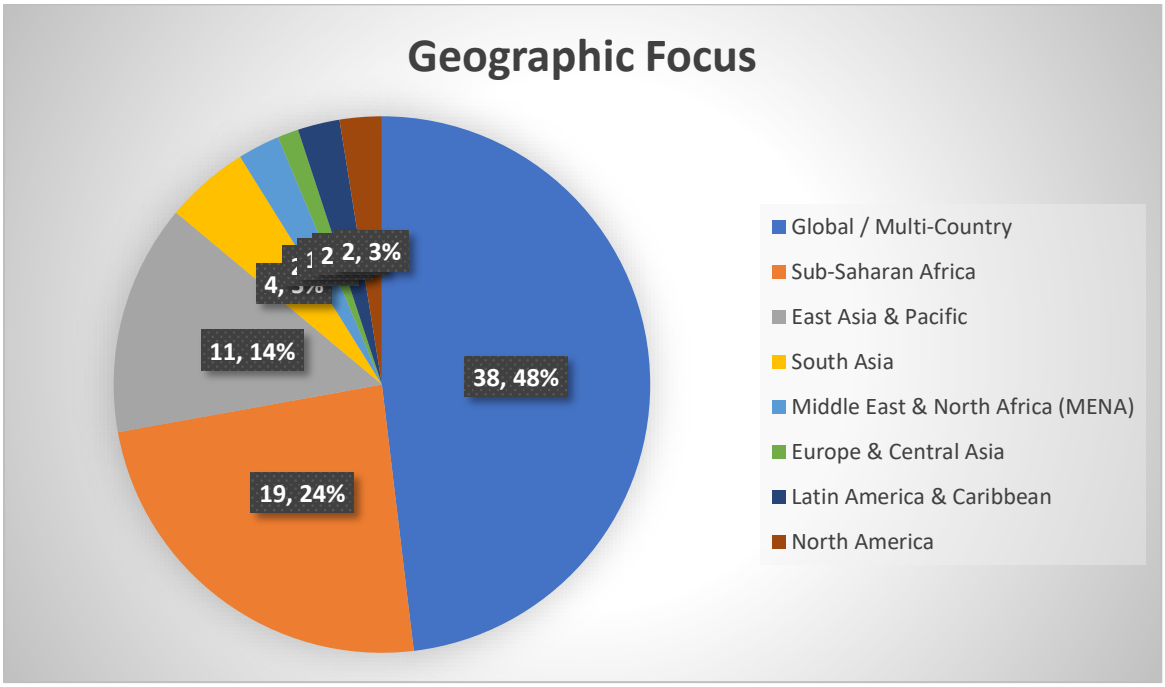


Note: Author constructed (2025)

4.4.2 Geographic and Demographic Gaps

The literature shows a strong geographic skew. Many analyses focus on specific regions, such as sub-Saharan Africa for mobile money or the U.S. for online lending, leaving large gaps in global coverage. For instance, virtually no studies in the set examine Latin America, the Middle East, or small economies, making it unclear if known effects generalize. Some groups of people are not studied as much as others in demographics. Some researchers point out that studies have not given enough attention to the lack of funding for refugee entrepreneurs, which suggests they are not considered enough. In the same way, youth and elderly groups, those with disabilities and workers in the informal sector are rarely discussed explicitly. While it is clear that gender disparities exist in fintech (not many services are used by women), there is little analysis by sex or socioeconomic background.

Figure 5: Geographic Focus of FinTech Studies



Note: Author constructed (2025)

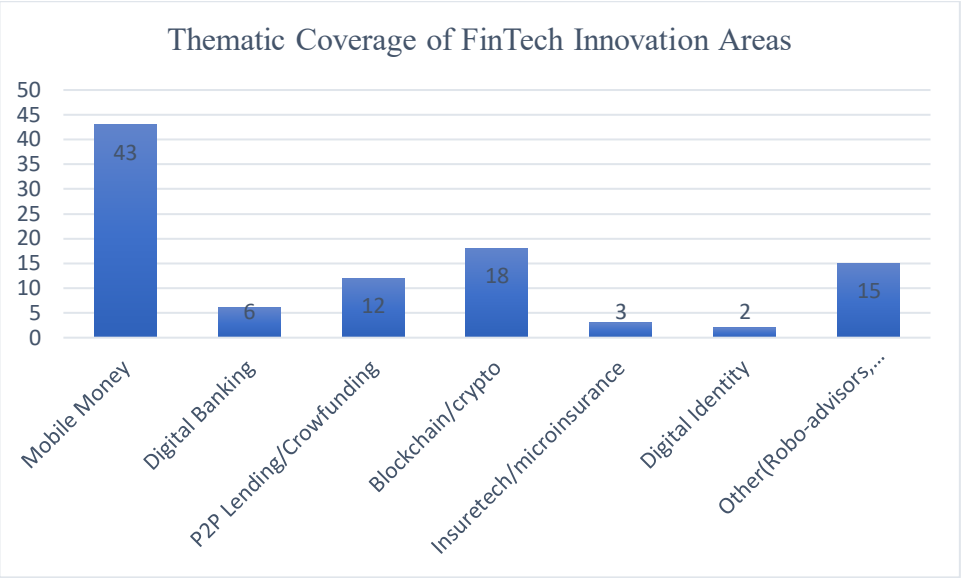
- **Regional gaps:** Few comparative or cross-country studies. Emerging markets beyond East Africa/India are understudied, and urban/rural divides are often ignored.
- **Special populations:** Refugees and internally displaced people, migrants, and ethnic minorities have been neglected in empirical work. Future research should specifically target these groups.
- **Income and literacy levels:** Low-income, low-literacy consumers are often aggregated as "unbanked," but a more granular study is needed on how fintech can serve them.

4.4.3 Thematic Gaps in Innovation Areas

Mobile Money: Although mobile payments, such as M-Pesa, have attracted much research, we still do not fully understand their lasting effects on credit, savings and business growth. A limited number of studies have found that using mobile money can lead to later use of credit or insurance.

Peer-to-Peer and Marketplace Lending: The P2P lending literature is still developing and sometimes contradictory. Some studies find expanded access, while others find concentration limits entry**.** According to Bartlett et al. (2021), even advanced FinTech lending continues to charge Latinx/Black borrowers more in interest. On average, interest rates for Black and Latinx borrowers are 12 and 29 basis points higher than for other borrowers. This points to a necessity for further study of how algorithmic underwriting can be made fairer. Future studies should examine how P2P platforms perform in different risk areas and countries and their effects on borrowers.

Figure 6: Thematic Coverage of FinTech Innovation Areas



Note: Author constructed (2025)

Blockchain and Crypto: Surprisingly few of the articles rigorously address blockchain or cryptocurrency in inclusion contexts. This represents a notable gap: empirical evidence is needed on whether crypto-based remittances, decentralized finance (DeFi), or digital identity platforms truly reach the unbanked or just circulate among the already served. Studies could, for example, test if localized blockchain pilots improve transaction speed/costs for rural users or how stablecoins affect migrant remittances.

Digital Credit and Microfinance Innovations: Fintech services are designed for micro-entrepreneurs (digital microlending and crowdfunding). According to Gama et al. (2023), crowdfunding by MFIs can increase the funding of refugee enterprises, which may also apply to other underserved entrepreneurs. However, there is insufficient systematic study of novel credit products such as pay-per-use insurance, gamified savings and credit for gig workers. Studies should explore which areas of innovation, apart from basic payments, can help more people participate in financial services in various circumstances.

- ***Credit and lending:*** Studies show that fintech can either replace or work together with banks. There is a need for further research on using new types of credit-scoring data (social media, psychometrics).
- ***Payments and wallets:*** There is evidence of expanded usage but little downstream effects (does mobile money increase formal savings or only shift informal transfers?).
- ***Insurance and investment:*** Neglected areas. Few empirical studies examine digital microinsurance or robo-advisors among low-income users.
- ***Identity and KYC:*** Digital ID has been touted as an enabler of inclusion, yet rigorous evaluations are sparse. This is a promising avenue to explore.

4.4.4 Digital Literacy and User Capability Gaps

A common theme is that technology alone is insufficient: users must be able and willing to use it. However, few studies systematically measure digital or financial literacy. Many articles note adoption barriers (lack of smartphone skills, trust, language barriers) but stop short of solutions. For example, user discomfort with online interfaces is often cited anecdotally, but no rigorous field experiments test educational interventions. More research should be done to find digital literacy or design solutions that help everyone participate. Only a few studies look at how informal institutions, community groups, or peer networks might help fintech. Overall, research assumes there is a hidden demand without considering what users are capable of or what training they require. It may be necessary to bring together education and UX experts and measure how literacy affects fintech's impact.

- ***Financial and digital literacy:*** The literature calls for more emphasis on user training. Johnen et al. (2023) suggest that improving digital literacy is essential as adoption grows, but empirical tests of training interventions are still absent.

- ***Trust and security awareness:*** Fear of being scammed is sometimes mentioned, but none of the studies tested ways to assure users about privacy or communication. This is an obvious chance for research..
- ***Language and accessibility:*** In multilingual markets, few papers discuss localizing apps or supporting vernacular interfaces. User-centric design is a blind spot.
- ***Behavioural factors:*** Understanding how habit formation, social influence, or mobile network effects drive or hinder inclusion is underexplored. Behavioural experiments could address this.

4.4.5 Policy and Regulatory Gaps

Many reviewed studies point out that regulation tends to fall behind the latest innovations. The researchers point out that fair-lending laws have not kept up with algorithmic finance: even if algorithms help reduce discrimination, they do not fully address the issue of discrimination in loan pricing. Therefore, it seems that regulators and policymakers need updated tools to ensure fairness and protection for fintech users. Researchers point out that policymakers should understand that a lack of trust in banks contributed to the rise of new financial services. As a result, future studies should help create rules that support both innovation and the inclusion of more people, for example, by studying how sandboxes or tiered KYC rules affect both areas. Other priority topics include data privacy standards (to protect vulnerable users) and interoperability mandates so that mobile money and bank systems interconnect.

- ***Fair lending and anti-discrimination:*** Bartlett et al. (2021) point out that racial differences continue to appear in algorithmic systems. Therefore, new credit models must be included in fair-lending frameworks by policymakers.
- ***Sandbox regulation and financial consumer protection:*** Many articles suggest using regulatory sandboxes to test new fintech ideas safely. Research could be done to check which rules, either strict or flexible, encourage more people to use them.

- ***Data and privacy policies:*** Few studies analyze how data-sharing rules or privacy laws affect low-income users. Future work should examine the impact of data regulations on access.
- ***Integration with official identification and payment systems:*** Regulatory gaps exist around digital ID usage and payment system access. Research could evaluate policy reforms on inclusion outcomes.

By systematically addressing these gaps through targeted empirical studies and interdisciplinary collaboration, the field can better understand how fintech innovations translate into real inclusion and what conditions optimize that translation.

CHAPTER 5: Conclusion and Recommendations

5.1 Summary of Key Findings

Among the 99 articles included in this review, an overwhelming majority were rated as high quality, with only three articles rated as low quality in methodology. Critically, the conclusions of these lower-quality studies did not differ or vary significantly from the general trends of the high-quality studies. In this way, most of the findings of this review are based on high-quality and methodologically qualified evidence, and even the presence of some lower-quality articles does not affect the credibility and homogeneity of the overall findings. Empirical evidence consistently indicates that access to mobile money services are the most frequently explored factor behind financial inclusion. Studies have shown that having mobile money makes it easier for households to manage their finances, save and invest. It is clear from cross-country research that having many agents and helpful regulations encourages more users and positive results. Kenyan and Indian studies also suggest that being near an agent and trusting the network are more important for poor users than digital knowledge. It is clear from the research that women are less likely to have devices and face social barriers to mobile money use, but education and community involvement can help close this gap. In conclusion,

researchers agree that mobile money's inclusive impact is made possible by easy access (agents everywhere and well-connected networks), low fees and flexible platforms.

Digital banking platforms use technology to offer traditional services such as accounts, transfers and credit. Digital banks are found to serve mainly formal workers, city residents and people who use technology, while mobile money is used more by rural and informal populations. People use digital banking because it is fast, convenient and gives them control; young users are more likely to adopt it when they see value and trust in the platform. Consequently, digital banking makes it easier for youth and urban adults to feel more in control of their finances. The literature demonstrates that digital banking increases credit access and savings for underserved groups. However, it still points out that low digital knowledge, poor internet connection, and lack of trust continue to be significant obstacles. Digital banking may help include more people, but it often goes along with a digital divide based on age, education and location.

Studies of blockchain applications in developing economies emphasize cross-border remittances and alternative credit systems. Blockchain makes it possible to keep immutable records of transactions, which can act as credit histories for those without official data. In East Africa, pilot projects using smart contracts approved microloans for about half of those who did not have standard credit records. There is a fast and growing interest in state-backed digital currencies.

Peer-to-peer lending and crowdfunding platforms allow people to borrow money or invest without using banks. They can offer less expensive rates and more flexible terms since they depend on social media and mobile usage rather than traditional credit history to approve borrowers. Research demonstrates that P2P models provide financial services to those banks that do not serve. Likewise, crowdfunding gives everyone the chance to back entrepreneurs and social causes by viewing their projects. From a behavioural point of view, P2P lending

motivates individuals to participate in finances and be open about their choices: borrowers can explain their needs, and lenders can choose projects that fit their beliefs. While lenders may earn more than regular savings, they are also exposed to greater risk. Platform failure and default are possible for P2P investors since their investments lack deposit insurance. Studies have found that biased algorithms or insufficient oversight on these platforms may result in unfair lending, making it harder for everyone to participate. In short, P2P/crowdfunding provides new ways to get credit, but their long-term achievements depend on trust and good oversight.

Using different FinTech services leads to significant changes in how people deal with their finances. Mobile money users in Sub-Saharan Africa were discovered to save and invest more and to withstand shocks better than those who do not use mobile money. Digital tools for banking help people feel more in control of their money, leading them to make budgets and set goals. P2P lending encourages borrowers to engage more actively with financial markets and fosters a sense of agency, since they control their loan narratives. In general, the reviewed literature indicates that FinTech adoption often leads to proactive saving, expanded use of formal credit, and more informed spending among previously excluded users. These behavioural shifts, however, depend on user segments; younger and more educated users change behaviour more readily, while older or low-literacy users may adopt only superficially, for payments but not for sophisticated budgeting.

Many obstacles at both the technical and user levels slow down the adoption of FinTech. There are significant concerns about trust and literacy: rural seniors often do not feel comfortable using apps, and some women may be prevented from owning devices by their culture. Problems with languages, website layouts and poor network and electricity services continue to slow adoption. Experts also argue that because regulations are slow to catch up, FinTech growth can cause privacy issues and lead to people borrowing more than they should

(Bernards, 2019; Gabor & Brooks, 2016). As a result, although technology helps in many ways, infrastructure, rules and social customs still prevent equal use.

There is a strong consensus in the literature that FinTech supports positive inclusion. Services such as M-Pesa have helped cut costs, improve how people handle their income and move households out of poverty. It has been found that using digital finance helps people handle sudden shocks and aim for their future goals (Suri & Jack, 2016; Abiona & Koppensteiner, 2022). Micro-entrepreneurs have benefited a lot from FinTech. Because of mobile money access, women entrepreneurs could borrow money from each other more easily, increasing their investment and self-employment rates. The effects of these improvements are more noticeable when support is given in combination with other programs. However, some studies warn that the benefits are not shared equally: people from underserved urban or male groups often get the most, which points to ongoing inequality.

Alongside benefits, FinTech adoption introduces new risks. Data privacy and cybersecurity threats are frequently noted. In many developing markets with weak consumer protections, users face hidden fees, aggressive marketing of credit, or algorithmic bias in lending. Some researchers point out that a lack of regulation could increase exclusion by letting FinTech monitor users or increase inequality by using biased algorithms. In short, the literature points out that while FinTech can bring many benefits, its risks depend on certain conditions, so protecting consumers is necessary as it becomes more popular.

The review identified several clear gaps. Most studies use cross-sectional surveys and self-reported information, which makes it hard to draw firm conclusions and apply them to everyone. Longitudinal or experimental designs are not common. Researchers have focused more on Sub-Saharan Africa and South Asia than Latin America, the Middle East and the Pacific. Similarly, groups – refugees, persons with disabilities, and very low-income informal workers – are seldom studied. Thematically, areas like blockchain/decentralized finance and

digital insurance attract few studies (virtually no rigorous evidence on crypto remittance pilots), and innovations like digital ID or robo-advisors are underexplored. Finally, user-capability factors (digital literacy, trust, UX design) are often acknowledged but rarely measured. Addressing these gaps is essential to fully understanding FinTech's impact on inclusion.

5.2 Research Contributions

This literature review brings new insights to both academics and practitioners. In theory, it links FinTech categories (mobile money, digital banking, blockchain, P2P) and consumer behaviours to outcomes related to inclusion, creating a complete framework for digital financial inclusion. Unlike separate studies, this research combines behavioural models (such as TAM and UTAUT) with macro-inclusion theories to demonstrate how user attitudes and the environment interact to shape the outcome. The review used a four-tier taxonomy to ensure all areas were covered and gaps easily spotted. This way of working ensured no important steps were missed and made it easier for other researchers to choose the proper methods.

In terms of empirical contributions, the study systematically fulfills its objectives by cataloging 99 recent studies: we have mapped the range of FinTech innovations and their adoption drivers, documented effects on savings, credit and spending behaviours in marginalized communities, and evaluated how these changes relate to financial inclusion metrics. For example, by reviewing agent networks and fee effects on mobile money uptake, we have shown how network externalities mediate inclusion, satisfying the objective to synthesize key determinants of adoption. Finally, by collating recurring findings and contradictions, we explicitly highlight research gaps and set a prioritized agenda for future inquiry.

By articulating core themes – accessibility, affordability, and adaptability- the review gives FinTech developers a clear framework for inclusive product design. Overall, the study informs policymakers and regulators about how to foster innovation responsibly (citing behavioural trends and barriers), and advances academia by synthesizing empirical evidence into testable propositions, that literacy training amplifies digital finance effects. To sum up, this review achieves its stated objectives and bridges theory, evidence, and policy to move the field toward scalable, equitable FinTech solutions.

5.3 Recommendations

1. Expand infrastructure and agent networks:

A. Ministry of Infrastructure and ICT

Allocate annual budgets to subsidize 4G/5G tower installation in rural districts.

Waive import tariffs on satellite-backhaul equipment to reduce the cost of connectivity rollout.

Establish a special investment fund that multiplies private investments- each dollar a company spends to build agent networks is multiplied by a dollar of government money.

B. Telecom and Fintech Companies

Identify unserved villages through GIS(Geographic Information System) and undertake to cover

Collaborate with microfinance institutions to identify and educate new mobile money agents in underrepresented areas.

C. Community Leaders / Local Businesses

Select and appoint village “connectivity ambassadors” to act as a point of contact between inhabitants and suppliers.

Communal savings within the pool to subsidize top-up of floats to new agents.

2. Keep services affordable:

A. Ministry of Finance

Require explicit pricing disclosures in any digital-finance marketing.

B. Labour Unions / Workers' Associations

Advocate for affordability and access on behalf of low-income members.

3. Invest in digital literacy and trust-building

A. Policy makers/Regulators

Fund a curriculum for adult-education centers, with certified instructor quotas per province.

Impose on licensees a percentage of revenue contribution to a user-empowerment literacy fund.

B. Telecom and FinTech Companies

Integrate in-app guides (video + quiz) on basic transactions; reward them with waived fees.

Collaborate with schools and non-governmental organizations to sponsor digital finance clubs and hackathons.

C. Community Leaders/Local Businesses

Point digital champions in every village who can help neighbours and decrease trust concerns.

Hold some workshops jointly hosted by local agents and illustrate cases, such as bill pay.

4. Enforce consumer protection and data privacy

A. Policymakers / Regulators

Audits of fintech data handling are required to be done quarterly, and results are published publicly.

Create a fast-track digital-finance system to resolve complaints within 48 hours.

B. Telecom and FinTech Companies

Release yearly Privacy Impact Assessments on third-party data sharing.

Use end-to-end encryption on P2P transactions and show security badges within the app.

C. Community Leaders/Local Businesses

Place plain posters about digital rights, summing up data privacy rights in markets.

5. Strengthen oversight of alternative finance

A. Policymakers / Regulators

Treat P2P lenders, crowdfunding sites, and similar “alternative finance” platforms more like banks so that they have enough financial options to survive shocks and protect their customers.

B. Telecom and FinTech Companies

Report standardized risk scores on all lending products to allow comparison on a side-by-side basis.

Develop in-app budgeting features that raise a red flag when the borrowing-to-income ratios reach unsafe levels.

C. Community Leaders/Local Businesses

Enabling borrowers, in their turn, to watch each other, develop group expertise, and lower the chance of some of them becoming victims of unfair or excessively costly credit products

The recommendations are based on the challenges and results we have found. If infrastructure and digital literacy are improved, the ecosystem can use the democratization effects described in the research. At the same time, improved consumer protection will help reduce the risks (such as data breaches and predatory lending) that studies have identified.

5.4 Limitations and Areas for Future Research

This work points out several limitations that could be addressed in further studies. First, a literature review depends on how broad and strong the existing publications are. Most of the 99 articles are cross-sectional or qualitative, meaning finding evidence of cause and effect is difficult. Since the period is recent (2015–2025), some recent innovations may be missing from the data. Second, since most research is conducted in Sub-Saharan Africa and South Asia, our results may not apply to Latin America, the Middle East or other regions. Few studies focus on refugees, internally displaced persons, informal workers and people with disabilities, so it is difficult to know how inclusive FinTech is for them. Third, much research uses information people provide about their adoption or intention. Since objective usage data, transaction logs and standardized inclusion metrics are rarely applied, it is not easy to compare different systems.

It is suggested that longitudinal and experimental studies be relied on to show cause and effect and to measure what happens after adoption. More studies are needed that cover different regions and groups, with a special focus on Latin America, small countries, women, youth, migrants and seniors. It is important to extend the themes; studies of crypto-remittance pilots, DeFi platforms, digital microinsurance and digital ID initiatives would help address what is not yet known. In addition, models created by researchers should include user-

capability factors. There is a lack of studies that test how user training in digital or financial matters affects outcomes. Future research could perform field experiments on literacy or include it as a moderator. If education, design and data science experts partner with each other, they can create more inclusive interfaces and literacy programs. Furthermore, little policy-oriented research is done; this work could help guide fair governance.

Researchers can gather better evidence about how FinTech influences society by choosing these paths. While the literature covers many themes well, its limits suggest that more detailed and varied studies are needed to support theory and practice in this field.

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APPENDIX

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