FinTech as a Transformative Model for Financial Inclusion: A Systematic Review

By
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Abstract

Framework: The convergence of finance and technology has dramatically altered the financial industry, resulting in the rise of the FinTech phenomenon and posing a challenge to conventional financial practises. FinTech platforms promise numerous benefits to end users, including lower transaction costs and improved access to financing and investment, which is especially advantageous to underserved populations in less developed countries. These are regions where the financial industry is discovering a wide range of potential customers, ultimately contributing to the goal of Financial Inclusion.

Objective: Based on this premise, this research critically examines FinTech's role in promoting Financial Inclusion scrutinising the current state of knowledge on the matter. It aims to evaluate its potential as a transformative model with a specific focus on identifying the precise components necessary to promote the domain of Digital Financial Inclusion.

Methodology: This study employs a systematic review methodology to analyse academic research, explore phenomena, challenges, inconsistencies, and ongoing disputes related to the subject matter, thereby establishing a foundation for future research and knowledge dissemination.

Results: The research substantiates FinTech's role in advancing Financial Inclusion, thereby acknowledging its transformative potential and unique ability to address evolving global financial needs, democratising financial services. The study contributes by constructing a precise theoretical framework for Digital Financial Inclusion, incorporating dimensions of Financial, Digital, and Social Inclusion, all contingent on a supportive Regulatory and Legal framework.

Author keywords: FinTech; Financial Inclusion; Digital Financial Services; Digital Transformation; Inclusive Finance; Digital Financial Inclusion.

A mia Nonna,

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l'importanza di seminare dei fiori

nel passaggio che è questa nostra vita.

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List of abbreviations

DFI	Digital Financial Inclusion
DFS	Digital Financial Services
FA	Financial Access
FI	Financial Inclusion
FL	Financial Literacy
FS	Financial Services
FU	Financial Usage
SME	Small and Medium Enterprise
TAM	Technology Acceptance Model
UTAUT	Unified Theory of Acceptance and Use of Technology

NB: UOM Harvard Reference Guidelines was used throughout

Chapter 1: Introduction

FinTech is the convergence of Financial Services (FS) and technology. Today, many start-ups are innovatively offering a range of FinTech services and products that have historically been the monopoly of traditional financial intermediaries. There is significant economic momentum behind FinTech, which is disrupting the traditional value chain and offering new opportunities. The burgeoning FinTech landscape has become a focal point of interest among practitioners, regulators, and scholars alike. Although the evolution of finance has always been closely linked with technological progress, current digitalisation and communication technologies propel the technological evolution of the financial sector with unprecedented acceleration. At the same time, however, as noted by Bergara and Ponce (2017), while FinTech has experienced rapid growth in recent years, its market share remains modest in comparison to the expansive domain covered by traditional financial intermediaries. All the while, the current circumstances do not reduce the potential of FinTech to strengthen its foothold in specific market segments. It is in this context that the concept of Financial Inclusion (FI) arises.

In an age of interconnectedness, economic growth and progress are inextricably linked to the availability of financial services. At the core of these financial services lie the pillars of credit, savings accounts, and diverse monetary transactions, which have evolved into indispensable drivers of economic expansion (Demirgüç-Kunt, Klapper et al. 2022). They also play a pivotal role as security mechanisms, allowing individuals, households and organisations to withstand economic downturns with greater efficacy compared to those lacking access (Moore, Niazi et al. 2019). In an economic system predicated on the principle of unrestricted individual access to conventional banking services, the lack of this access gives rise to a multitude of complex

consequences, such as impeding the accumulation of capital and restricting the availability of financial resources (Sala 2022).

These consequences have far-reaching repercussions. Financial Exclusion is a prevalent global concern that impacts a significant number of individuals. The Global Findex Report indicates that a staggering 1.4 billion adults worldwide are unbanked and unable to avail of financial services. A different cohort falls within the *underbanked* category, in which individuals maintain savings and/or checking accounts but infrequently utilise them and lack access to credit cards and loans. This demographic encompasses a total of 3.5 billion people. Interestingly, there are no statistically significant percentage differences between advanced and developing economies, with both being affected equally at 24% and 29%, respectively (Demirgüç-Kunt, Klapper et al. 2022). This underserved segment of society is precisely the demographic that FinTech seeks to include in the financial ecosystem.

Empirical data highlights a positive trajectory in global account ownership made possible by FinTech. The significant surge is evident as the percentage of adults with bank accounts worldwide increased from 51% in 2011 to a remarkable 76% in 2021. Notably, developing economies experienced the highest upswing, registering a 30% increase, representing 71% of the total population. This enhancement, as stated by the World Bank, brings advantages such as generating increased investments in microenterprises, gaining more control over money (especially for women: the gender gap in bank account ownership has decreased for the first time to 6% after hovering around 9% over the past decade), and making individuals more resilient to financial shocks, thanks to savings and insurance (Demirgüç-Kunt, Klapper et al. 2022). It can thus be stated that digitalisation constitutes a widespread and irreversible trend besides being a key tool for

facilitating financial technologies. In this framework, FinTech can be conceived as a fundamental instrument that seeks to bring about a more inclusive society.

Based on the premise that FinTech substantially impacts the attainment of FI (Lele 2019), this research seeks to systematically elucidate this role, ultimately providing a structured analysis of this topic. The primary objective of this research is to assess the current state of FI supported by FinTech, based on academic research, and to evaluate FinTech's potential as a transformative model for FI, in accordance with academic theory. In addition, the study aims to identify the fundamental elements necessary for constructing a robust framework of Digital Financial Inclusion (DFI), as recognised by academic research at large. In order to achieve the stated objective, the following research questions are addressed:

Research Questions
To what extent has the scholarly community progressed in evaluating the potential correlation between FinTech and Financial Inclusion?
Is fintech recognised as a transformative model for Financial Inclusion within academic theory?
What are the fundamental components required for a comprehensive Digital Financial Inclusion framework, as identified by academic research?

The methodology utilised for this study involves the implementation of a systematic review of academic research. The present dissertation examines the phenomena, challenges, inconsistencies, and ongoing disputes that are associated with the subject matter and its progression. The employed methodology utilises an inductive approach to discern themes and construct a thematic map and domain ontology, whilst also establishing a foundation for further research and the distribution of knowledge (Saab and Fonseca 2008). Furthermore, this review

aspires to provide valuable insights, particularly to newcomers in the field, by providing them with an adequate understanding of the dynamic interaction between FI and FinTech.

With regard to the structure, this research is structured into four chapters. Firstly, the following chapter lays the groundwork for the analysis by critically exploring the multifaceted concept of FI, providing a theoretical definition that encompasses its dimensions. Emphasising the interplay between supply and demand, the chapter discusses the potential influence of FinTech on both aspects, acknowledging barriers to financial access. Shifting focus to the FinTech sector, it analyses how technological advancements have introduced new business models, creating opportunities for market entry and expanding accessibility to traditionally excluded groups. Subsequently, the third chapter elucidates the methodology employed for the review, detailing the rationale, analytical approach, organisational technique, and presentation format. Thereafter, the fourth chapter presents and interprets the results derived from a systematic analysis, contributing valuable insights to the ongoing discourse on the relationship between FinTech and FI. Highlighting increasing research interest, the results are graphically organised into four thematic areas, providing a concise understanding of the empirical landscape. Lastly, the concluding chapter is devoted to addressing the research questions. It takes stock of the core findings, deriving substantive conclusions from the exploration of FinTech's influence on FI. The chapter acknowledges and discusses the inherent limitations, including scope constraints and potential biases, enhancing the study's transparency and reliability, and provides insightful suggestions for possible future research directions.

Chapter 2: Background of the study

2.1. Overview

For the purpose of carrying out a holistic review of the existing literature on the impact of FinTech on the development of FI, a solid understanding of the fundamental principles underpinning the subject matter is needed. Therefore, this chapter provides an overview of the essential concepts, theories, and dimensions analysed in this research.

To that end, this chapter is structured as follows. First, it critically examines the multifaceted and complex notion of FI, thereby providing a theoretical definition characterised by a holistic view of the phenomenon. Such a definition establishes the foundation for understanding the potential impact of FinTech enterprises on the development of FI.

Secondly, the chapter complements the theoretical definition with a discussion on the *demand* and *supply* sides of FI. The reason to engage in such discourse is recognised in the context of the research, as FinTech solutions have the potential to exert substantial influence on both aspects (Joia and Cordeiro 2021). In light of that assessment, the chapter also touches on barriers to FA.

Finally, the chapter focuses on the FinTech industry and analyses how technological advancements have transformed the financial sector by introducing new business models. As a result, new opportunities have emerged for both suppliers and consumers. These innovative business models have created new possibilities not only for new entrants into the market but have also expanded the scope of services and products beyond the confines of traditional consumers.

2.2. Defining the concept of Financial Inclusion

The first aspect to be considered when seeking to provide a definition of the concept of FI is that that definition is relative since it simultaneously requires a description of its antithesis, namely, Financial Exclusion. As such, this is an effort of considerable complexity. According to Anderloni and Carluccio (2007), the first step requires determining the extent to which a country is financially integrated. Moreover, depending on the sophistication of the services utilised and/or reliance on unofficial suppliers, there may be varying degrees of Financial Exclusion. For reference, the World Bank distinguishes between being *formally served* and being *financially served*, classifying an individual as *financially excluded* if they possess absolutely no avenue of access to FS (The World Bank Financial Sector Vice-Presidency 2006).

While multiple definitions of FI populate the existing literature (**see Appendix A**), the prevailing perspective confines it to possessing a bank account or having access to FS. The basic metrics commonly employed in academic studies in order to identify markers of FI indeed include the proportion of the adult populace that possesses the means to engage in FS. However, mere bank account ownership does not automatically guarantee FI. Although the significance of opening a bank account should not be underestimated, it should be emphasised that this is simply one of several indicators of FI. Considering this as the sole indicator would unavoidably ignore other equally significant aspects, such as the degree and adequacy of use or the quality of FS. (Nuzzo and Piermattei 2020)

Drawing upon the foundational premise of the interdependence between *Social Inclusion* and FI (Ozili 2021), where the latter serves as a foundation for effective participation in the economic and social dimensions of one's nation of residence, it becomes apparent that the prevailing definitions of FI fail to consider the complexity of the phenomenon as well as its causes and

consequences. Therefore, the need is pressing to broaden the conceptual boundaries within which FI is defined. This is achieved by encompassing an individual's ability to efficiently use a multitude of FS to pursue their financial interests. On that account, Sarma (2008) puts forth a refined measure for assessing the level of FI, which hinges on the utilisation of a multidimensional index as an alternative approach to comprehensively assess several dimensions of FI, such as the extent of banking penetration, the level of availability, and the degree of utilisation of banking systems.

The bank account is a primary gateway to various FS and products related to payment and credit. However, it is equally crucial to consider the presence of *asset-building* tools that focus on accumulating wealth and safeguarding savings. These tools play a significant role in mitigating the vulnerability of individuals and households. Furthermore, the ability to build assets is a substantial avenue for attaining upward *social mobility*. This is especially true regarding demographic categories that need to be adequately acknowledged or valued for their level of expertise or professionalism. Such ability is closely associated with the accessibility of resources within the financial system. This is because incorporating individuals in the financial system diminishes their reliance on informal credit providers who employ exploitative methods, thus enabling the efficient distribution of resources and promoting economic productivity (Sarma and Pais 2011)[1].

In light of the aforementioned considerations, Financial Exclusion is interpreted in the framework of this research as indicating the phenomenon wherein an individual, household, or

[1] Reducing reliance on exploitative informal credit providers can enable efficient resource allocation by ensuring access to formal credit markets. Formal credit markets are more efficient than informal credit markets due to lower interest rates and better terms and conditions. This suggests that individuals have the opportunity to obtain funds at favourable interest rates to be used towards productive pursuits, hence efficiently allocating resources. This, in turn, can lead to higher economic growth and development.

organisation is unable to gain access to or make use of commercially available, customer-centric FS and products that enable them to participate fully in the economic and social life of their community (Réseau Financement Alternatif 2008). Consequently, drawing from Sarma's relevant perspective and holistic approach, the concept of FI is defined as:

> "*a process that ensures the ease of access, availability and usage of the formal financial system for all members of an economy"*(Sarma 2008, p.3).

Hence, a clear dyadic relationship emerges in which Financial Exclusion stands as the challenge to which FI serves as the solution. In all, the construct of FI encompasses a spectrum of dimensions, entailing the equitable provision of FS to individuals spanning diverse socioeconomic strata and thus contributing to the progress of an inclusive financial system (Mhlanga 2022).

2.3. Demand and Supply

Regarded as a multidimensional construct (Mhlanga 2022), the extent of the realisation of FI is contingent upon an elaborate interaction involving a plethora of combinations and variables related to the accessibility (i.e., *supply*) and utilisation (i.e., *demand*) of FS (Geraldes, Gama et al. 2022). As a result, the degree of FI is inherently shaped by two fundamental dimensions: the supply side, denoting the availability of FS and products, and the demand side, meaning the adoption of said services and products by both individuals and businesses (World Bank 2015).

2.3.1. Demand side: The role of Financial Literacy in achieving Financial Inclusion

As previously noted, FI stands as a multifaceted edifice, comprising one pillar dedicated to the provision of FS and its twin counterpart, *Financial Literacy* (FL) (Subbarao 2010). In light of the growing interconnectivity and elaborate nature of global economies (Philippas and Avdoulas

2020), individuals are confronted with the challenge of navigating difficult financial decisions. Arguably, however, the provision of essential FS may not be sufficient to promote the FI concept. On the contrary, there is a clear need for individuals to possess a minimum understanding in order to effectively employ and evaluate FS (Okello Candiya Bongomin, Ntavi et al. 2016). This is referred to as FL. A definition of the concept is offered by Ramakrishnan (2011):

"*Financial Literacy can broadly be defined as the capacity to have familiarity with and understanding of financial market products, especially rewards and risks in order to make informed choices. It refers to the ability to make informed judgments and to make effective decisions regarding the use and management of money. It is regarded as an important requirement for functioning effectively in modern society*." (Ramakrishnan 2011, p.2).

Just as Sarma (2008) asserts, FI refers to a process that ensures not only unhindered access and availability of formal financial systems but also their efficient use by all economic strata. This viewpoint is consistent with the notion that, while FI tackles the issue of exclusion, FL develops as a complementing force, improving comprehension and involvement in this vast financial landscape (Subbarao 2010).

As elucidated in the preceding section, the dimensions of FI indicate its multifaceted nature- the equitable dispersion of FS to diverse socioeconomic spectra propelling the evolution of an all-encompassing financial realm (Mhlanga 2021). Within this realm, FL assumes its crucial role, bridging the gap between mere access and informed decision-making. Just as the ease of access extends beyond supply to encompass demand, FL similarly transcends a mere imparting of knowledge to indicate the cultivation of an environment where individuals are empowered to navigate a spectrum of choices (Subbarao 2010). In this intricate symphony, FL harmonises with

FI to create a virtuous cycle where the availability of FS converges seamlessly with informed understanding, collectively propelling the trajectory toward an inclusive financial landscape.

However, the concept of FL holds drawbacks. It must indeed be acknowledged that FL may not necessarily increase individuals' *capacity* to participate in the formal financial sector, as capacity is predominantly determined by the availability of financial resources that can be used to conduct various transactions. This implies that those lacking financial resources, *i.e. capacity*, are unable to participate meaningfully in the financial system, regardless of their level of FL and their willingness in the system (Ozili 2020).

2.3.2. Supply side: Access to Financial Inclusion

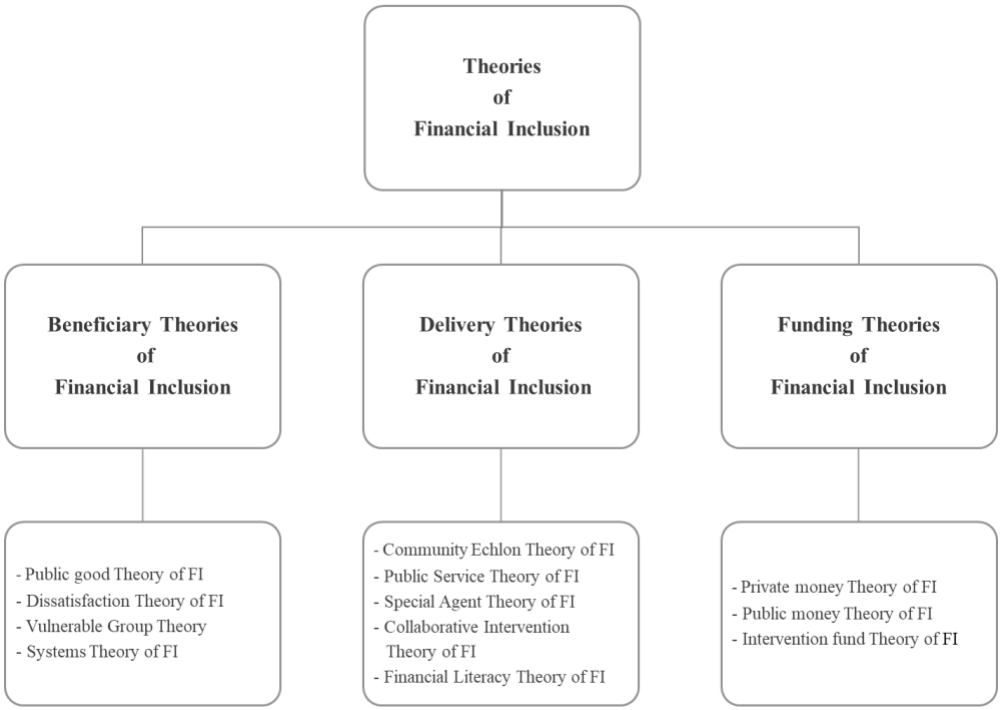
On the verge of the discourse on the constraints of FL, examining the conditions that influence access to FS is especially important, thereby influencing individuals' capacity to participate in the financial system. According to Ozili (2020), theories clarify the nature of a given phenomenon, hence facilitating the comprehension of its resultant effects. Expanding on this viewpoint, an examination of the available literature elucidates the observed practises of FI and classifies the conceptual frameworks into three primary theories (Ozili 2020):

- the *Beneficiary Theories of FI*,
- the *Delivery Theories of FI*, and
- the *Funding Theories of FI*.

First, the primary objective of the *Beneficiary Theories of FI* is to identify and delineate the prospective recipients who stand to gain from the implementation of FI initiatives. Secondly, the *Delivery Theories of FI* seek to determine the appropriate entities responsible for providing FS

and/or products to people, families, and organisations. Lastly, the aim of the *Funding Theories of FI* is to establish the sources of funding for FI expenditures (Ozili 2020). Moreover, considering the diverse range of viewpoints presented in the scholarly literature, these three theories serve as overarching frameworks that incorporate various sub-theories (**see Figure 1**).

Figure 1: Theories of FI



Source: Ozili 2020

In light of Ozili's (2020) comprehensive framework, this research directs its attention towards facets directly aligned with its research objectives and integrates Ozili's (2020) conceptual framework encompassing the *Vulnerable Group Theory*, the *Collaborative Intervention Theory of FI*, and the *Private Money Theory of FI.*

First, the Vulnerable Group Theory identifies and delineates economically disadvantaged members of society as the primary beneficiaries of the practices of FI. These segments of the social

fabric include but are not limited to, young people, immigrants, the elderly and, depending on the country of residence, women, who are identified as integral parts of a particularly vulnerable category susceptible to economic shocks and financial crises (Ozili 2020). Recognising the reality that individuals, households, and organisations that are financially integrated exhibit greater resilience during periods of economic hardship compared to those that are excluded (Moore, Niazi et al. 2019), it becomes logical to facilitate the inclusion of vulnerable groups within the formal financial system (Ozili 2020).

Secondly, the *Collaborative Intervention Theory* is among the numerous *FI Delivery Theories*. This theory posits that the adoption of FI practices should involve the collaboration of multiple stakeholders. To achieve a significant level of FI, various interested entities, whether public or private, must cooperate to incorporate marginalised segments of society into the financial system. (Ozili 2020)

Lastly, the *Private Funding Theory of FI* contends that FI's endeavours should be financed through private sources. This preference for private funding is rooted in the expectation that private funders will demand accountability from fund recipients, ensuring efficient fund utilisation. Moreover, private funders can access public benefits, such as funding opportunities, depending on the project's characteristics. (Ozili 2020)

2.4. Barriers to Financial Access

The ability of an individual, household, or organisation to obtain credit substantially influences their complete engagement in the financial system, as it serves as a means to develop *capacity*, which, as remarked above, is a necessary condition of FI. Nevertheless, *credit risk* constitutes a major obstacle to achieving FI. The concept refers to the situation where a borrower

is unable to meet the agreed-upon terms and conditions of credit due to a lack of equal access to information between the borrower and the lender (Mhlanga 2021). Hence, the core of the analysis on supply-side choices in relation to credit revolves around the concept of *asymmetric information* (Jungo, Madaleno et al. 2022).

In that regard, Stiglitz and Weiss (1981) studied the effects of lenders' incapacity to assess borrowers' riskiness and monitor how a loan is used. This inability is ultimately conducive to a phenomenon known as *credit rationing*. Credit rationing occurs when disparities, specifically informational asymmetries, influence both the pricing, i.e. the *interest rates charged*, and the quantity of credit supplied, affecting the amount of available credit and the interest rates charged. Furthermore, information asymmetry gives rise to two significant challenges in the interaction between lenders and borrowers: *ex-ante adverse selection*[2] and *ex-post moral hazard*[3]. These challenges can potentially impact one's ability to access credit and savings (Stiglitz and Weiss 1981).

The inability to access FS may also be caused by *transaction costs*, namely, costs associated with the acquisition and maintenance of FS (Beck, Demirgüç-Kunt et al. 2008). Associated with geographical distance are *transportation costs*. This is particularly pertinent in rural areas, where opening bank branches is less profitable. Hence, bank concentration is low (Di Giannatale and Roa 2019).

[2] Based on ex-ante information asymmetry and imperfect market regulation, commercial banks are unable to separately lender quality and therefore raise loan interest rates to avoid risks. Moreover, the frequent absence of sufficient documentation exacerbates this issue, leading to further challenges related to adverse selection (Marquez, 2002).

[3] In the context of a credit agreement, it means that one party may take advantage of the lack of information of the other party and act in ways that serve their own interests. The main driver is *non-compliance* with the credit agreement, e.g., asset substitution, where the borrower takes advantage of their information advantage and engages in risky projects that may jeopardise the funded project (Stiglitz & Weiss, 1981).

2.5. The role of FinTech

FinTech originates and thrives within the broader digitalisation of the economy. Technological innovation is a disruptive factor for the traditional financial industry, giving concrete expression to the foresightful statement made by Bill Gates in 1994: '*Banking is necessary, banks are not*' (Varga 2017, p. 22). This assertion succinctly captures the essence of the FinTech concept, highlighting its significant relevance in the contemporary financial environment. FinTech is often regarded as a potentially *transformative model* that, in the context of FI, denotes a business approach characterised by its capability to effectively connect a novel financial technology with the evolving requirements and accessibility challenges within an economy's financial system. This model is critical for reshaping the financial industry by effectively aligning technological advancements with emerging market demands (Kavadias, Ladas et al. 2016), reflecting Sarma's (2008) holistic view of improved access, availability, and utilisation of formal FS for all members of the economy.

Despite the growing interest in FinTech as a phenomenon, there still is no unified and widely shared definition within academic discourse and scientific journals that emphasises the evolving nature of FinTech, where ongoing innovation continuously outpaces formal categorisation. That notwithstanding, in the context of this research, a comprehensive definition offered by the *Financial Stability Board*, originally established as an international body to study the FinTech market, will be adopted:

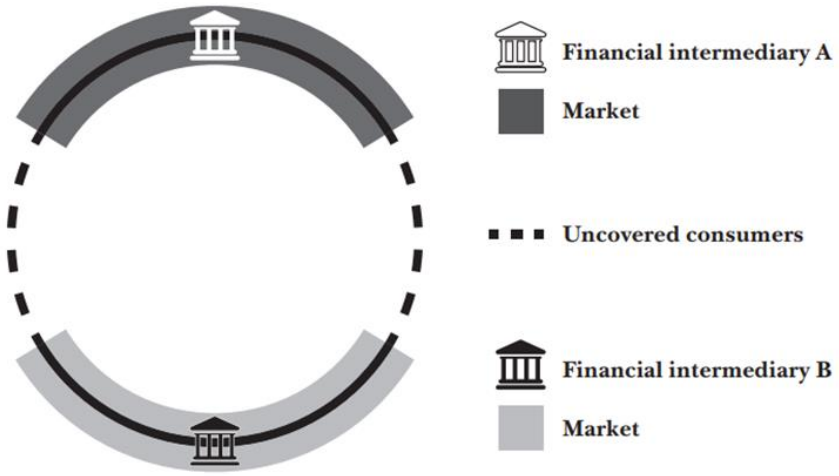
> "*FinTech is defined as technology-enabled innovation in financial services that could result in new business models, applications, processes, or products with an associated material effect on the provision of financial services*." (Financial Stability Board and Committee on the Global Financial System 2017, p.2)

However, FinTech is regarded not just as a technology progression within the financial industry but also as a means to promote the democratisation of FS (McKinsey 2017). FinTech is indeed an interdisciplinary phenomenon. Investments in technology enable the rapid and cost-effective overhaul of operational procedures for traditional financial activities, such as payment services, and of new business models for financing and investment. FinTechs[4] have the ability to lower transaction costs and provide convenience to users through their extensive use of digital processes and specialised services that are closer to customer demands than traditional intermediaries. This can improve access to credit and investment opportunities for underserved individuals and businesses. The continuous lack of coverage by conventional financial intermediaries for these specific groups accentuates the relevance of this. Conversely, FinTech companies perceive these individuals and organisations as potential customers.

Based on the premise that certain customers have varying degrees of proximity to traditional FS, which may not necessarily be based on physical distance but rather on the lower costs they incur, such as transportation or transaction expenses, an illustrative method introduced by Salop (1979) can be employed to represent this situation (**see Figure 2**) visually.

[4] In the context of this study, the term *FinTechs* denotes companies operating within the FinTech sector.

Figure 2: Partially uncovered financial market

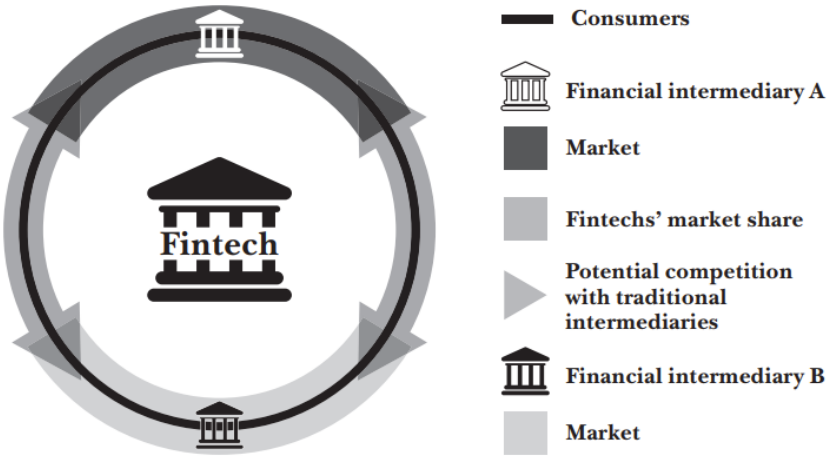


Source: own elaboration

The transaction cost for each customer to access FS is proportional to the distance to the specific provider, and an infinite number of consumers are uniformly distributed on a circle, while a finite number of traditional FS providers are established at equal distances on the same circle. **Figure 2** depicts a scenario in which two conventional financial intermediaries operate in a financial market, where a part of it is uncovered.

Omwansa and Waema (2014) found that the utilisation of digital technology in FS reduces usage, financial, and administrative costs, hence deepening FI and improving market efficiency. **Figure 3** shows how the reduced transaction costs make it possible for FinTech businesses to attract and retain these consumers while also effectively competing with the established services of traditional intermediaries.

Figure 3: Impact of lower costs on FinTech competitiveness and consumer attraction



Source: own elaboration

FinTechs' business models are anchored on Porter's model of *Generic Strategies* (i.e., *cost leadership, differentiation, and focus*), which companies can adopt in order to gain competitive advantage. The tactics are related to how restricted the scope of a company's activity is and how much it tries to differentiate its products (Porter 1985). FinTech companies often utilise a combination of these strategies to generate revenue. In other words, competitive advantage is acquired by providing greater value to customers, either through lower prices or by providing better benefits. FinTech is changing the FS delivery paradigm by providing low-cost solutions and focusing on lower-income communities with restricted access to FS.

2.6. Closing remarks

This chapter has laid the groundwork for future investigation of the impact of FinTech on FI by providing the basic ideas and qualities connected with each of the two. Following a definition of FI as a multidimensional concept encompassing not only access to FS but also their effective utilisation across diverse socioeconomic strata, the chapter has delved into the dual aspects of FI:

the supply side, marked by the availability of FS and the demand side, emphasising the usage of said services. The need for FL to attain FI was discussed, with the understanding that simple access is insufficient without the ability to make informed financial decisions. As the chapter progressed, it addressed the complex phenomenon of FinTech, firmly cementing its roots in the digitisation of the economy and showcasing its potential to both disrupt and democratise existing financial sector practices.

Whereas this chapter has diligently elucidated the intricacies of the subject matter by expounding upon its fundamental concepts, its facets still exhibit a high level of complexity. The ongoing academic discourse surrounding this topic remains open. As will be further elucidated and deepened in the following chapter, the choice to adopt a systematic literature review as a methodology arises precisely from the need to review, thematically organise, and synthesise the various streams of literature.

Chapter 3: Methodology

3.1. Overview

This chapter aims to elucidate the methodology used for conducting the review, the rationale for which such methodology was employed, the analytical approach, the organisational technique, and the format in which the results will be presented.

3.2. Research Design

The present study adopts a *systematic review* procedure which aims to synthesise and assess information in an interpretive manner. This method subscribes to the philosophical school of *interpretivism* and is based on an *inductive approach*, which allows to flexibly identify patterns and themes from the data (Goddard and Melville 2001). This approach is particularly suited for this interpretive research as it facilitates the investigation of the multifaceted and dynamic relationship between financial inclusivity and the constantly evolving realm of FinTech. In the words of Lodico, Spaulding and Voegtle (2010),

> "*The inductive approach is a 'bottom-up' approach to understanding, starts with observations, and culminates in the development of theories or abstractions as a result of these observations*." (Lodico, Spaulding and Voegtle 2010, p.10)

In light of the inductive orientation of this study, definitions will be generated from the data collected to identify patterns and relationships and contribute to constructing a *thematic map* (Saunders, Lewis et al. 2019). Moreover, the *secondary data* research, well-suited to interpretivism, offers additional support to the study's approach.

The choice of this methodological approach emerges from the complex nature of the subject matter and the need to navigate multiple fields that collectively contribute to a thorough understanding of the impact of FinTech on financial inclusivity. These areas of study encompass *economics, finance, technology projection, societal transformation, telecommunication legislation, enterprise growth, microfinance, and development research*. All these fields reflect the growing significance of FinTech and FI across various academic domains, underscoring the intricate interplay between technology, society, and financial ecosystems. Reliance on a systematic review methodology is regarded as necessary in order to integrate the many domains outlined above and offer a holistic perspective on the multifaceted impact of FinTech on FI.

This review is based solely on scholarly research and aims to investigate, evaluate, and integrate all relevant findings by employing a transparent and reproducible methodology, as defined by Tranfield, Denyer and Smart (2003). This will ensure the repeatability of the research, a concept that pertains to the comprehensive analysis of previous research undertaken on a certain topic, as defined by Petticrew and Roberts (2006).

The process begins with establishing a protocol characterised by a thorough and transparent approach to the literature search, identifying and selecting articles, and the analytical procedures adopted for data synthesisation. Detailed protocols for each process are clearly outlined hereunder, providing a detailed record of the methods employed.

3.3. Criteria selection

The *eligibility criteria* are established in order to determine the data items that will be included in the analysis. During the preliminary study of the approach, no restrictions on the journals and/or study areas were imposed as this research's subject matter is interdisciplinary and intersects a wide

array of fields. Moreover, imposing search limitations based on predetermined journals or areas of study could prove to be excessively restrictive, ultimately hindering the successful outcome of the research. The criteria identified to collect data items for this research are as follows:

1. *Timeframe*. The data collection spans the years 2008 to 2023. The selection of this timeframe is based on the recognition that 2008 marked a significant turning point in the development of FinTech companies. These indeed emerged from the *Global Financial Crisis of 2008* as a disruptive tool in relation to the established FS industry (Zavolokina, Dolata et al. 2016).

2. *Language*. The focus is on English-language papers. The purpose of this decision is to preserve accessibility in the analysis.

3. *Publication type.* Scholarly articles.

4. *Study design. Conceptual* AND *Empirical* AND *Review*. The choice to analyse studies with different designs is essential to guarantee a comprehensive review, considering the relatively recent emergence of the subject matter.

5. *Relevance to Research Questions*. Selected data items should be directly related to the research questions outlined in the Introduction to this research. This criterion ensures that all included papers directly address the research objectives and provide insights into the themes and topics under investigation. Papers that do not align with the research questions are excluded from the review to maintain the coherence and relevance of the study.

3.4. Search Strategy

This section outlines the search strategy used to identify papers of relevance. The purpose of this section is to provide a clear understanding of the systematic approach employed to ensure that all pertinent literature for this research can be collected and serve as the basis for further analysis.

Firstly, this study utilised the *Scopus* database as the major source for data collection. The selection of this particular database was based on two primary factors. Firstly, its extensive subject matter coverage was deemed advantageous owing to the large range of publications from which relevant material is derived. Secondly, the database's search functionality is significant in terms of search capabilities, filters and indexing features.

Secondly, following Kitchenham and Charters' (2007) guidelines, the keywords for the literature search were determined based on the research questions established for the study. Two distinct concept domains were identified from the research questions: *FinTech* and *FI*. The resulting keywords were designed to cover a broad spectrum of concepts relevant to both concepts. The list of identified keywords is as follows: *Financial Technology; FinTech; Digital Financial Services; Mobile Banking; Mobile Money; Digital Finance; Digital Payments; Peer-to-peer lending; Financial Inclusion; Financial access; Unbanked; Underbanked; Banking the unbanked; Economic Development; Poverty reduction; Financial empowerment; Financial literacy; Financial Capability; Fintech adoption; and Digital Financial inclusion.*

Thirdly, *Boolean operators*, including “AND,” “OR,” and “NOT,” were used in order to combine terms and refine the results of search queries efficiently.

Various filters were applied to refine the search results in line with the aforementioned criteria and search strategy. The resulting search string is as follows: TITLE-ABS-KEY ((“financial

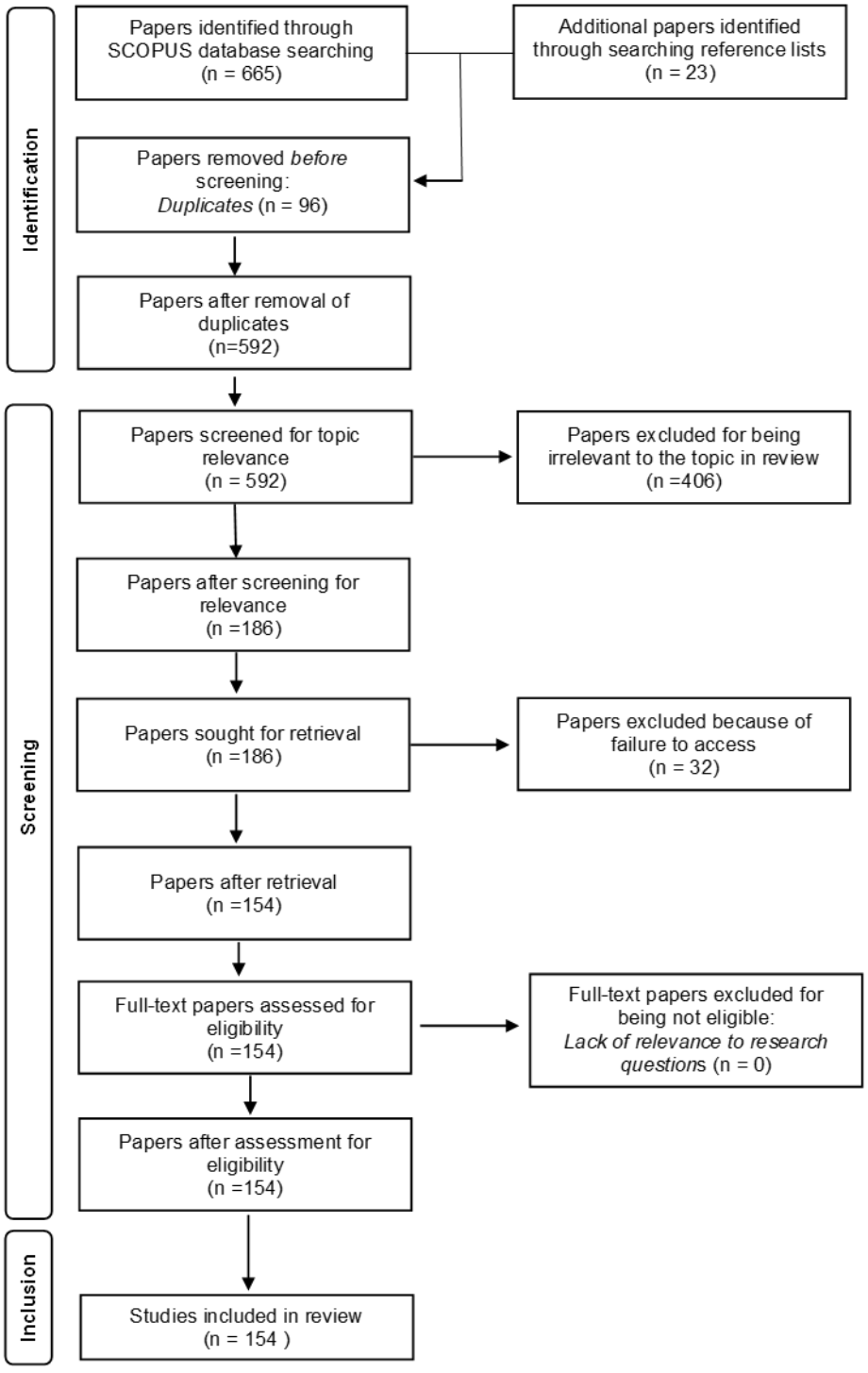
technology” OR “FinTech” OR "digital financial services" OR "mobile banking" OR "mobile money" OR "digital finance" OR "digital payments" OR "peer-to-peer lending") AND (“financial inclusion” OR “financial access” OR “unbanked” OR “underbanked” OR "banking the unbanked" OR "economic development" OR "poverty reduction" OR "financial empowerment" OR "financial literacy") AND ("Financial Capability" OR "Fintech adoption" OR "Digital Financial inclusion")) AND PUBYEAR > 2008 AND PUBYEAR < 2024 AND (LIMIT-TO (DOCTYPE, “ar”) AND (LIMIT-TO (LANGUAGE, "English")).

Lastly, in order to obtain a comprehensive list of literature, relevant publications that did not meet the specific keyword criteria were identified through a manual *backward search*. This process involves scrutinising the reference list of articles to identify pertinent work that may have been missed.

3.5. Methods for Identification, Screening and Inclusion, and Extraction of Data Items

In order to uphold transparency and ensure the value of the research, the present study adheres to the *Preferred Reporting Items for Systematic Reviews and Meta-Analyses* (PRISMA) framework, which is illustrated in detail in **Figure 4**. This framework ensures that the review process is carried out with methodological integrity, which enhances the credibility of the findings. Each step of the process is meticulously recorded to communicate the review process effectively and enable the assessment of its validity and reliability (Sohrabi, Franchi et al. 2021). The following sections provide a thorough and precise account of this procedure.

Figure 4: PRISMA framework (Sohrabi, Franchi et al. 2021)



3.5.1. Identification

A meticulous approach was implemented to guarantee that only the most pertinent papers were analysed in the research. The identification of relevant papers was predicated on the criteria and search strategy explained in the preceding section. More detailed studies were initially included according to their titles and keywords. If a study that was in the process of being assessed for identification contained keywords that featured in the search string but whose title did not seem relevant for the purposes of this research, its abstract was scanned to assess whether the study could be useful based on the information provided therein. The search on the *Scopus* database returned a list of 665 research papers. By carefully examining the reference list of the most cited papers, an additional 23 relevant papers were discovered, bringing the total number to 688 research papers.

Before progressing with the screening phase, a thorough examination of the papers was conducted to eliminate any possible duplicates. Out of the initial 688 papers, 96 duplicates were identified and subsequently removed, resulting in 592 papers.

3.5.2. Screening and Inclusion

Following the identification phase, the titles, abstracts, keywords, and full texts of the identified publications were meticulously screened to remove unnecessary sources and identify relevant publications that aligned with the research parameters. In the research process, screening papers is a critical step in refining the dataset to ensure that the material is directly relevant to the research objectives. Initially, 592 papers were assessed, out of which 406 were excluded due to their need for alignment with the research topic. Consequently, the screening process yielded a narrower set of 186 papers that met the criteria and could be subject to further consideration. Upon

identification of potentially relevant articles, the full-text version of the indicated publications was retrieved, resulting in a dataset of 154 papers after the exclusion of 32 inaccessible papers. Finally, the remaining 154 full-text publications were thoroughly evaluated and screened for eligibility. The screening resulted in the determination that all of them were relevant for the purpose of answering the research question. Therefore, zero papers were omitted for not meeting the eligibility criteria. As a result, 154 papers constitute the basis of this research.

Following the *Identification*, *Screening*, and *Inclusion* processes, a systematic *data extraction* procedure for the included articles was carried out, in which study specifics and key findings were extracted and methodically organised into an *Excel workbook*. This was developed to document research, facilitate the coding process, and identify themes. Papers were sorted chronologically in the workbook. However, while the reference timeframe criterion encompasses articles ranging from 2008 to 2023, the presented papers were published from 2011 onwards after excluding papers published between 2008 and 2010 that were deemed irrelevant during the screening.

3.6. Methods for Data Synthesisation

Braun and Clarke's (2006) guidelines form the basis for the thematic analysis procedures used to synthesise the 154 data items included in this research. As described by Nowell, Norris et al. (2017, p. 2), a thematic analysis is a "*method for identifying, analysing, organising, describing, and reporting themes found within a dataset.*" In the context of this review, the study follows the *Six-Phase Thematic Analysis Framework* put forth by Nowell, Norris et al. (2017, p. 4), structured into familiarising with the data, generating initial codes, identifying themes, reviewing themes, defining and naming themes, and reporting the results.

Figure 5 offers a comprehensive representation of the data synthesis process. While the framework provided by Nowell, Norris et al. (2017) serve as an overall guiding method; each stage is tailored to align with the specifics of the current research. Furthermore, an additional phase has been incorporated into the original framework, specifically for creating thematic areas, named *Defining thematic areas*. Thematic areas represent the personal interpretation, hence the underlying conceptualisation, and thus grouping of the central theme of each paper assessed. In fact, this study follows a two-tiered thematic analysis approach, corresponding to Braun and Clarke's (2006) distinction between *semantic* and *latent* levels of themes.

To elucidate further, semantic themes, as defined by Braun and Clarke (2006, p.84), are such themes that reside "*within the explicit or surface meaning of the data, and the analyst is not looking for anything beyond what a participant has said or what has been written*". By contrast, the latent level of analysis goes beyond the overt expressions and seeks to "*identify or examine the underlying ideas, assumptions, and conceptualisations – and ideologies – that are theorised as shaping or informing the semantic content of the data*" (Braun and Clarke 2006, p. 84).

A mention should be made about the software used for data synthetisation, namely *Microsoft Excel*, and the rationale for using it. Firstly, the programme's ease of use and adaptability make it well-suited to arrange and organise substantial quantities of data efficiently. Secondly, given the context of this research that involves the synthesis and organisation of numerous streams of literature from several academic domains, *Excel* provides an intuitive structure to facilitate accurate data management. Lastly, the software's efficient setup time obviates the need for protracted periods of adaption, a quality that becomes advantageous when expediency is paramount.

Figure 5: Data synthesis process (Own elaboration from Nowell, Norris et al. 2017)

Step	Nowell, Norris et al.'s (2017) TA framework	Description
1	Familiarising with data	Read the full-text papers while concurrently documenting preliminary reflections.
2	Generatinginitial codes	Each data segment that was related to the research questions or conveyed something intriguing about the latter was coded. The coding procedure stressed the discussion and conclusion of each data item. Open coding was used, meaning that there were no predetermined codes; instead, codes were generated and modified as the coding process progressed.
3	Identifying themes	The text was condensed by generating preliminary themes from clusters of code words with comparable meanings.
4	Reviewing themes	The identified preliminary themes are evaluated, modified, and expanded upon. Examining the data associated with each motif to determine whether the evidence actually supports it. It is determined whether the themes apply to the entire data set. The themes are evaluated based on their cohesion and distinction from one another.
5	Defining and naming themes (refers to the central theme of each paper under assessment)	This step has the objective of refining the themes, specifically of "*identifying the essence of each theme is about* " (Braun and Clarke 2006, p.92).
6	Definition of thematic areas	This procedure entailed recognising similarities between the central themes extracted from each data item and clustering them into broader thematic areas, thereby developing a foundation for a deeper conceptualisation of the subject matter.
7	Reporting the results	The identified central theme of each paper under review, as well as the subsequent determined thematic areas, are outlined.

3.7. Organisation and reporting of the results

The thematic organisation of the subject matter is graphically mapped and delineated in **Figure 7**, whilst this visual presentation of the findings is structured to offer a holistic overview of the identified themes and thematic areas. As such, **Figure 7** illustrates the interrelationships and

connections among these themes, offering a broad perspective of the thematic landscape addressed in the research.

Furthermore, the findings are presented in an expanded format through a consolidated table (**see Figure 8**) that encapsulates distinct thematic areas, namely the *Nexus between FinTech and Financial Inclusion* (T1), *Financial Access* (T2), *Regulatory and Legal Environment* (T3), and *Financial Usage* (T4). In addition to incorporating the various thematic areas, **Figure 8** further segments these areas, which are subsequently divided into more specific themes. This subdivision is crucial, as it is through these themes that the definition of each thematic area has been achieved. The themes serve as conceptual containers, encapsulating discernible patterns and similarities unearthed during the analysis of the 154 papers included in this review. The identification of these patterns and similarities was instrumental in the genesis of themes as their amalgamation led to the delineation of each overarching thematic area.

The purpose of employing such a structured strategy in organising and reporting the data items is to improve comprehension of the intricate interactions among many topics, hence clarifying the diverse implications of the subject matter.

3.8. Closing Remarks

In concluding the methodology chapter, it is critical to reiterate the significance of the selected research approach. By adhering to a two-tiered thematic analysis approach, encompassing both semantic and latent levels, the methodology employed is appropriate to identify not only the explicit attributes but also the root concepts and assumptions that constitute the topic under review. The following chapter is dedicated to the presentation and discussion the results.

Chapter 4: Results and Discussion

4.1. Overview

The purpose of this chapter is twofold. Firstly, to present analysis results aligned with the preceding criteria and concurrently offer their scholarly interpretation. Such an approach is deemed appropriate in light of the current study's established methodology for purposes of clarity and comprehension (Saunders, Lewis et al. 2019).

4.2. The growing scientific production

Figure 6: Growing scientific production (Own elaboration from included papers)

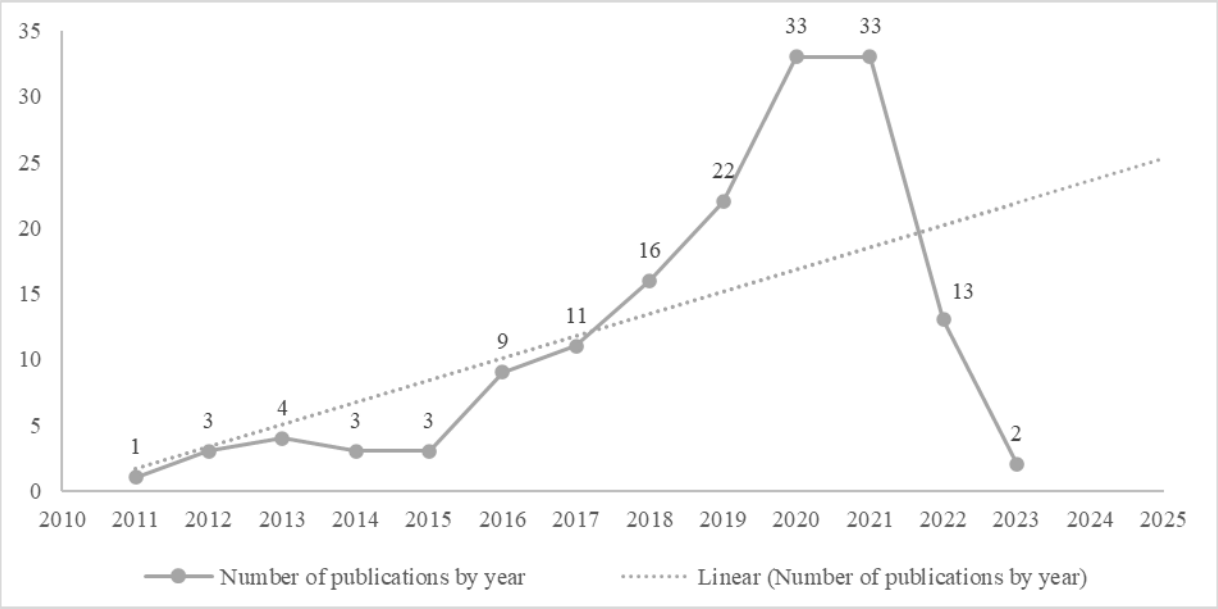


Figure 6 depicts the yearly count of scholarly articles on FinTech and its role in promoting FI. The timeframe aligns with the papers included in this study, spanning from 2011 through 2023. Although an adjustment in the search parameters may cause the outcomes to vary, given the extensive search parameters employed, it is reasonable to hold that **Figure 6** offers a comprehensive snapshot of scholarly work pertaining to this topic.

The upward trend in article production over time reflects an increasing academic interest in this study area, which supports the background information discussed earlier. This interest can be attributed not only to the rapid advancements in financial technologies witnessed in recent years but also, perhaps more importantly, to the increasing recognition of the pivotal role that these technologies play in advancing FI and, consequently, economic development. (e.g. Munyegera and Matsumoto 2016; Chen 2016; Schwittay 2011).

Between 2011 and 2013, scholarly publications on FinTech increased steadily. This is congruent with what had been anticipated in the preceding chapters, where it was articulated that the FinTech phenomenon emerged as a response to the Global Financial Crisis of 2008 as a disruptor of the established FS industry (Zavolokina, Dolata et al. 2016). However, publications declined in 2014 and 2015 for no discernible reason. A possible fluctuation in research interests and/or funding is thus hypothesised. The observed pattern is fluctuating because evidence shows a significant surge in the number of recorded publications, with a peak between 2020 and 2021. This sudden spike coincided with the global spread of the COVID-19 pandemic, which, *inter alia*, accelerated the worldwide digitisation process. Consequently, in the realm of FinTech, this led to a worldwide marked increase in the implementation, adoption, and usage of digital finance (e.g. Aziz and Naima 2021; Banna and Alam 2021; Mansour 2022).

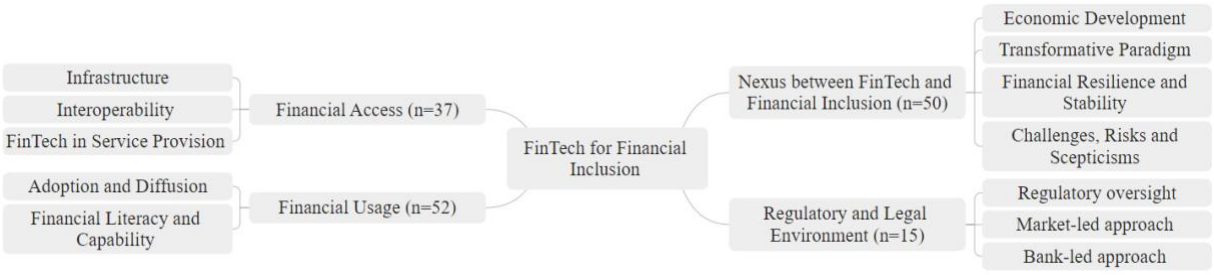
Figure 6 also indicates a decrease in publications in 2022 and 2023. Further details are required to understand this drop. While there was a significantly higher number of papers published before 2022 among the articles initially identified compared to what features in the figure above, many of these were excluded as they were deemed irrelevant to the objectives of this study. The excluded articles tended to be highly specialised, emphasising the utility of specific digital financial instruments. While this observation highlights the increasing specialisation within

research in this field, it also underscores the reasons for their exclusion from the present study. Regarding 2023, it should also be noted that as the year has not yet concluded, additional publications may be issued before its end.

In conclusion, **Figure 6** unequivocally shows a substantial increase in the number of publications concerning the impact of FinTech on the level of FI. The linear trendline presented serves as evidence to underscore the significance of the subject matter as it not only reveals a consistent upward trend in the years considered but also forecasts the continuation of this growth in the upcoming years.

4.3. Visual representation of results

Figure 7: Thematic categorisation (Own elaboration from included papers)



The analysis identified four thematic areas in the review, as shown in **Figure 7**. As noted in the previous chapter, these thematic areas are further divided into segments to provide a better understanding of the specific themes discussed in the papers within each thematic area. In alignment with such categorisation, the results are presented in the following order: the Nexus between FinTech and FI, FA, Regulatory and Legal Environment, and FU.

Figure 9: Thematic analysis (Own elaboration from included papers)

Thematic Area	Theme	Theme descriptor
Nexus between FinTech and Financial Inclusion	Economic Development	FinTech as a catalyst for economic growth.
	Transformative Paradigm	Major advancements in the creation, distribution and consumption of financial products.
	Financial Resilience and Stability	The role of FinTech in providing means to address unanticipated economic issues, thereby improving overall financial stability.
	Challenges, Risks and Scepticisms	Challenges, risks and scepticisms associated with the prevailing narrative that potrays FinTech as a universal remedy for overall development.
Financial Access	Infrastructure	Improving infrastructure to remove barriers that prevent individuals from accessing financial services.
	Interoperability	Interoperability between FinTechs and traditional institutions to address the challenge of Financial Exclusion.
	FinTech in Service Provision	Adopting an intangible-driven approach to bolster inclusivity in the delivery of financial services.
Regulatory and Legal Environment	Regulatory oversight	Presenting FinTech as a compelling case for appropriate regulation.
	Market-led approach	Type of regulatory regime based on the specific industry actors involved.
	Bank-led approach	Digital financial service are subject to the pre-existing oversight of the country's financial regulators.
Financial Usage	Adoption and Diffusion	Factors shaping the adoption and the diffusion of digital financial services.
	Financial Literacy and Capability	Existing relationship between both digital and financial knowledge and the use of digital financial services.

4.4. T1: The Nexus between Fintech and Financial Inclusion

This first thematic area within the scope of the research papers explores the vital correlation between the two concepts, as the term 'nexus' alludes to the ability of FinTech, understood as the implementation of technology to deliver FS, to enhance FI through the provision of Digital Financial Services (DFS) to individuals who are not encompassed within the traditional banking system (Jiang, Wang et al. 2021). The comprehensive assessment conducted led to the identification of 50 publications that were found to belong within this specific thematic area. These papers represent approximately one-third of the total papers that were reviewed. The large number of papers in this category can be attributable to the specific search parameters. However, these studies reveal significant aspects of the influence of FinTech on FI, encompassing its effects on economic development, its potential for transformation, its contributions to financial resilience and stability, as well as the challenges, risks, and scepticism associated with its role in expanding FI.

4.4.1. Economic Development

Extensive research has been conducted on the influence of financial technologies on economic growth, also in light of the rising body of literature on this specific matter. The basic, widely recognised premiss is that access to financial services is a fundamental catalyst for economic development (e.g. Ozili 2018; Lashitew, Van Tulder et al. 2019; Ahmad, Green et al. 2020; Demir, Pasqué-Cela et al. 2022; Demirgüç-Kunt, Klapper et al. 2020).

Among the numerous variables linked to economic development is the consumption factor. While consumption can be a driving force for the economic growth of any nation, its potential is often constrained due to various limitations, with liquidity scarcity being a primary concern.

Digital finance is a promising mitigating solution that has the potential to be highly beneficial, granting individuals, households, and businesses greater control and increased opportunities over their finances (Ozili 2018; Li, Wu et al. 2020). Digital finance contributes to an increase in consumption levels primarily linked to the integration of technology in the delivery of financial products and services, acting as an optimiser for resource allocation in the financial market. FinTech thus enables the efficient mobilisation of resources required for productive investments, thereby facilitating inter-temporal consumption smoothing, ultimately boosting consumption demand. In other words, FinTech promotes adequate consumption, the increase of which results in higher aggregate expenditure, which in turn leads to an upsurge in GDP (e.g. Ozili 2018; Li, Wu et al. 2020; Munyegera and Matsumoto 2016).

Digital finance is often a *timely aid* (Ji, Wang et al. 2021). Indeed, the success of FinTech does not solely stem from the technologies employed but, above all, from how they are employed and how they effectively serve businesses and real-life needs (Chen 2016). In developing countries, as per Munyegera and Matsumoto (2016), the mechanism of this impact is especially exemplified by the facilitation of remittances. User households are more likely to receive remittances more frequently, and the total value received is significantly higher than that of non-user households. This impact is attributed to the fact that technology enables the reduction of costs associated with transactions and the simplification of peer-to-peer transactions, broadening the scope of financial activity (Munyegera and Matsumoto 2016; Chen and Bellavitis 2020).

Moreover, digital finance has facilitated access to FS such as supply chain finance, microfinance, crowdfunding and leasing for individuals and enterprises. This has effectively alleviated financing constraints and, in turn, has promoted economic development. (e.g. Asongu and Nwachukwu 2018; N'dri and Kakinaka 2020; Li, Wu et al. 2020) From an individual and

household perspective, digital finance facilitates investments in health, education, insurance, and better savings management. From a business standpoint, access to DFS leads to increased sales and profits. Hence, appraising from this dual perspective, the use of DFS has a positive effect on alleviating vulnerability to poverty. (Demirgüç-Kunt, Klapper et al. 2020; N'dri and Kakinaka 2020; Wang and He 2020)

Particularly in rural areas, where the physical absence of banking institutions is more pronounced, it becomes evident how digital platforms can provide access to financial services even to those who can be classified as *unbanked* or *underbanked*. As a result, there is a reduction in the existing gap between rural and urban areas, not only in terms of FI but also in terms of income. In regions with lower economic development and education levels, the effect is particularly evident. (Asongu and Nwachukwu 2018; Demir, Pasqué-Cela et al. 2022) In this regard, FI is intertwined with technological inclusion, indicating that people living in poverty can benefit from access to digital technologies (Schwittay 2017; Demirgüç-Kunt, Klapper et al. 2020).

Furthermore, recent research by Mushtaq and Bruneau (2019) has shown a positive correlation between adopting ICT and FI and economic growth. Conversely, poverty and inequality have been found to have a negative relationship with this trend. Koomson, Villano et al. (2020) have also provided evidence indicating that an increase in FI has two key benefits for impoverished households. Firstly, it reduces the likelihood of a household being classified as poor by 27%. Secondly, it helps prevent exposure to future poverty by 28%. While FI has a significant role in reducing inequality across all income levels, its impact is particularly noticeable in higher-income countries. Nevertheless, rural areas too tend to benefit more from it, as it has been found to reduce poverty and vulnerability to poverty more effectively in these areas than in urban ones. (Koomson, Villano et al. 2020; Demir, Pasqué-Cela et al. 2022).

4.4.2. Transformative Paradigm

In the context of FI, FinTech has received a lot of praise for being a transformative, decentralised, interoperable, borderless, and transparent paradigm (e.g. Chen and Bellavitis 2020; Wang and He 2020; Lai and Samers 2021). The rise of financial technology has resulted in major advancements in the creation, distribution, and consumption of financial products. Tech firms and financial institutions have benefitted from introducing accessible, affordable, and user-friendly payment systems, lending platforms, investment tools, and insurance products (Lai and Samers 2022). FinTech has been observed to enable lower transaction costs, reduced processing times, increased accessibility to financial services, and the creation of customized services to meet the actual needs of customers. These abilities lead to catalysis of economic growth, driving aggregate consumption, increasing income, and reducing vulnerability to poverty. Similarly, recent research demonstrates that one of the key variables propelling it to this status is the mitigation of information asymmetry, a well-known challenge in the financial sector.

Moreover, the adoption of technology enables FinTech companies to expand their customer base by including segments that were previously excluded from the traditional financial system due to perceived risk factors. For instance, artificial intelligence makes banking accessible to those once deemed *unbankable* (Mhlanga 2020). These target customers include the members of society considered the most vulnerable: low-income individuals, the impoverished, the elderly, young people, and, depending on case-specific circumstances, women and small businesses. Artificial intelligence has a crucial impact on many areas, including but not limited to risk detection, measurement, and management. Thus, artificial intelligence not only addresses problems directly linked to information asymmetry, but it also improves fraud detection, cybersecurity, and customer service through chatbots. More precisely, the problem of information asymmetry is addressed by

using AI to collect information accessible on multiple online purchasing platforms and social networks, resulting in a large quantity of individual data. This method closes the information gap between financial institutions and individuals, increasing FI. In terms of risk management, artificial intelligence is implemented to automate detection and measurement by applying algorithms, thereby facilitating access to banking services and more complex financial instruments (Mhlanga 2020).

4.4.3. Financial Resilience and Stability

An additional domain of inquiry in the literature pertains to the investigation of the impact of FinTech on financial resilience and economic stability. Financial technologies are considered a potential avenue for mitigating the pressing challenge of effectively managing financial emergencies, which can lead to severe implications, including pushing families towards a state of destitution. (Demirgüç-Kunt, Klapper et al. 2020; N'dri and Kakinaka 2020; Banna and Alam 2021; Suri, Bharadwaj et al. 2021).

According to Demirgüç-Kunt, Klapper et al. (2020), FinTech has the potential to equip individuals and households with the necessary tools and methods to address unanticipated economic issues effectively. Mobile phones and the internet can address obstacles faced by unbanked adults in accessing financial services. Rapid and remote access to financial services is crucial during periods of economic strain, such as a pandemic or natural disaster.

Expanding upon these observations, Banna and Alam (2021) emphasise the wider ramifications of advancing digital banking and inclusion, particularly in times of adversity such as the COVID-19 pandemic. The authors assert that the provision of easily available DFS has a significant role in bolstering the banking system's stability, thereby leading to an overall

improvement in financial stability. In addition, the inclusion of DFS contributes to a decrease in default risk faced by banks and facilitates more financial mobility. This, in turn, helps to alleviate liquidity crises and minimise the occurrence of non-performing loans. These results, when taken together, promote economic and financial resilience.

Further elaborating on this point, N'dri and Kakinaka (2020) discuss the impact of mobile money services on the ability of households to save for unexpected health emergencies and maintain their consumption levels during economic instability. Integrating various financial tools and services within mobile money platforms equips individuals with the capacity to budget, save, and invest their funds wisely, owing to features such as balance inquiries, transaction histories, and real-time alerts. Such attributes are instrumental in helping individuals monitor their expenditures and savings. When analysing the consequences of financial resilience, it is imperative to consider the involvement of lending platforms and cash transfer mechanisms. Mobile money services offer reliable options for individuals to protect their financial assets and obtain credit as needed, thus serving as a platform for lenders to offer loans. This becomes especially significant in regions where conventional banking services are either inaccessible or prone to unreliability. This facet holds profound implications, particularly for individuals who may not meet the stringent eligibility criteria of conventional lenders.

As seen, DFS contribute to an improved capacity to manage economic disruptions, strengthening the crucial role of FinTech in advancing financial resilience.

4.4.4. Challenges, Risks and Scepticisms

Another aspect of utmost importance is the analysis of financial technologies' impact on the stability of the overall financial system. While some studies imply that FinTech innovations might

improve finance, others emphasise the possible hazards and concerns connected with the fast rise of DFS, such as cybersecurity threats, fraud, and systemic risks.

Mixed results are illustrated by the research conducted by Wang and He (2020). They demonstrate that the full expansion of DFI offers rural farmers a means of risk prevention. What digital finance contributes to mitigate is the inherent susceptibility to poverty. However, underlying structural factors prevent digital finance from significantly magnifying its overall positive impact on poverty alleviation. Policymakers must take immediate action in response to these structural problems. It is necessary to prioritise their efforts towards implementing targeted interventions centred on strengthening agricultural productivity.

While FinTech has opened paths for expanding FI, its role is not unchallenged. Issues that must be addressed are often related to fraud, volatility, usability, and regulatory uncertainty. These challenges not only hinder the widespread adoption of FinTech but also have broader implications for its effective functioning. FinTech often relies on volatile cryptocurrencies as foundational elements (Chen and Bellavitis 2020), further complicating achieving stability and fostering trust among users, whose service stability is threatened by security branches and systematic risks (Ozili 2018). As such, there is growing scepticism regarding the prevailing narrative that portrays FinTech as a universal remedy for overall development. Despite the vast potential held by FinTech, the reality is far more complex. Research by Bateman, Duvendack et al. (2019) underscores that FinTech often serves to concentrate wealth among a limited global digital financial elite rather than empowering the impoverished. The fee-based nature of certain FinTech platforms, as highlighted by Ozili (2018), can inadvertently favour higher-income individuals, potentially exacerbating existing inequalities. Ji, Wang et al. (2021) highlight the importance of effective supervision to curb the rampant growth of digital inclusive finance and ensure its healthy

development. They also stress the need for a more comprehensive understanding of DFI, encompassing various services and business models. Aziz and Naima (2021) emphasize that true DFI in rural areas necessitates access to digital devices and supportive social environments, thus acknowledging the fundamental infrastructural and societal prerequisites. The interplay of technology and the financial sector holds the potential to advance DFI and bridge the financial infrastructure gap (Ozili 2018). However, it is crucial to manage the introduction of FinTech carefully to prevent forced adoption, which may inadvertently lead to voluntary financial exclusion for unprepared populations. These sceptical viewpoints collectively underline the multifaceted challenges and complexities of pursuing true FI through FinTech.

Nevertheless, it is important to state that although the evidence is somewhat mixed, even studies that do not find positive results often point to possibilities for achieving better outcomes through careful attention to local needs (Demirgüç-Kunt, Klapper et al. 2020). This assertion reinforces the principle that effectively addressing the challenges and complexities associated with FI through FinTech requires a tailored approach that considers the specific requirements of local populations and their unique circumstances.

4.5. T2: Financial Access

The second thematic domain, namely *Financial Access*, specifically addresses the supply side of FI. This thematic area emerges organically throughout the analysis from 37 studies where discernible patterns and interconnected themes – notably *Infrastructure*, *Interoperability*, and *FinTech in Service Provision* – collectively orbit the fundamental concept inherent in this broader domain. Therefore, the forthcoming discourse centres on the aspects pertaining to the inclusive provision of DFS discerned from the analysis of the literature.

4.5.1. Infrastructure

The importance of infrastructure in facilitating FI is widely recognised by scholars, who emphasise its role in enhancing the accessibility of financial services from several perspectives. In academic discussions, a prevailing consensus emerges, underpinned by the resounding importance of infrastructure in extending the frontiers of financial services, especially in regions that have historically faced difficulties in terms of accessibility.

The scientific literature extensively demonstrates the positive impact of FinTech on enhancing financial accessibility. As suggested by Allen, Carletti et al. (2014), incorporating innovative and customised approaches, such as mobile and agent banking, plays a pivotal role in broadening access to credit, savings products, and a wide array of financial services. This, in turn, contributes to the advancement of FI. Africa serves as a remarkable illustration of this phenomenon. In particular, the Kenyan case exemplifies how FinTech companies leveraged the country's significant mobile phone penetration rate to create a digital financial service that seamlessly aligns with the existing context. Through strategically adapting their services to the existing digital infrastructure, they effectively introduced mobile money services. According to data from the 2011 Global Findex Dataset, these services are utilized by 67% of the adult population. This solution effectively addressed the challenge of limited financial institutions in non-urban areas, granting people access to financial services. Moreover, these companies enlist small retailers as agents to address infrastructural challenges and reduce reliance on cash. These agents are responsible for collecting cash, facilitating withdrawals, and processing loan payments, enhancing the overall service quality. The agent-banking model has greatly enhanced FA in underserved areas of Kenya (Allen, Carletti et al. 2014). Barik and Sharma (2019) further reinforce this perspective, emphasising that providing robust digital infrastructure in remote areas, establishing additional

FL centres, and extending credit to marginalised individuals are essential steps to realise FI's core objectives fully.

Arner, Buckley et al. (2020) complement this perspective by focusing on the essential task of building the infrastructure needed to harness the full potential of FinTech in support of the *Sustainable Development Goals*. They suggest that a progressive approach to developing this foundational infrastructure is critical for successful digital financial transformation. Their research highlights four primary pillars to consider in this strategy. The first pillar is dedicated to establishing a digital identity, streamlining account opening, and implementing *Electronic Know-Your-Customer* systems, which are digital procedures designed to verify customer identities and assess potential risks. This first pillar closely aligns with the second, which focuses on developing open and interoperable electronic payment systems. The third pillar involves leveraging the infrastructure established by the first and second pillars to support the electronic delivery of government services and payments. Lastly, the fourth pillar centres on the design of digital financial markets and systems, aiming to facilitate wider access to finance and investment opportunities.

In accordance with the first pillar, Arner, Buckley et al. (2019) uncover significant insights by delving into the requisites of identification within the financial sector and the ever-evolving nature of identity. They posit that technology presents an opportunity to address this challenge by constructing digital identity infrastructure and its associated utilities. Establishing such utilities entails grappling with pivotal design considerations, including registration methods, data availability, and recognising identities across different jurisdictions. However, it is crucial to strike a delicate balance. Balancing operational efficiency with cybersecurity is crucial to ensure that the pursuit of FI and market integrity does not jeopardize financial stability. This aligns with the

broader theme of using technology to foster FI while safeguarding financial system security and stability.

In addition to Arner, Buckley et al.'s (2019) perspective on digital infrastructure and its significance for FI, Friedline, Naraharisetti et al. (2020) underscore the crucial role of high-speed internet access, particularly in underserved rural communities. They highlight that the average rate of high-speed internet access in these areas stands at 56%. Limited access to online and mobile banking is often due to the prerequisite of high-speed internet and smartphones, which can be a significant hindrance. Improved cell phone service in regions with reliable connectivity can enhance mobile banking access, while communities with higher percentages of high-speed internet access tend to exhibit greater utilisation of online financial services. This indicates that in the face of diminishing traditional bank branches, communities with enhanced internet infrastructure are better positioned to leverage fintech solutions, bridging gaps in financial services and ensuring continued access to financial resources.

Lastly, Rodima-Taylor and Grimes (2019) provide an infrastructure-focused perspective on money transfers, emphasising the intricate networks involved in these processes. They highlight how modern remittance systems are complex networks comprising various components, relying on centralised systems and local innovations to reach people, even in remote areas. These local networks and innovations are pivotal in fostering economic opportunities thanks to competition among major platforms, particularly in impoverished communities.

4.5.2. Interoperability

Building on the foregoing, it is indisputable that infrastructure facilitates FI by promoting innovation and adaptability and enhancing access to financial services. Furthermore, in the context

of interoperability, a properly organised and interconnected infrastructure is fundamental to enable smooth cooperation and information sharing across the many entities within the financial ecosystem.

Mishra and Singh Bisht (2013) advocate for a collaborative model between banks and telecom companies that leverages established banking infrastructure. This collaboration not only highlights the effective use of current infrastructure but also introduces the important idea of interoperability. Telecom companies can diversify their service offerings by partnering with banks and leveraging their financial services, regulatory compliance, and security expertise. The inclusion of a bank in this model not only adds a level of trust and security but also acknowledges the fact that urban areas typically have well-established bank branch networks. By effectively utilising this infrastructure, the partnership can conveniently expand financial services to the urban poor, thereby reducing operational costs and improving service accessibility. Moreover, the collaborative model effectively reduces barriers to entry by simplifying documentation requirements, thereby enhancing accessibility to these services for individuals. Implementing a one-time fee structure simplifies pricing and reduces administrative overhead, benefiting both service providers and users. The preference for a mobile banking model led by both banks and telecom companies, specifically designed to meet the needs of the urban poor, highlights the strategy of leveraging the strengths of both sectors. The objective of this approach is to develop a financial service that is convenient, easily accessible, and highly secure. This service will be specifically designed to meet the needs of the target audience and encourage FI. However, it is important to keep in mind that these findings are specific to the context and may not be applicable universally. This is because the urban poor have unique characteristics, and the study has limitations in terms of its scope.

Furthermore, Lu, Wang et al. (2022) offer significant evidence of the pivotal role that interoperability plays in shaping the financial landscape, particularly in addressing Small and Medium Enterprises (SMEs) financing constraints. Their research highlights the significance of local bank branches in mitigating these constraints, emphasising the role of physical infrastructure. However, a striking aspect of their findings lies in the observed substitution effect between local bank branches and DFI. This dynamic underlines the evolving nature of financial services, where digital infrastructure competes with traditional bank branches in serving SMEs, accentuating the importance of interoperability. Large nationwide banks effectively competing with local banks through digital technologies underscores the transformative potential of interoperability. It highlights how a well-connected financial ecosystem, integrating traditional banks with digital platforms, efficiently offers diverse financial services to SMEs. This reshapes the traditional SME-bank relationship, emphasising the harmonious interplay of various financial players.

In support of the importance of a collaborative environment, Ammar and Ahmed (2016) remark that many microfinance customers require essential financial services but often face challenges related to innovation and accessibility. They stress that collaboration among various stakeholders, aided by government initiatives, customer education, and awareness efforts, is essential for driving the acceptance and widespread adoption of mobile banking. Interoperability is crucial in facilitating such collaboration and extending access to vital financial services. Additionally, partnerships with external organisations can significantly enhance the reach and value provided to customers. Leong, Tan et al. (2017) provide an illustrative example, showcasing a youth microloan start-up in China that effectively established partnerships with universities, part-time job platforms, and other entities. This strategic collaboration enabled the start-up to expand its customer base and diversify its services.

Lastly, FinTech enterprises exhibit high heterogeneity and customisable business models. The primary difference lies in how they interact with traditional financial institutions. Certain FinTech companies closely collaborate with these institutions, functioning as providers of DFS in conjunction with them. Conversely, others operate independently, directly competing with these financial institutions. The degree of cooperation between FinTechs and traditional financial institutions depends on several important variables, with market demand and the competitive landscape taking precedence (Moro-Visconti, Rambaud et al. 2020). A study carried out in India by Ketkar, Shankar et al. (2012) validate this claim, highlighting the importance of specific factors that are most likely to impact how well m-banking is implemented significantly. The study identified *lack of need for banking*, *quality of telecom service reach and reliability*, and *interoperability among banks and Telcos* as direct influencers of mobile banking success, underscoring the crucial role of collaboration among diverse financial service providers in meeting the financial needs of the Indian population.

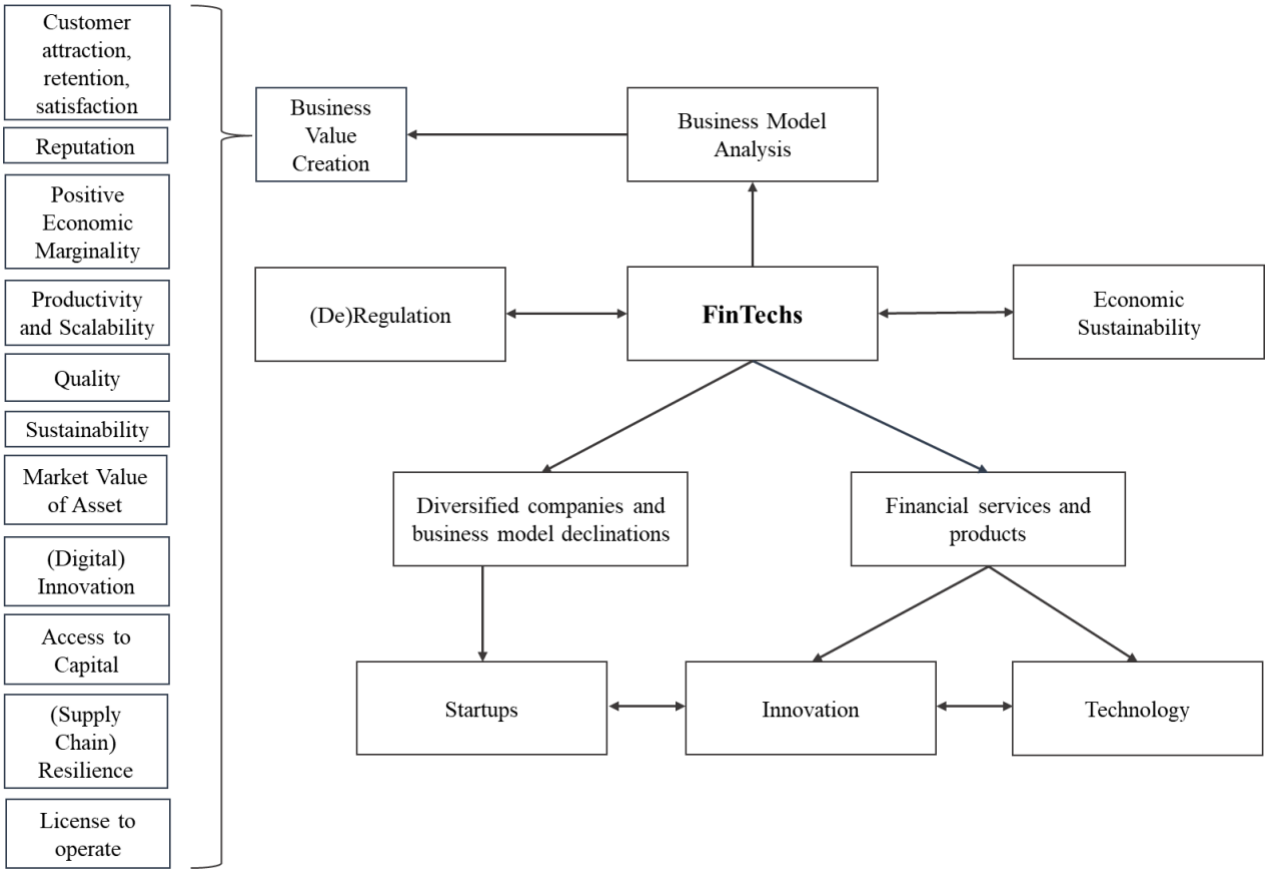
4.5.3. Technology in Service Provision

The differentiation between collaborative and independent FinTechs strongly influences the structure of their business models. Yet, despite the sector's diversity, certain shared elements feature in these models. As per Moro-Visconti, Rambaud et. al:

> "*The business model of FinTechs is intangible-driven, combining e-finance, internet technologies, social networking, artificial intelligence, blockchains, and big data analytics, and is more scalable than that of traditional banks. These features impact growth opportunities and trendy patterns consistent with Sustainable Development Goals*" (Moro-Visconti, Rambaud et. al 2020, p. 2).

Figure 10: Dimensions and Analysis of the FinTech Business Model.

(Own elaboration from Moro-Visconti, Rambaud et al. 2020)



Embracing an intangible-driven approach entails leveraging innovative technologies to craft distinctive business models tailored to customer needs and opening up new revenue streams. Such technologies improve scalability and flexibility, enabling adaptation to market conditions and the specific needs of consumers. Through the strategic adoption of digital technology, FinTech organisations not only distinguish themselves from their competitors but also carve out a distinct market niche. This peculiarity empowers FinTech companies to offer financial services to individuals who were previously excluded, in part or in full, from the traditional financial system (Moro-Visconti, Rambaud et al. 2020; Leong, Tan et al. 2017).

In support of this approach, Leong, Tan et al. (2017) illustrate using non-traditional data for credit assessment. Incorporating diverse data points (e.g., information derived from part-time job platforms) enables more inclusive access to essential financial services, particularly benefiting individuals, such as young people, previously marginalized by conventional banking practices.

Moreover, the research findings of Bernards and Campbell-Verduyn (2019) demonstrate how artificial intelligence combines financial information with tech capabilities, accelerating the digital transformation of finance and accounting, mitigating risks but also easing the accessibility and appropriateness of financial services, making them more accessible for underserved populations. Bernards (2019) further discusses the use of innovative data, such as psychometric credit scores and alternative forms of data, to expand lending to individuals in the global south who lack traditional credit histories and documentation. These innovative approaches are seen as potential means to increase FI and provide access to formal financial services for those who have been excluded.

Furthermore, Yu, Zhao et al. (2021) note the significant impact of innovative technologies, such as the Internet of Things, on supply chain finance. These technologies offer a powerful tool to reduce losses and market risks, creating a safer financial environment. This not only promotes investment and transaction protection but also helps to serve the goal of economic development more effectively through the accessibility of more reliable and secure financial services. Thus, the author's findings exemplify how technological advancements can assist in delivering financial services that offer enhanced stability and protection for all involved.

Additionally, the insights of Soetan, Mogaji et al. (2021) underscore the importance of technology and customer relationships within the context of FinTech business models, which stand

out for their scalability and flexibility. User-friendly and innovative technological solutions, coupled with an enhancement of customer services, constitute essential aspects of the FinTech model, thereby improving the accessibility and relevance of financial services. Lastly, the findings from Rolffs, Ockwell et al. (2015) highlight how the success of implementing a new technology or financial approach is not solely dependent on how advanced or efficient the technology is or how financially viable the system is. Sociocultural elements encompass the social and cultural practices of a community or region and play a crucial role in determining whether the intervention will be successful. This is highly relevant to FinTech's inclusive business model, as they adapt to and incorporate sociocultural practices in their service offerings. When financial models align with existing cultural norms and habits, it contributes to the success and long-term sustainability of these approaches, which is a crucial aspect of the FinTech business model's effectiveness.

4.6. T3: Regulatory and Legal Environment

During the analysis of the literature, the regulatory and legal context in which FinTech companies operate emerges as a substantially important element. Although the publications contributing to the composition of this thematic area (n=15) are numerically fewer compared to other domains, their significance is not diminished. It is essential to note that, given the relatively recent emergence of the FinTech landscape, regulatory aspects remain nascent in many countries. This inevitably reflects on the number of studies addressing this aspect of the subject matter. The themes that will be addressed in this section are the Regulatory Oversight, the Bank-led approach and the Market-led approach.

4.6.1. Regulatory oversight

The advantages of FinTech have been mainly discussed concerning their potential for promoting FI, diversifying the ways financial resources are raised, and creating competition for established players. Given the financial nature of FinTech operators, there is a compelling case for appropriate regulation. Risks and opportunities to the entire system need to be considered. FinTech operates within a rapidly evolving financial environment marked by its inherent volatility (Gruin and Knaack 2020). Notably, cryptocurrencies and stablecoins have been instrumental in reshaping the global financial system, signifying their potential for significant impact (Allen, Gu et al. 2022). However, the progress in these domains requires diligent regulatory oversight. Such regulation is paramount to secure the sustained growth and stability of these digital financial technologies.

The analysis conducted so far of the business models with which FinTech companies are entering the market to compete with incumbents contributes to reflecting on the ongoing debate at a national and supranational level on *how* to regulate FinTech. The legislative challenges in this area are complex and onerous. In particular, conflicting interests were emphasised. On the one hand, the objective of facilitating the development of FinTech is to increase competition between financial operators and, in this way, the dissemination and efficiency of services to clients. On the other, the importance of client protection and equal regulatory treatment with respect to intermediaries and supervised financial markets in order to protect savings and guide a correct allocation of financial resources for the benefit of the growth of the economic system and the stability of the financial system (Davis, Maddock et al. 2017; Langley and Leyshon 2021; Kandpal and Mehrotra 2019).

While acknowledging that technology is a dynamic process shaped by and shaping social practices and structures (Kemal 2019), it is essential to recognise the complexities in the international arena. In particular, there is a lack of consensus on the objectives, modalities, and timing of regulatory design in the field of FinTech. This divergence in regulatory perspectives underscores the importance of understanding the social context in which technology is used and how it influences and is influenced by social structures and practices. To bridge this gap, the following reflections aim to shed light on the diverse regulatory approaches adopted by numerous countries as well as suggested strategies. These approaches have been tailored to address the specific dynamics of emerging markets while sharing the common of striking a balance among the various interests involved in the development of FinTech.

4.6.2. Bank-led approach

Under the Bank-led approach, DFS are subject to the pre-existing oversight of the country's financial regulators. This model, prominently exemplified by Mexico, mandates that mobile service providers establish partnerships with banks. These banking partners, in turn, furnish the essential financial infrastructure and regulatory supervision for the mobile payment service. Consequently, mobile payment services in Mexico are obligated to adhere to the same regulatory standards and obligations that banks are subject to when handling deposits and deposit-related operations. (Suárez 2016)

Similarly, Tsai and Peng (2017) examine the context of FinTech regulatory frameworks proposing an *adaptive regulatory regime* tailored to innovative FinTech-enabled financial services. Their perspective advocates for the endorsement of a principles-based approach enabled through the usage of regulatory sandboxes in supporting this adaptive approach, which, as

controlled environments, provide a conducive space for FinTech firms to experiment with and enhance their innovative products and services while operating within reduced regulatory constraints. This strategic concept plays a pivotal role in catalysing a shift in the institutional mindset towards embracing a principles-based regulatory framework whilst simultaneously containing potential systemic risks and safeguarding consumer interests.

Lastly, David-West, Ihenachor et al. (2020) highlighted the stringent regulatory measures the Central Bank of Nigeria implemented to promote the expansion of mobile money services to facilitate FI and increase digital transaction volumes. However, the implementation of strict regulations posed significant difficulties, as the service providers' business models in the market faced challenges in conforming to these regulatory limitations, resulting in less desirable consequences.

4.6.3. Market-led approach

In contrast to the Nigerian case, Sub-Saharan Africa has witnessed successful *Market-led approaches* in the past decade. These approaches involve removing restrictive regulations and encouraging entrepreneurial innovation to reach the unbanked population (Burns 2018). For reference, in the case of Kenya, the Market-led approach refers specifically to the *Mobile Network Operator-led model*. According to it, mobile payment services are run by telecommunications firms, such as Safaricom, that operate independently from financial institutions. However, a significant concern arises in the form of regulatory capture. There is a risk that mobile network operators might exert undue influence on the regulatory process, thereby shaping the regulatory environment in their favour. This, in turn, could lead to the adoption of regulatory models that

prioritize the interests of the involved companies over those of consumers or the unbanked and financially excluded population (Suárez, 2016).

Along the same line, Rogers and Clarke (2016) explore the regulatory landscape of *peer-to-peer lending* in the United Kingdom, which displays attributes of regulatory capture. Regulatory agencies, initially established to uphold the public interest, often end up advocating for the interests of the industries or entities they are mandated to oversee. This suggests that the regulatory body overseeing *peer-to-peer lending* may be susceptible to influence from the industry it regulates, potentially leading to regulatory models favouring the industry's interests. This influence can stem from lobbying efforts and the proximity of regulators to the industry they are meant to regulate.

Overall, well-founded reflections suggest that, despite the risks, a regulatory architecture based on *activities*, rather than *entities*, would guarantee neutral rules for the technological solutions used by financial operators and equal protection for customers.

4.7. T4: Financial Usage

The thematic domain related to Financial Usage (FU) emerges from the analysis of studies (n=52) that focus on the adoption and diffusion of DFS , alongside considerations of FL and capability. Most papers (n=39) focus particularly on identifying influential factors shaping attitudes and intentions regarding the adoption and use of DFS . Therefore, this domain delves into the demand side of FI, encompassing critical elements concerning usage quality, quantity, and efficacy.

4.7.1. Adoption and Diffusion

The extensive scrutiny of digital FU has predominantly fallen within the purview of research dedicated to technology adoption models. Among the most prominent frameworks leveraged to dissect the factors shaping the adoption of DFS stand the *Technology Acceptance Model* (TAM) (e.g. Chauhan 2015; Tobbin 2012; Ofori and Appiah-Nimo 2019) and the *Unified Theory of Acceptance and Use of Technology* (UTAUT) (e.g. Senyo and Osabutey 2020; Gupta, Manrai et al. 2019).

The adoption of theoretical frameworks has enabled scholars to discern the key factors that significantly influence individuals' attitudes and intentions regarding the adoption and subsequent usage of DFS . Foremost among these factors is the propensity to adopt, which is closely tied to having a solid foundation in financial education and a strong grasp of FL . Notably, these two factors exhibit a symbiotic relationship, with each influencing and reinforcing the other (Kassa-Hanna, Lyons et al. 2022) Additionally, scholars widely acknowledged that the adoption of DFS is shaped by several key factors. These include perceived value and usefulness, performance expectancy, perceived risk, perceived trust, perceived ease of use, as well as hedonic motivation and social influence. In this context, it is important to note that perceived usefulness, a critical determinant of adoption, is significantly influenced by subjective norms, output quality, and personal innovativeness. (Deb and Agrawal 2017; Setiawan, Nugraha et al. 2021).

Social networks have been extensively examined not only in the context of digital finance adoption but also in terms of diffusion. These networks represent individuals' connections and relationships with others in their communities, including family members, friends, and acquaintances. These networks come in both formal forms, such as community associations and

religious groups, and informal forms, involving personal relationships. They serve as a valuable source of information regarding new technologies and services, playing a pivotal role in moderating the relationship between the usage of DFS and FI. The existence of social networks, comprising both strong and weak ties among users, has indeed been substantiated to not only encourage diffusion but also promote FI. For instance, they facilitate the screening of loan applications and the enforcement of contracts, reducing the risk of default and increasing access to credit, thus contributing to greater FI. (Okello Candiya Bongomin 2018; Larios-Hernàndez 2017).

4.7.2. Financial Literacy and Capability

In the contemporary landscape of economic decision-making, FL and capability have become indispensable facets, embodying variables such as knowledge, behaviour, and attitudes. Their significance is heightened by profound and enduring global transformations, not mere transients but structural shifts impacting both the overall economy and individual financial well-being. Consequently, individuals, irrespective of age, are compelled to acquire a distinct set of financial knowledge and skills compared to the past. (Meng 2023; Philippas and Avdoulas 2020; Hasan, Le et al. 2021; Nejad and Javid 2018; Krishna Kishore and Sequeira 2016).

The recent financial crises have underscored the cost that individuals bear due to unwise financial decisions, emphasising that the repercussions can extend to all individuals and, in extreme cases, jeopardise financial stability. This reflects a cultural fragility that can have adverse impacts on both individual well-being and the overall national framework (Zavolokina, Dolata et al. 2016). In the context of DFS , researchers have delved into the relationship between FL and individuals' financial well-being, particularly in the digital realm. Rana, Luthra et al. (2020)

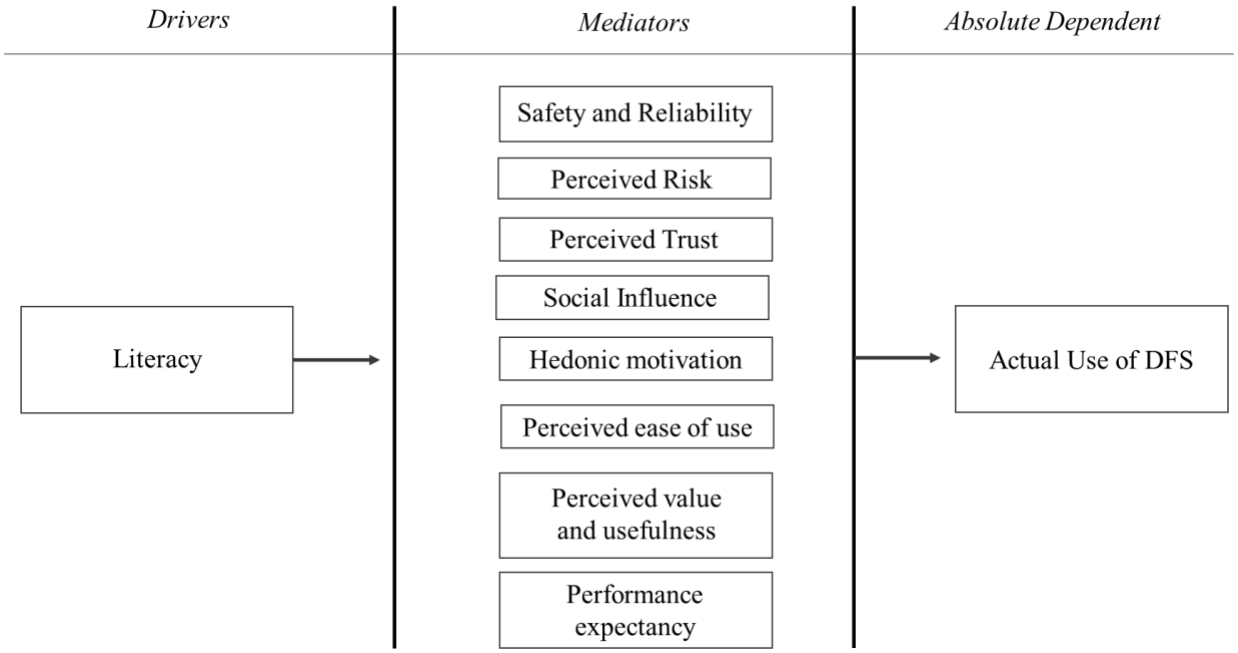
explored the connection between digital literacy and customer attitudes and behaviours regarding DFS , positing that digital literacy enhances consumer safety, reliability, and trust in digital financial service providers. Similar threads of research by Philippas and Avdoulas (2020), Hasan, Le et al. (2021), and Nejad and Javid (2018) reaffirmed the connection between FL and aspects such as resilience to financial shocks, influence over others' financial opinions, and the use of retail financial services.

Kass-Hanna, Lyons et al. (2022) and Kumar (2023) underscored the symbiotic relationship between financial and digital literacy, elucidating their crucial roles in fostering inclusiveness and financial resilience (Kass-Hanna, Lyons et al. 2022; Kumar 2023). The complex dynamics in the digital financial landscape, as examined by Andreou and Anyfantaki (2021) illuminated the role of digital proficiency in shaping trust and confidence in DFS. Graham and Nikolova (2013), in turn, expanded the narrative, shedding light on the differential effects of DFS on well-being, suggesting that digital and financial capability can moderate individuals' experiences. Finally, Meng (2023) broadened the scope by portraying the evolution of financial capability to encompass digital financial capability, acknowledging that individuals must be digitally literate and competent in using DFS to enhance their financial well-being.

In a final analysis, it is unsurprising that literacy and capability serve as drivers in the intricate process leading to the practical utilisation of financial services. This significance is particularly pronounced in the digital age, where the symbiosis between financial and digital literacy is central in fostering inclusiveness, resilience, and trust in DFS. The findings resulting from the current analysis underscore a nuanced interplay between factors associated with FL and capability and those influencing the adoption and diffusion of DFS. Both digital and FL form foundational pillars in this context. However, their relationship is elaborate, with various mediating factors

coming into play. These mediators encompass considerations of safety, reliability, perceived risk, perceived value and usefulness, performance expectancy, perceived trust, perceived ease of use, as well as hedonic motivation and the impact of social influence. Ultimately, the cumulative influence of these factors converges on the primary dependent variable —the actual usage of DFS. **(see Figure 10)**

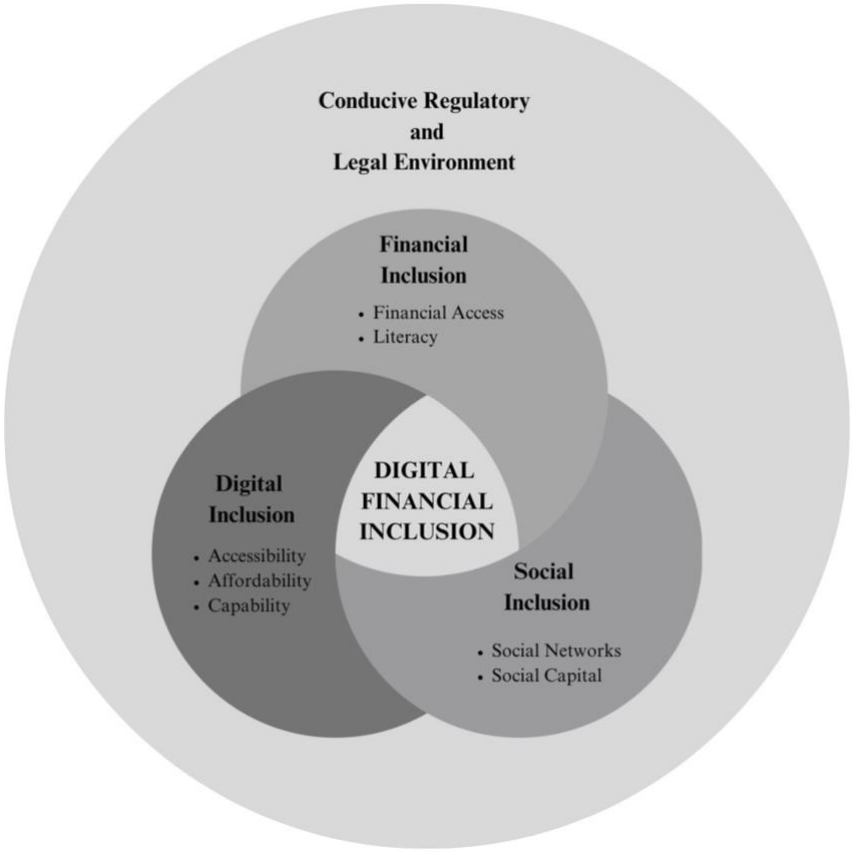
Figure 11: Determinants of FU (Own elaboration)



4.8. Framework for Digital Financial Inclusion

The systematic analysis of the existing scholarly literature, accompanied by its rigorous categorisation into thematic areas and specific themes related to FinTech and DFS , has yielded invaluable insights. These insights contributed to the development of a comprehensive framework, which aims to abstract and generalise the critical elements requisite for the attainment of FI powered by FinTech, thus promoting the domain of DFI.

Figure 12: Framework for DFI (Own elaboration)



The presented framework (**see Figure 11**) aims to illustrate an interconnection between Digital Inclusion, Social Inclusion, and FI, where DFI is displayed at the convergence of the three dimensions. The first dimension embodies FA and literacy; the second one incorporates accessibility, affordability, and digital proficiency; and the third one relates to the dynamics of social networks and social capital, i.e., the collected resources obtained through the networks. It is, therefore, possible to assert that this conceptual model is predicated on the premise that both digital inclusion and social inclusion are essential determinants for comprehending the socio-cultural and economic drivers of FI. Within this perspective, this study positions DFI at the heart of the framework. However, it is imperative to acknowledge that none of these facets can be

feasibly attained without an enabling regulatory and legal framework that underpins the entire structure.

Chapter 5: Conclusions, Limitations and Future Research

5.1. Conclusions

The rapid technological advancements witnessed in recent years had significant repercussions on production and distribution processes, leading to a fundamental reshaping of social and economic relationships. Consequently, there is a compelling need to reassess traditional business models across various sectors. In the financial domain, the assimilation of advanced digital technologies has given rise to FinTech enterprises, facilitating FS traditionally within regulated financial intermediaries (Mhlanga 2022).

The unfolded debate around this topic is extensive and not unequivocal since it pertains to an evolving phenomenon marked by blurry boundaries. This is compounded by its high degree of innovativeness and the rapid global evolution it is undergoing. Moreover, from a research perspective, the development of digitalisation and FinTech raises significant and partly unresolved questions about the impact that FinTech is generating in the realm of FI. Beyond its technological dimension, FinTech is more than just a set of tools; it fundamentally embodies a cultural phenomenon. Rooted in a user-centric philosophy of simplification, FinTech serves as a cultural shift that initiates a reassessment of conventional business models with the promise of optimising FS, thereby challenging traditional financial institutions. As a result, the discourse extends beyond the technological aspects of FinTech, recognising its broader influence on restructuring FS and promoting inclusivity.

Considering the aforementioned points and operating under the premise that FinTech substantially influences the achievement of financial inclusivity (Lele 2019), this study aimed to deepen the understanding of the emerging FinTech phenomenon. To this end, a primary objective

of this study was to clarify the assessment of the current state of FI supported by FinTech, as established by academic research. The analysis focused on evaluating academic literature, revealing significant strides made by the scholarly community in assessing the correlation between FinTech and FI. This exploration uncovered a rich tapestry of research covering diverse perspectives and areas of study with considerations for access, regulation, and user adoption. However, the dynamic nature of FinTech necessitates continued inquiry to stay abreast of emerging trends and challenges at the intersection of FinTech and FI.

The analysis revealed four primary thematic domains where research on the subject has been undertaken. The first research question finds its answer within these domains, as established by the thematic analysis, and a concise summary of this can be found in the Appendices **(see Appendix C)**.

Concerning the second research question, while there may not be unanimous recognition in academia that FinTech currently serves as a transformative model for FI, its potential is unequivocally acknowledged. The foundational concept of FinTech as a transformative model lies in its ability to seamlessly integrate innovative financial technology with the evolving requirements and accessibility challenges of a financial system. This integration is achieved by aligning technological advancements with emerging market demands, reshaping and transforming the landscape of the FI.

In recent years, the FS services sector has experienced notable transformations, marked by a surge in automation, specialisation, and decentralisation. Financial companies, in response to evolving needs, have adopted increasingly efficient and sophisticated methods to manage vast amounts of data related to consumers and businesses. This ongoing evolution suggests that the

financial industry is on the brink of radical change. However, the challenge lies in determining whether this change will be disruptive, revolutionary, or evolutionary.

The lack of unanimous recognition of FinTech as a transformative model in academia can be attributed to the complexity of this ongoing transformation. While the sector is experiencing significant shifts, the diverse nature of these changes makes it challenging to categorize them definitively. Yet, there is widespread acknowledgement of FinTech's potential to be transformative. This stems from the sector's ability to harness innovation, not only in reducing transaction costs and enhancing efficiency in FS but also in its capacity to challenge the fundamentals of financial intermediation, risk management, and regulation. The uncertainty surrounding the definitive categorisation may arise from the ongoing exploration of FinTech's potential and its varied impacts across different aspects of the financial landscape.

Concerning the third research question, which addresses the components necessary to construct a robust model of DFI, the systematic literature analysis conducted throughout the study has led to their identification. The preceding chapter proposed a theoretical framework serving as an illustrative model encapsulating the interconnection between the dimensions of FI, Digital Inclusion, and Social Inclusion. It recognises that an enabling Regulatory and Legal Environment is essential for successful DFI efforts.

Hence, it is possible to deduce from such a framework the components needed to build it. The first component of FI is, in turn, composed of FA and FL. Academic literature emphasises the foundational importance of FA and FL. Effective participation in DFS requires a solid understanding of FL. FL is identified as a key determinant influencing attitudes and intentions regarding adopting and using DFS (Kass-Hanna, Lyons et al. 2022; Deb, Agrawal 2017).

The second dimension of Digital Inclusion encompasses Accessibility, Affordability, and Digital Proficiency: individuals must access, afford and possess the necessary digital skills for proficient usage of DFS. Technology adoption models such as TAM and UTAUT are employed to understand the factors shaping the adoption and usage of DFS, emphasising the significance of factors like perceived value, perceived risk, and social influence (Chauhan 2015, Senyo, Osabutey 2020, Gupta, Manrai et al. 2019, Farah, Hasni et al. 2018).

Thirdly, the dimension of Social Inclusion unfolds in social networks and social capital. Social networks, both formal and informal, play a pivotal role in encouraging the diffusion of DFS. Connections within communities, family, and friends serve as valuable sources of information regarding new technologies and services. Social inclusion involves not only individual connections but also the collective social capital obtained through these networks, contributing to greater FI (Okello Candiya Bongomin 2018, Larios-Hernàndez 2017).

Lastly, an enabling Regulatory and Legal Environment is a fundamental prerequisite for DFI. The regulatory context within which FinTech companies operate is crucial. Conflicting interests, such as fostering FinTech development and ensuring client protection, must be balanced. The lack of consensus on regulatory objectives and approaches underscores the complexity of the regulatory landscape in FinTech, emphasising the importance of understanding the social context in which technology is used (Davis, Maddock et al. 2017, Langley, Leyshon 2021).

The negative reputation surrounding financial innovation must be addressed. Too often, financial innovation has been associated with the flaws that led to the Global Financial Crisis 2008. From this perspective, financial innovations are often seen as mechanisms to deceive investors, circumvent regulatory intent, and boost bonuses for financial institution executives; consequently,

they are only sometimes perceived as mechanisms to improve the quality of FS provided to the rest of the economy. However, such a perspective is quite limited.

Focusing on the evolution of financial economic systems, the literature extensively explores numerous instances underscoring the core role of financial innovations in promoting FI and supporting economic growth. This provides further and compelling motivation to support the FinTech model and its promise to democratise FS. Regulators seeking to encourage economic prosperity should, therefore, seriously consider these recommendations, taking necessary precautions to ensure low levels of risk and avoid regulations that limit competition in the services sector, thereby inhibiting financial innovation and resulting in slow economic growth.

5.2. Limitations of the study

In systematically reviewing the literature using an inductive approach, it is important to highlight a significant limitation for discussion in the absence of a co-author. Employing a co-author would have offered additional perspectives, minimised potential biases, and enhanced the overall quality of the review. However, due to circumstances beyond our control, this collaborative aspect was not realised. It is essential to acknowledge that despite rigorous efforts to reduce bias through systematic selection and analysis processes, some degree of subjectivity might persist. Nevertheless, this limitation does not invalidate the merits of the inductive methodology employed, which allowed for the exploration of emergent themes and patterns in the literature.

Furthermore, the empirical studies incorporated into this research exhibit a contextual specificity. They are primarily centred on particular geographical or cultural contexts. This focus allows for a deep and nuanced understanding of the FinTech landscape within those specific settings, ensuring accuracy, precision, and relevance to the unique needs of the populations they

represent. However, the context-driven nature of these findings may limit their generalisability to broader populations with varying demographics and cultural backgrounds.

Finally, this review relied solely on the *Scopus* database for identifying potentially eligible studies, which could have resulted in the omission of relevant studies from other databases. Similarly, the adoption of language constraints and the exclusion of papers without full-text accessibility may have resulted in the omission of pertinent studies.

4.3. Future research

In pursuit of additional investigation, prospective research inquiries are outlined in the table below. These questions serve as a structure to expand and refine the understandings acquired during the course of this study.

Research Questions	Justification
How can data collection methodologies be enhanced to facilitate the progress of financial inclusion impact assessment, with a particular focus on FinTech?	Existing metrics primarily centre around the accessibility, utilisation, and calibre of financial products; however, the efficacy of data collection techniques remains ambiguous. By addressing this knowledge gap, the overall impact of traditional and digital financial services on vulnerable populations could be better comprehended.
What are the progress and existing gaps in the intersection of Development Finance Institutions (DFIs), Financial Inclusion (FI), and the achievement of Sustainable Development Goals (SDGs)?	It is critical to understand the advancements and deficiencies in DFI and FI with respect to the SDGs in order to assess the tangible effects of financial services. This analyses the extent to which the financial sector is in line with overarching development objectives and identifies areas that require enhancement.
What are the social performance indicators of FinTech, and how do they contribute to the overall well-being of consumers and society?	Although the effect of FinTech on well-being is hypothesised, it has not been exhaustively assessed. The investigation of social performance indicators would contribute to the closure of the current knowledge deficit by illuminating the wider ramifications of FinTech on both society and consumers.
What are the factors contributing to the limited disclosure of information by fintech companies regarding the impacts of their primary operations on communities and clients, and what strategies can be implemented to enhance transparency?	It is essential to have transparency in order to comprehend the actual effects of financial services. By examining the factors that contribute to the hesitancy to divulge information regarding the adverse effects of products, one could ascertain obstacles to transparency within the fintech industry and suggest potential remedies for enhancement.
What incentives exist to motivate businesses to disclose the development and results of their social responsibility endeavours, particularly those pertaining to financial inclusion objectives?	Several companies prioritise social responsibility initiatives without disclosing the results. Investigating potential mechanisms to motivate reporting would inspire businesses, including fintech companies, to furnish greater transparency and responsibility regarding their contributions to the betterment of society.

Building upon previous considerations, another aspect to contemplate for future research aligns with Weick's (1995) perspective, suggesting that the development of strong theory involves an iterative research process culminating in theory testing. As an integral component of such a

process, the current study delineated theoretical domains and systematically crafted a theoretical framework that comprehensively generalises and synthesises the principles derived from the analysis of scholarly research. As a crucial step towards advancing knowledge in this domain, this study proposes testing the framework developed herein as a promising avenue for future research, aiming to validate its efficacy and further contribute to the evolving discourse on FinTech and FI. Moreover, given the distinctive nature of FinTech service provision, characterised by borderless operations yet tailored to individual customers, it is imperative to recommend testing the proposed model in diverse contexts. The effects and outcomes of the framework may vary based on geographical locations and demographics. Therefore, future research should consider conducting tests in different regions and among varied demographic groups to capture a nuanced understanding of the framework's applicability and effectiveness across various scenarios.

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Appendices

APPENDIX A: Selected definitions of FI listed by year and author

The following table showcases a collection of definitions sourced from scholarly studies and notable organisations. The table illustrates the progression of the concept of Financial Inclusion over time, indicating a transition from a limited emphasis on mere accessibility and affordability to a broader comprehension encompassing utilisation, availability, and the impact of financial services on fostering development.

Year	Author(s)	Definition
2006	Leeladhar, R. (2006)	*Financial Inclusion may be defined as the process of ensuring access to financial services and timely and adequate credit where needed by vulnerable groups such as weaker sections and low-income groups at an affordable cost.*
2006	Claessens (2006)	*Financial inclusion implies 'the availability of a supply of reasonable quality financial services at reasonable costs.*
2006	Dev (2006)	*Financial inclusion can also be defined as the delivery of banking services at an affordable cost to the vast sections of disadvantaged and low-income groups.*
2006	United Nations (2006)	*Financial inclusion refers to 'access at a reasonable cost of all households and enterprises to the range of financial services for which they are bankable (...)'. It involves 'multiple providers of financial services, wherever feasible, so as to bring cost-effective and a wide variety of alternatives to customers which could include any number of combinations of sound private, non-profit and public providers.*
2007	Thorat, Y. S. (2007)	*Financial Inclusion is the process of providing affordable financial services such as access to payment services, access to remittance facilities, access savings and access to loans and insurance services by the formal financial system to excluded groups mentioned above.*
2008	Sarma, M. (2008)	*Financial Inclusion is the process that ensures the ease of access, availability and usage of the formal financial system for all members of an economy.*
2008	Demirgüç-Kunt, A., Honohan, P., & Beck, T. (2008)	*Financial inclusion is the absence of price and non-price barriers in the use of financial services.*
2009	CGAP (2009)	*Financial inclusion involves providing access to financial services for all.*
2010	Kendall, J., et al. (2010)	*Financial inclusion involves providing access to financial services for the poor.*
2010	Chakravarty & Pal (2010)	*Financial inclusion refers to the delivery of financial services of an economy to its members.*
2011	Sarma, M., & Pais, J. (2011)	*Financial Inclusion is the process that ensures the ease of access, availability, and usage of the formal financial system for all members of an economy.*
2011	CGAP (2011)	*Financial inclusion refers to a state in which all working-age adults, including those currently excluded by the financial system, have effective access to the following financial services provided by formal institutions: credit, savings (defined broadly to include current accounts), payments, and insurance.*
2012	Chakravarty & Pal (2012)	*Financial inclusion is the process of ensuring access to appropriate financial products and services needed by all members of the society in general and vulnerable groups in particular, at an affordable cost in a fair and transparent manner by mainstream institutional players.*

Year	Author(s)	Definition
2013	Demirgüç-Kunt, A., & Klapper, L. (2013)	*Financial inclusion is the use of formal financial services.*
2014	Amidžić et al. (2014)	*Financial inclusion can be defined as an economic state where individuals and firms are not denied access to basic financial services based on motivations other than efficiency criteria.*
2015	Arun, T., & Kamath, R. (2015)	*Financial inclusion can be described as the situation in which people who can use financial products and services have full access to quality financial services, provided at affordable prices, in a convenient manner and with dignity for all the clients.*
2015	Sahay et al. (2015)	*Financial inclusion refers to 'the access to and use of formal financial services.*
2016	Queralt, M., et al. (2016)	*Financial inclusion is concerned with effective access to finance. It seeks to ensure universal availability - not usage - of affordable and adequate basic financial services, namely, credit, savings, insurance and payment services.*
2016	Ambarkhane et al. (2016)	*Financial inclusion is the process of ensuring access to financial services and adequate credit where needed by vulnerable groups such as low-income groups at affordable cost.*
2016	Sethy Susanta (2016)	*Financial Inclusion is the measure of growth in the economy as well as human welfare. It is a key enabler of economic and social development.*
2017	Zhang, X., & Posso, A. (2017)	*Financial inclusion involves access to useful and affordable financial products and services that meet individual's needs for transactions and payments, savings, credit, and insurance.*
2017	Demirgüç-Kunt et al. (2017)	*Financial inclusion means that adults have access to and can effectively use a range of appropriate financial services. Such services must be provided responsibly and safely to the consumer and sustainably to the provider in a well-regulated environment.*
2017	Sankharaj Roy, H., Ramananda Singh, R., & Dev, M. (2017)	*Financial inclusion means the timely delivery of financial products and services at an affordable cost to the low-income sections of the people who are lying at the bottom of the pyramid.*
2018	Ozili, P. K. (2018)	*Financial inclusion is the provision of access to financial services to all members of the population particularly the poor and the other excluded members of the population.*
2018	United Nations (2018)	*Financial inclusion is universal access, at a reasonable cost, to a wide range of financial services, provided by a variety of sound and sustainable institutions.*
2018	World Bank (2018)	*Financial inclusion can be defined as the uptake and usage of a range of appropriate financial products and services by individuals and micro and small enterprises (MSEs), provided in a manner that is accessible and safe to the consumer and sustainable for the provider.*

APPENDIX B: Studies included in the Systematic Review listed by Thematic Area

The list of studies included in this review is presented below, establishing the groundwork for the analysis of academic literature in the context of this research. The following studies are showcased following the thematic classification extensively discussed in the above sections.

Thematic Area	Author(s)	Title	Year	Cited by	Link
T1	Li, Jie; Wu, Yu; Xiao, Jing Jian	The impact of digital finance on household consumption: Evidence from China	2020	183	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85073018637&doi=10.1016%2fj.econmod.2019.09.027&partnerID=40&md5=201e42c28799752c5548e6ccf4ddba32
T1	Munyegera, Ggombe Kasim; Matsumoto, Tomoya	Mobile Money, Remittances, and Household Welfare: Panel Evidence from Rural Uganda	2016	164	https://www.scopus.com/inward/record.uri?eid=2-s2.0-84964603283&doi=10.1016%2fj.worlddev.2015.11.006&partnerID=40&md5=46336266183838828aeadf05ed9df4a4
T1	Chen, Yan; Bellavitis, Cristiano	Blockchain disruption and decentralized finance: The rise of decentralized business models	2020	160	https://www.sciencedirect.com/science/article/abs/pii/S2352673419300824
T1	Mushtaq, Rizwan; Bruneau, Catherine	Microfinance, financial inclusion and ICT: Implications for poverty and inequality	2019	105	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85068973205&doi=10.1016%2fj.techsoc.2019.101154&partnerID=40&md5=aaea2cd6dedf1ea389a16e5cf6e30014
T1	Lashitew, Addisu A.; van Tulder, Rob; Liasse, Yann	Mobile phones for financial inclusion: What explains the diffusion of mobile money innovations?	2019	103	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85060554089&doi=10.1016%2fj.respol.2018.12.010&partnerID=40&md5=74bfc97edc7abf21a77b07e76a57297e
T1	Koomson, Isaac; Villano, Renato A.; Hadley, David	Effect of Financial Inclusion on Poverty and Vulnerability to Poverty: Evidence Using a Multidimensional Measure of Financial Inclusion	2020	94	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85077627517&doi=10.1007%2fs11205-019-02263-0&partnerID=40&md5=5a853dfa6cd04186b8331adf2c2b1359
T1	Demir, Ayse ; Pesqué-Cela, Vanesa; Altunbas, Yener; Murinde, Victor	Fintech, financial inclusion and income inequality: a quantile regression approach	2022	75	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85087048353&doi=10.1080%2f1351847X.2020.1772335&partnerID=40&md5=5eb699fa06c58c17d2bd651366249585
T1	Chen, Long	From Fintech to Finlife: the case of Fintech Development in China	2016	73	https://www.scopus.com/inward/record.uri?eid=2-s2.0-84988481793&doi=10.1080%2f17538963.2016.1215057&partnerID=40&md5=00f6ac030fd22e7db1e621d95d4e9369
T1	Mhlanga, David	Industry 4.0 in finance: the impact of artificial intelligence (ai) on digital financial inclusion	2020	69	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85089602698&doi=10.3390%2fijfs8030045&partnerID=40&md5=0ce3b4127fbcd2001f5b93d2f32188a6
T1	Schwittay, Anke F.	The financial inclusion assemblage: Subjects, technics, rationalities	2011	64	https://www.scopus.com/inward/record.uri?eid=2-s2.0-82555185007&doi=10.1177%2f0308275X11420117&partnerID=40&md5=8599ef0618a7cbd769cb49d9414e1b15
T1	Bateman, Milford; Duvendack, Maren; Loubere, Nicholas	Is fin-tech the new panacea for poverty alleviation and local development? Contesting Suri and Jack's M-Pesa findings published in Science	2019	59	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85066985334&doi=10.1080%2f03056244.2019.1614552&partnerID=40&md5=7e9b25a878bd5bac6a964f09e3417486
T1	Demirgüç-Kunt, Asli; Klapper, Leora; Singer, Dorothe; Ansar, Saniya; Hess, Jake	The Global Findex Database 2017: Measuring Financial Inclusion and Opportunities to Expand Access to and Use of Financial Services	2020	52	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85081890321&doi=10.1093%2fwber%2flhz013&partnerID=40&md5=f6ff4d04410140f925f898930f12cdb6

Thematic Area	Author(s)	Title	Year	Cited by	Link
T1	Ozili, Peterson K.	Financial inclusion research around the world: A review	2021	51	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85078471678&doi=10.1080%2f07360932.2020.1715238&partnerID=40&md5=100db170152920c7db049cf08ad64275
T1	Wang, Xue; He, Guangwen	Digital financial inclusion and farmers' vulnerability to poverty: Evidence from rural China	2020	45	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85081599326&doi=10.3390%2fsu12041668&partnerID=40&md5=330ed9d5d0285bc293ebd813ff3ef473
T1	Ji,Xuanming;Wang, Kun; Xu, He; Li, Muchen	Has digital financial inclusion narrowed the urban-rural income gap: The role of entrepreneurship in China	2021	42	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85111425577&doi=10.3390%2fsu13158292&partnerID=40&md5=553c100874958d1b3836269c78127c1f
T1	Ahmad, Ahmad Hassan; Green, Christopher; Jiang, Fei	MOBILE MONEY, FINANCIAL INCLUSION AND DEVELOPMENT: A REVIEW WITH REFERENCE TO AFRICAN EXPERIENCE	2020	35	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85085528282&doi=10.1111%2fjoes.12372&partnerID=40&md5=87b37f7664e9d7f6594d7554cf50f7ac
T1	Mago, Stephen; Chitokwindo, Sibert	The impact of mobile banking on financial inclusion in Zimbabwe: A case for Masvingo province	2014	35	https://www.scopus.com/inward/record.uri?eid=2-s2.0-84900528072&doi=10.5901%2fmjss.2014.v5n9p221&partnerID=40&md5=f844dc51e841c6942f21f3cdc1aac334
T1	Aziz, Abdul; Naima, Umma	Rethinking digital financial inclusion: Evidence from Bangladesh	2021	34	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85098741771&doi=10.1016%2fj.techsoc.2020.101509&partnerID=40&md5=3b37e92f85fba5fa4dbd777993d5b10b
T1	Hasan, Md. Morshadul; Yajuan, Lu; Khan, Shajib	Promoting China's Inclusive Finance Through Digital Financial Services	2022	32	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85078998042&doi=10.1177%2f0972150919895348&partnerID=40&md5=0829694fdb940da3b2a384261a512796
T1	Lai, Karen P.Y.; Samers, Michael	Towards an economic geography of FinTech	2021	32	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85087710851&doi=10.1177%2f0309132520938461&partnerID=40&md5=e36964a7141df82e57c656a55f8cb324
T1	N'dri, Lasme Mathieu; Kakinaka, Makoto	Financial inclusion, mobile money, and individual welfare: The case of Burkina Faso	2020	32	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85080860367&doi=10.1016%2fj.telpol.2020.101926&partnerID=40&md5=00f4d5353287094ace929e887acb372e
T1	Danisman, Gamze Ozturk; Tarazi, Amine	Financial inclusion and bank stability: evidence from Europe	2020	28	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85087499964&doi=10.1080%2f1351847X.2020.1782958&partnerID=40&md5=05d3ac4ad3f0557a1accd868e01f2a49
T1	Jiang, Xiuxiu; Wang, Xia; Ren, Jia; Xie, Zhimin	The nexus between digital finance and economic development: Evidence from China	2021	27	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85109633878&doi=10.3390%2fsu13137289&partnerID=40&md5=e4e4462f5efcc096cb972ec756aabefa
T1	Hua, Xiuping; Huang, Yiping	Understanding China's fintech sector: development, impacts and risks	2021	25	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85089904960&doi=10.1080%2f1351847X.2020.1811131&partnerID=40&md5=47bae5abe32a69ccb011da4622f45593
T1	Asongu, Simplice; Asongu, Ndemaze	The comparative exploration of mobile money services in inclusive development	2018	24	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85038854915&doi=10.1108%2fIJSE-08-2016-0221&partnerID=40&md5=95a9f65a6edeed3b2434757c732fc2a5

Thematic Area	Author(s)	Title	Year	Cited by	Link
T1	Freytag, Andreas; Fricke, Susanne	Sectoral linkages of financial services as channels of economic development—An input–output analysis of the Nigerian and Kenyan economies	2017	23	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85015637330&doi=10.1016%2fj.rdf.2017.01.004&partnerID=40&md5=8bf18de8cd0761d03639d61c99c70d0f
T1	Wójcik, Dariusz	Financial geography II: The impacts of FinTech – Financial sector and centres, regulation and stability, inclusion and governance	2021	23	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85091786394&doi=10.1177%2f0309132520959825&partnerID=40&md5=53650a6b2b78da6e8ec83c3f21eb75ce
T1	Gálvez-Sánchez, Francisco Jesús; Lara-Rubio, Juan; Verdú-Jóver, Antonio José; Meseguer-Sánchez, Víctor	Research advances on financial inclusion: A bibliometric analysis	2021	22	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85102997395&doi=10.3390%2fsu13063156&partnerID=40&md5=5063f4449e9667da0ab981f1a35a30c3
T1	Johnson, Susan	Competing visions of financial inclusion in Kenya: The rift revealed by mobile money transfer	2016	22	https://www.scopus.com/inward/record.uri?eid=2-s2.0-84962493432&doi=10.1080%2f02255189.2016.1140022&partnerID=40&md5=d3cd52aece567bec2c9a266e444f231f
T1	Appiah-Otoo, Isaac; Song, Na	The impact of fintech on poverty reduction: Evidence from China	2021	20	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85105968711&doi=10.3390%2fsu13095225&partnerID=40&md5=6dcf25ef1c3f0b56ff05296b1b4a81d3
T1	David-West, Olayinka; Iheanachor, Nkemdilim; Umukoro, Immanuel Ovemeso	Mobile money as a frugal innovation for the bottom of the pyramid–Cases of selected African countries	2019	20	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85073613757&doi=10.1080%2f23322373.2019.1652023&partnerID=40&md5=d7533c88e6b2f073bee284b0140862a8
T1	Zhang, Jiaping; Zhang, Huirong; Gong, Xiaomei	Mobile payment and rural household consumption: Evidence from China	2022	20	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85119160106&doi=10.1016%2fj.telpol.2021.102276&partnerID=40&md5=5bb11f93c0afb4c7729559829fd8772e
T1	Loubere, Nicholas	China's Internet Finance Boom and Tyrannies of Inclusion	2015	18	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85108536885&doi=10.4000%2fchinaperspectives.7454&partnerID=40&md5=6eb9dc77fd42a350fd49de079e5a4975
T1	Banna, Hasanul; Alam, Md Rabiul	Impact of digital financial inclusion on ASEAN banking stability: implications for the post-Covid-19 era	2021	17	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85106705274&doi=10.1108%2fSEF-09-2020-0388&partnerID=40&md5=53cbba8b8789d73042ff1acfd192d23f
T1	Fang, Jeff; Russell, Roslyn; Singh, Supriya	Exploring the impact of mobile money services on marketing interactions in relation to consumer well-being in subsistence marketplaces - lessons from rural Cambodia	2014	17	https://www.scopus.com/inward/record.uri?eid=2-s2.0-84897077291&doi=10.1080%2f0267257X.2014.884619&partnerID=40&md5=f37583c8d07b9e32a14b2adbf77ba0a7
T1	Ye, Yafen; Chen, Shenglan; Li, Chunna	Financial technology as a driver of poverty alleviation in China: Evidence from an innovative regression approach	2022	17	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85123869994&doi=10.1016%2fj.jik.2022.100164&partnerID=40&md5=db9fcd3489b39b760ef2a1dad1c0dfc8

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T1	Asongu, Simplice A.; Nwachukwu, Jacinta C.	Recent finance advances in information technology for inclusive development: a systematic review	2018	16	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85056745512&doi=10.1007%2fs11066-018-9127-0&partnerID=40&md5=8dba4b45579343a710b05e00ea9338a8
T1	Pakhnenko, Olena; Rubanov, Pavlo; Hacar, Dusan; Yatsenko, Valerii	Digitalization of financial services in European countries: Evaluation and comparative analysis	2021	15	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85110192675&doi=10.14254%2f2071-8330.2021%2f14-2%2f17&partnerID=40&md5=1d48f6873bef1b73bc9a491fa6379690
T1	Shen, Yan; Hueng, C. James; Hu, Wenxiu	Measurement and spillover effect of digital financial inclusion: a cross-country analysis	2021	15	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85097164900&doi=10.1080%2f13504851.2020.1853663&partnerID=40&md5=e1678e1df9a77120a88539933c78da8e
T1	Xiang, Xianhong ; Yang, Guoge; Sun, Hui	The Impact of the Digital Economy on Low-Carbon, Inclusive Growth: Promoting or Restraining	2022	15	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85132268956&doi=10.3390%2fsu14127187&partnerID=40&md5=5c35dd3677334e07a7be06e3e24f8582
T1	Frimpong Boamah, Emmanuel; Murshid, Nadine S.	“Techno-market fix”? Decoding wealth through mobile money in the global South	2019	14	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85072222883&doi=10.1016%2fj.geoforum.2019.08.012&partnerID=40&md5=6cad7b9361b8c90ec631d7d05fc4b811
T1	Joia, Luiz Antonio; Cordeiro, Joaquim Pedro Vasconcelos	Unlocking the potential of fintechs for financial inclusion: A delphi-based approach	2021	14	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85117587450&doi=10.3390%2fsu132111675&partnerID=40&md5=17c387dc7678507134ce32926bb6f8b8
T1	Lotto, Josephat	Examination of the status of financial inclusion and its determinants in Tanzania	2018	14	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85051560374&doi=10.3390%2fsu10082873&partnerID=40&md5=77e990c0e8017487afb7bb3a7f214799
T1	Ozili, Peterson K.	Contesting digital finance for the poor	2020	14	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85084853700&doi=10.1108%2fDPRG-12-2019-0104&partnerID=40&md5=5554eb1b54c7e3aee0b1fed70ad9bf59
T1	Peprah, James Atta ; Oteng, Clement; Sebu, Joshua	Mobile Money, Output and Welfare Among Smallholder Farmers in Ghana	2020	14	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85085979332&doi=10.1177%2f2158244020931114&partnerID=40&md5=ba6e39bf3da5e52471e27deb7fe587c9
T1	Siano, Alfonso; Raimi, Lukman; Palazzo, Maria ; Panait, Mirela Clementina	Mobile banking: An innovative solution for increasing financial inclusion in sub-saharan african countries: Evidence from nigeria	2020	14	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85097410832&doi=10.3390%2fsu122310130&partnerID=40&md5=d1d107f0f18307e4475ddd798ff7bd92
T1	Wang, Xiuhua; Fu, Yang	Digital financial inclusion and vulnerability to poverty: evidence from Chinese rural households	2022	14	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85119281785&doi=10.1108%2fCAER-08-2020-0189&partnerID=40&md5=84c54ef1a50e12c6d11a24a6b66b3e74
T1	Suri, Tavneet; Bharadwaj, Prashant; Jack, William	Fintech and household resilience to shocks: Evidence from digital loans in Kenya	2021	13	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85112015327&doi=10.1016%2fj.jdeveco.2021.102697&partnerID=40&md5=479d0e5a1087bc475874603fbe5d0f4a
T1	Thathsarani, Us; Wei, Jianguo; Samaraweera, Grsrc	Financial inclusion’s role in economic growth and human capital in south asia: An econometric approach	2021	13	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85104684363&doi=10.3390%2fsu13084303&partnerID=40&md5=d31cd811614915963d1e08e01d403ab2

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T2	Leong, Carmen; Tan, Barney; Xiao, Xiao; Tan, Felix Ter Chian; Sun, Yuan	Nurturing a FinTech ecosystem: The case of a youth microloan startup in China	2017	155	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85011832590&doi=10.1016%2fj.ijinfomgt.2016.11.006&partnerID=40&md5=898a8c1d59af7cc87127075602e1a2ba
T2	Allen, Franklin; Carletti, Elena; Cull, Robert; Qian, Jun Q.J.; Senbet, Lemma; Valenzuela, Patricio	The African financial development and financial inclusion gaps	2014	118	https://www.scopus.com/inward/record.uri?eid=2-s2.0-84942314751&doi=10.1093%2fjae%2feju015&partnerID=40&md5=1e551477a966f09264f3482c482eb9c4
T2	Rolffs, Paula; Ockwell, David; Byrne, Rob	Beyond technology and finance: pay-as-you-go sustainable energy access and theories of social change	2015	92	https://www.scopus.com/inward/record.uri?eid=2-s2.0-84950325673&doi=10.1177%2f0308518X15615368&partnerID=40&md5=790944f168a29675b90cda85f48d66a2f
T2	Mishra, Vishal; Singh Bisht, Shailendra	Mobile banking in a developing economy: A customer-centric model for policy formulation	2013	90	https://www.scopus.com/inward/record.uri?eid=2-s2.0-84877790343&doi=10.1016%2fj.telpol.2012.10.004&partnerID=40&md5=ad88eb8503835ade235b0f838bdea7d3
T2	Arner, Douglas W.; Buckley, Ross P.; Zetzsche, Dirk A.; Veidt, Robin	Sustainability, FinTech and Financial Inclusion	2020	86	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85082754210&doi=10.1007%2fs40804-020-00183-y&partnerID=40&md5=d91fafffe9133d4c4fd764db4c8f96b7
T2	De Koker, Louis; Jentzsch, Nicola	Financial Inclusion and Financial Integrity: Aligned Incentives?	2013	73	https://www.scopus.com/inward/record.uri?eid=2-s2.0-84875230278&doi=10.1016%2fj.worlddev.2012.11.002&partnerID=40&md5=24746292165bbb9fda62c769516fc231
T2	Mosteanu, Narcisa Roxana; Faccia, Alessio	Digital systems and new challenges of financial management – fintech, XBRL, blockchain and cryptocurrencies	2020	57	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85078435143&partnerID=40&md5=941f870ab4943477742f82cbf0c0d0fc
T2	Bernards, Nick; Campbell-Verduyn, Malcolm	Understanding technological change in global finance through infrastructures: Introduction to Review of International Political Economy Special Issue 'The Changing Technological Infrastructures of Global Finance'	2019	53	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85068227974&doi=10.1080%2f09692290.2019.1625420&partnerID=40&md5=a6c291fdb238c30b25b4426c1f534e14
T2	Yu, Hongxin; Zhao, Yuanjun; Liu, Zheng; Liu, Wei; Zhang, Shuai; Wang, Fatao; Shi, Lihua	Research on the financing income of supply chains based on an E-commerce platform	2021	50	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85105254376&doi=10.1016%2fj.techfore.2021.120820&partnerID=40&md5=9217431a9e5accedb881ac2cc5eb6b84
T2	Aron, Janine	Mobile money and the economy: A review of the evidence	2018	48	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85060393370&doi=10.1093%2fwbro%2flky001&partnerID=40&md5=d22ac852cd9a553fa1e130004f80a8b8
T2	Bernards, Nick	The poverty of fintech? Psychometrics, credit infrastructures, and the limits of financialization	2019	44	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85066820476&doi=10.1080%2f09692290.2019.1597753&partnerID=40&md5=912ce7421d490f223ccc57ce3996ef2f

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T2	Makina, Daniel	Introduction to the financial services in Africa special issue	2017	34	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85016592202&doi=10.1108%2fAJEMS-03-2017-149&partnerID=40&md5=7507995beac7639b21b53564db2d048a
T2	Lu, Zhiqiang; Wu, Junjie; Li, Hongyu; Nguyen, Duc Khuong	Local Bank, Digital Financial Inclusion and SME Financing Constraints: Empirical Evidence from China	2022	31	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85105667578&doi=10.1080%2f1540496X.2021.1923477&partnerID=40&md5=f7be64410a5dbf02981b99b7ac98bbc7
T2	Arner, Douglas W.; Zetzsche, Dirk A.; Buckley, Ross P.; Barberis, Janos N.	The Identity Challenge in Finance: From Analogue Identity to Digitized Identification to Digital KYC Utilities	2019	29	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85063024463&doi=10.1007%2fs40804-019-00135-1&partnerID=40&md5=00a73835cc749d5b8f601d0c05cf4df9
T2	Moro-Visconti, Roberto; Rambaud, Salvador Cruz; Pascual, Joaquín López	Sustainability in FinTechs: An explanation through business model scalability and market valuation	2020	29	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85098508709&doi=10.3390%2fsu122410316&partnerID=40&md5=cb21cc7a50dc168449ae62f80ae0eba5
T2	Bhagat, Ali; Roderick, Leanne	Banking on refugees: Racialized expropriation in the fintech era	2020	28	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85079442101&doi=10.1177%2f0308518X20904070&partnerID=40&md5=856d1aacb03280818c62df0875e9204b
T2	Hudaefi, Fahmi Ali	How does Islamic fintech promote the SDGs? Qualitative evidence from Indonesia	2020	28	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85081751758&doi=10.1108%2fQRFM-05-2019-0058&partnerID=40&md5=7d04c9859443e34c36635b27edf1d243
T2	Ketkar, S.P.; Shankar, Ravi; Banwet, D.K.	Structural modeling and mapping of m-banking influencers in india	2012	28	https://www.scopus.com/inward/record.uri?eid=2-s2.0-84865087207&partnerID=40&md5=6fb2148ec1c8f58ddc660ea685f7b2bb
T2	Hasan, Md. Morshadul; Yajuan, Lu; Mahmud, Appel	Regional Development of China's Inclusive Finance Through Financial Technology	2020	27	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85079194756&doi=10.1177%2f2158244019901252&partnerID=40&md5=dd198a59d090f167ff53ad4eeb8c7258
T2	Ammar, Anwar; Ahmed, Elsadig Musa	Factors influencing Sudanese microfinance intention to adopt mobile banking	2016	25	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85025099011&doi=10.1080%2f23311975.2016.1154257&partnerID=40&md5=477a6eb05c25e0bf3b9545bafae98cdc
T2	David-West, Olayinka; Iheanachor, Nkemdilim; Umukoro, Immanuel	Sustainable business models for the creation of mobile financial services in Nigeria; [Modelos de negocio sostenibles para la creación de servicios financieros móviles en Nigeria]	2020	25	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85073625293&doi=10.1016%2fj.jik.2019.03.001&partnerID=40&md5=b4c2ea632aac9326f4b400b8da6e2c44
T2	Friedline, Terri; Naraharisetti, Sruthi; Weaver, Addie	Digital Redlining: Poor Rural Communities' Access to Fintech and Implications for Financial Inclusion	2020	25	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85076378955&doi=10.1080%2f10875549.2019.1695162&partnerID=40&md5=75cb6968794eecb2c15b39299db0f21e

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T2	Reeves, Martha; Sabharwal, Neha	Microfinance and mobile banking for the bottom of the pyramid	2013	20	https://www.scopus.com/inward/record.uri?eid=2-s2.0-84878243257&doi=10.1108%2f17506201311325805&partnerID=40&md5=0686867f01c47513e9ada3f27f90b31d
T2	Zaffar, Muhammad Adeel; Kumar, Ram L.; Zhao, Kexin	Using agent-based modelling to investigate diffusion of mobile-based branchless banking services in a developing country	2019	20	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85056779040&doi=10.1016%2fj.dss.2018.10.015&partnerID=40&md5=2ab57dc0f7f6eb5c7805c7561a6ba8ac
T2	Banna, Hasanul; Kabir Hassan, M.; Rashid, Mamunur	Fintech-based financial inclusion and bank risk-taking: Evidence from OIC countries	2021	19	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85117378710&doi=10.1016%2fj.intfin.2021.101447&partnerID=40&md5=9b92bfed75526b7783e0038b6d61a781
T2	Iheanachor, Nkemdilim; David-West, Yinka; Umukoro, Immanuel Ovemeso	Business model innovation at the bottom of the pyramid – A case of mobile money agents	2021	19	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85099710438&doi=10.1016%2fj.jbusres.2021.01.029&partnerID=40&md5=8e540f670798a20bb25ffdc58ca9e5cd
T2	Coffie, Cephas Paa Kwasi; Hongjiang, Zhao; Mensah, Isaac Adjei; Kiconco, Rebecca; Simon, Abraham Emuron Otim	Determinants of FinTech payment services diffusion by SMEs in Sub-Saharan Africa: evidence from Ghana	2021	18	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85096539797&doi=10.1080%2f02681102.2020.1840324&partnerID=40&md5=fb8a3acfca2eb7046ced413af64d88f9
T2	Gonzalez, Laura	Blockchain, herding and trust in peer-to-peer lending	2020	17	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85065777048&doi=10.1108%2fMF-09-2018-0423&partnerID=40&md5=c6dcc650690f8e789ce06f73fe99ee9e
T2	Ajefu, Joseph Boniface; Ogebe, Joseph O.	Migrant remittances and financial inclusion among households in Nigeria	2019	16	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85061446795&doi=10.1080%2f13600818.2019.1575349&partnerID=40&md5=ca69feeda2515e04892ba681a837c1d3
T2	Barik, Rajesh; Sharma, Pritee	Analyzing the progress and prospects of financial inclusion in India	2019	16	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85065147055&doi=10.1002%2fpa.1948&partnerID=40&md5=46b49c5dd7b05f613651a5c011cbfd39
T2	Martin, Aaron	Mobile money platform surveillance	2019	16	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85066778372&doi=10.24908%2fss.v17i1%2f2.12924&partnerID=40&md5=62509f03f7d44d3d85a0692df9c0cbd6
T2	Asongu, Simplice A.; Biekpe, Nicholas; Cassimon, Danny	On the diffusion of mobile phone innovations for financial inclusion	2021	13	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85101538633&doi=10.1016%2fj.techsoc.2021.101542&partnerID=40&md5=9fe2f75cd91339c969449c313e19f360
T2	Banna, Hasanul; Mia, Md Aslam; Nourani, Mohammad; Yarovaya, Larisa	Fintech-based Financial Inclusion and Risk-taking of Microfinance Institutions (MFIs): Evidence from Sub-Saharan Africa	2022	13	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85107147974&doi=10.1016%2fj.frl.2021.102149&partnerID=40&md5=90a1e0ba11e7e89a7a112d9adc3484c6

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T2	Soetan, Taiwo O.; Mogaji, Emmanuel; Nguyen, Nguyen Phong	Financial services experience and consumption in Nigeria	2021	17	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85109378363&doi=10.1108%2fJSM-07-2020-0280&partnerID=40&md5=f2b8685fed70e66e137cd7114305ae30
T2	Ranade, Ajit	Role of 'Fintech' in Financial inclusion and new business models	2017	13	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85016258361&partnerID=40&md5=96a60587203cf6661420bb90cb809d02
T3	Gabor, Daniela; Brooks, Sally	The digital revolution in financial inclusion: international development in the fintech era	2017	261	https://www.scopus.com/inward/record.uri?eid=2-s2.0-84997822239&doi=10.1080%2f13563467.2017.1259298&partnerID=40&md5=efa0d6c97825869f12e15574f6e8b48b
T3	Langley, Paul; Leyshon, Andrew	The Platform Political Economy of FinTech: Reintermediation, Consolidation and Capitalisation	2021	62	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85085383899&doi=10.1080%2f13563467.2020.1766432&partnerID=40&md5=0d08e596d6bd75334945e6b1ca5ba8d6
T3	Kandpal, Vinay; Mehrotra, Rajat	Financial inclusion: The role of fintech and digital financial services in India	2019	45	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85078895210&partnerID=40&md5=9e64e01e4a9fa4ca88ba1291b319ad9d
T3	Tsai, Chang-Hsien; Peng, Kuan-Jung	The FinTech Revolution and Financial Regulation: The Case of Online Supply-Chain Financing	2017	36	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85018160901&doi=10.1017%2fals.2016.65&partnerID=40&md5=070473037689a7381f4a1a5cfc1e58e
T3	Davis, Kevin; Maddock, Rodney; Foo, Martin	Catching up with indonesia's fintech industry	2017	32	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85021252021&doi=10.1080%2f17521440.2017.1336398&partnerID=40&md5=1c8fe383c3b0f4d22f40d293385ec3dd
T3	Gruin, Julian; Knaack, Peter	Not Just Another Shadow Bank: Chinese Authoritarian Capitalism and the 'Developmental' Promise of Digital Financial Innovation	2020	28	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85060594470&doi=10.1080%2f13563467.2018.1562437&partnerID=40&md5=ac4eaca6bba31e47bf49fe5e0b5dd9ff
T3	Suárez, Sandra L.	Poor people's money: The politics of mobile money in Mexico and Kenya	2016	27	https://www.scopus.com/inward/record.uri?eid=2-s2.0-84962124856&doi=10.1016%2fj.telpol.2016.03.001&partnerID=40&md5=2e294448d983d6f279f0e96c56c90d66
T3	Kemal, Atika Ahmad	Mobile banking in the government-to-person payment sector for financial inclusion in Pakistan*	2019	26	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85041014553&doi=10.1080%2f02681102.2017.1422105&partnerID=40&md5=13ef1753e07886a1ba184ae21480ef8d
T3	Allen, Franklin; Gu, Xian; Jagtiani, Julapa	Fintech, Cryptocurrencies, and CBDC: Financial Structural Transformation in China	2022	24	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85125956557&doi=10.1016%2fj.jimonfin.2022.102625&partnerID=40&md5=274d0cccd2d50f9ee9a7a6d85b2138de
T3	Burns, Scott	M-Pesa and the 'Market-Led' Approach to Financial Inclusion	2018	22	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85055125374&doi=10.1111%2fecaf.12321&partnerID=40&md5=c3355b662cfa468adabf106d26972627
T3	Jones, Emily; Knaack, Peter	Global Financial Regulation: Shortcomings and Reform Options	2019	22	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85061771113&doi=10.1111%2f1758-5899.12656&partnerID=40&md5=4f85e4ac26cf79c25485e4a6a7d6c529

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T3	Bernards, Nick	Tracing mutations of neoliberal development governance: 'Fintech', failure and the politics of marketization	2019	21	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85068900140&doi=10.1177%2f0308518X19862576&partnerID=40&md5=adc749d62e2253963d80dfd5cc3b9624
T3	Mansour, Hoda	How successful countries are in promoting digital transactions during COVID-19	2022	18	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85102940807&doi=10.1108%2fJES-10-2020-0489&partnerID=40&md5=8459f9c7496f92916765f9210d5e6980
T3	Klapper, Leora; Singer, Dorothe	The opportunities and challenges of digitizing government-to- person payments	2017	16	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85031926531&doi=10.1093%2fwbro%2flkx003&partnerID=40&md5=95add4bd2ffa30dafb954b8c5f97310d
T3	Rogers, Chris; Clarke, Chris	Mainstreaming social finance: The regulation of the peer-to-peer lending marketplace in the United Kingdom	2016	13	https://www.scopus.com/inward/record.uri?eid=2-s2.0-84991249098&doi=10.1177%2f1369148116651357&partnerID=40&md5=0d5d2387b44cb466ef95f87f0fc745f5
T4	Farah, Maya F.; Hasni, Muhammad Junaid Shahid; Abbas, Abbas Khan	Mobile-banking adoption: empirical evidence from the banking sector in Pakistan	2018	116	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85053276573&doi=10.1108%2fIJBM-10-2017-0215&partnerID=40&md5=39ba915181f1e154d1a28c64aea6fa18
T4	Jünger, Moritz; Mietzner, Mark	Banking goes digital: The adoption of FinTech services by German households	2020	78	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85070882227&doi=10.1016%2fj.frl.2019.08.008&partnerID=40&md5=fbffccce1f7863909fb71619f7acaa28
T4	Senyo, P.K.; Osabutey, Ellis L.C.	Unearthing antecedents to financial inclusion through FinTech innovations	2020	75	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85086730126&doi=10.1016%2fj.technovation.2020.102155&partnerID=40&md5=f1d32769bab64f29d9bfe405098c249a
T4	Chauhan, Sumedha	Acceptance of mobile money by poor citizens of India: Integrating trust into the technology acceptance model	2015	67	https://www.scopus.com/inward/record.uri?eid=2-s2.0-84929148633&doi=10.1108%2finfo-02-2015-0018&partnerID=40&md5=5f96b6caed8fded2bae140d2f3fee6de
T4	Tobbin, Peter	Towards a model of adoption in mobile banking by the unbanked: A qualitative study	2012	64	https://www.scopus.com/inward/record.uri?eid=2-s2.0-84864433756&doi=10.1108%2f14636691211256313&partnerID=40&md5=b255eff668d36e7ded4b7ab1644a9d8f
T4	Gupta, Kriti Priya; Manrai, Rishi; Goel, Utkarsh	Factors influencing adoption of payments banks by Indian customers: extending UTAUT with perceived credibility	2019	60	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85067027789&doi=10.1108%2fJABS-07-2017-0111&partnerID=40&md5=032c4303bea487211d78cc04af3e50da
T4	Gbongli, Komlan; Xu, Yongan; Amedjonekou, Komi Mawugbe	Extended technology acceptance model to predict mobile-based money acceptance and sustainability: A multi-analytical structural equation modeling and neural network approach	2019	58	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85068646095&doi=10.3390%2fsu11133639&partnerID=40&md5=2863c1c93b57737a5b1598df2dce756c
T4	Shankar, Amit	Factors affecting mobile banking adoption behavior in India	2016	58	https://www.scopus.com/inward/record.uri?eid=2-s2.0-84963756561&partnerID=40&md5=7ed09809243d50757e642caef6b09d33

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T4	Rahman, Syed Abidur; Taghizadeh, Seyedeh Khadijeh; Ramayah, T.; Alam, Mirza Mohammad Didarul	Technology acceptance among micro-entrepreneurs in marginalized social strata: The case of social innovation in Bangladesh	2017	55	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85013862823&doi=10.1016%2fj.techfore.2017.01.027&partnerID=40&md5=2ed2a1b8cde75cc8d0a60975f4b121d4
T4	Krishna Kishore, S.V.; Sequeira, Aloysius Henry	An empirical investigation on mobile banking service adoption in rural Karnataka	2016	47	https://www.scopus.com/inward/record.uri?eid=2-s2.0-84969262843&doi=10.1177%2f2158244016633731&partnerID=40&md5=21493cf20068fa4e634c45a87f9620c4
T4	Gichuki, Castro Ngumbu; Mulu-Mutuku, Milcah	Determinants of awareness and adoption of mobile money technologies: Evidence from women micro entrepreneurs in Kenya	2018	43	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85038935737&doi=10.1016%2fj.wsif.2017.11.013&partnerID=40&md5=dcac8b9f26575b4e10f75522a16eab14
T4	Sinha, Mona; Majra, Hufrish; Hutchins, Jennifer; Saxena, Rajan	Mobile payments in India: the privacy factor	2019	41	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85053248448&doi=10.1108%2fIJBM-05-2017-0099&partnerID=40&md5=ee2cc733b51cb522ab6a9c7c5c5a4463
T4	Della Peruta, Maëlle	Adoption of mobile money and financial inclusion: a macroeconomic approach through cluster analysis	2018	36	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85018357914&doi=10.1080%2f10438599.2017.1322234&partnerID=40&md5=004c93f935dfa28ae007a8d16185d080
T4	Fu, Jonathan; Mishra, Mrinal	Fintech in the time of COVID–19: Technological adoption during crises	2022	29	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85122335805&doi=10.1016%2fj.jfi.2021.100945&partnerID=40&md5=db66c806953664a4458aaa2e1099e389
T4	Rana, Nripendra P.; Luthra, Sunil; Rao, H. Raghav	Key challenges to digital financial services in emerging economies: the Indian context	2020	29	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85065906363&doi=10.1108%2fITP-05-2018-0243&partnerID=40&md5=a04f8a6f28ad5da800755227c4302c23
T4	Oborn, Eivor; Barrett, Michael; Orlikowski, Wanda; Kim, Anna	Trajectory dynamics in innovation: Developing and transforming a mobile money service across time and place	2019	28	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85072659466&doi=10.1287%2forsc.2018.1281&partnerID=40&md5=1abd5f797f1bbce45cba5e8d83335bb8
T4	Deb, Madhurima; Agrawal, Aarti	Factors impacting the adoption of m-banking: understanding brand India's potential for financial inclusion	2017	27	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85011977749&doi=10.1108%2fJABS-11-2015-0191&partnerID=40&md5=145e2703a4af0afdf2d4788ac48b7723
T4	Setiawan, Budi; Nugraha, Deni Pandu; Irawan, Atika; Nathan, Robert Jeyakumar; Zoltan, Zeman	User innovativeness and fintech adoption in indonesia	2021	25	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85113743292&doi=10.3390%2fjoitmc7030188&partnerID=40&md5=fe3adb1bc0a24c066b87c6eb2399e1b5
T4	Kala Kamdjoug, Jean Robert; Wamba-Taguimdje, Serge-Lopez; Wamba, Samuel Fosso; Kake, Ingrid Bive'e	Determining factors and impacts of the intention to adopt mobile banking app in Cameroon: Case of SARA by afriland First Bank	2021	23	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85101655919&doi=10.1016%2fj.jretconser.2021.102509&partnerID=40&md5=7075a8fd6f9aa02ee289c327f73909ff

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T4	Su, Lanlan; Peng, Yanling; Kong, Rong; Chen, Qiu	Impact of e-commerce adoption on farmers' participation in the digital financial market: Evidence from rural china	2021	22	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85105907854&doi=10.3390%2fjtaer16050081&partnerID=40&md5=5a7f1ae61e366cbfa405aacf7fcb1974
T4	Lutfi, Abdalwali; Al-Okaily, Manaf; Alshirah, Malek Hamed; Alshira'h, Ahmad Farhan; Abutaber, Thaer Ahmad; Almarashdah, Manal Ali	Digital financial inclusion sustainability in Jordanian context	2021	20	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85107874330&doi=10.3390%2fsu13116312&partnerID=40&md5=79b6d9edf0a3109bc332475d1d63d40d
T4	Koomson, Isaac; Bukari, Chei; Villano, Renato A.	Mobile money adoption and response to idiosyncratic shocks: Empirics from five selected countries in sub-Saharan Africa	2021	19	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85102251137&doi=10.1016%2fj.techfore.2021.120728&partnerID=40&md5=e57b9bbbc07098164cf791442524a6a8
T4	Afawubo, Komivi; Couchoro, Mawuli K.; Agbaglah, Messan; Gbandi, Tchapo	Mobile money adoption and households' vulnerability to shocks: Evidence from Togo	2020	17	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85073941898&doi=10.1080%2f00036846.2019.1659496&partnerID=40&md5=3d7a12f770d103f890182ec19331d7aa
T4	Al-Okaily, Manaf; Alsharairi, Malek; Natour, Abdul Rahman Al; Shishan, Farah; Al-Dmour, Ahmed; Alghazzawi, Rasha	Sustainable fintech innovation orientation: A moderated model	2021	16	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85120993315&doi=10.3390%2fsu132413591&partnerID=40&md5=7dc25965d037b457d8d6ff61d2d9eed4
T4	Okello Candiya Bongomin, George; Ntayi, Joseph Mpeera	Mobile money adoption and usage and financial inclusion: mediating effect of digital consumer protection	2020	14	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85085027615&doi=10.1108%2fDPRG-01-2019-0005&partnerID=40&md5=3a47b4ed62ea6b5a764b6e1db8862913
T4	Philippas, Nikolaos D.; Avdoulas, Christos	Financial literacy and financial well-being among generation-Z university students: Evidence from Greece	2020	36	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85076424626&doi=10.1080%2f1351847X.2019.1701512&partnerID=40&md5=152f226ffdebc6abd8fb3858634f7d8f
T4	Hasan, Morshadul; Le, Thi; Hoque, Ariful	How does financial literacy impact on inclusive finance?	2021	21	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85107155343&doi=10.1186%2fs40854-021-00259-9&partnerID=40&md5=eb7475e873100c3ee66c54132ef71fb7
T4	Nejad, Mohammad G.; Javid, Katayon	Subjective and objective financial literacy, opinion leadership, and the use of retail banking services	2018	19	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85047817550&doi=10.1108%2fIJBM-07-2017-0153&partnerID=40&md5=c577a00d2d57780c6090b38d58571e68
T4	Chen, Jia ; Jiang, Jiajun; Liu, Yu-jane	Financial literacy and gender difference in loan performance	2018	17	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85051118133&doi=10.1016%2fj.jempfin.2018.06.004&partnerID=40&md5=3a978ee97a898c97cd2070b3a0aa2d87
T4	Kass-Hanna, Josephine ; Lyons, Angela C.; Liu, Fan	Building financial resilience through financial and digital literacy in South Asia and Sub-Saharan Africa	2022	14	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85119334437&doi=10.1016%2fj.ememar.2021.100846&partnerID=40&md5=d983c7c98c2ce0787e7c0a2234d03605

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T4	Kumar, Parul; Pillai, Rekha; Kumar, Neha; Tabash, Mosab I.	The interplay of skills, digital financial literacy, capability, and autonomy in financial decision making and well-being	2023	3	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85140927328&doi=10.1016%2fj.bir.2022.09.012&partnerID=40&md5=eb038dfa585c10b4a66d58032d0c2370
T4	Andreou, Panayiotis C.; Anyfantaki, Sofia	Financial literacy and its influence on internet banking behavior	2021	12	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85098486325&doi=10.1016%2fj.emj.2020.12.001&partnerID=40&md5=1fc50f3e4fffc891085834e5bae9b343
T4	Graham, Carol; Nikolova, Milena	Does access to information technology make people happier? Insights from well-being surveys from around the world	2013	49	https://www.scopus.com/inward/record.uri?eid=2-s2.0-84875794988&doi=10.1016%2fj.socec.2013.02.025&partnerID=40&md5=cb7f4a4f14fc731345528f2775d210f6
T4	Meng, Defeng	Digital financial capability and household consumption: evidence from China	2023	0	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85146479966&doi=10.1080%2f13504851.2023.2167915&partnerID=40&md5=8db56229c169fdd15d5101fbcc86de7f
T4	Zins, Alexandra; Weill, Laurent	The determinants of financial inclusion in Africa	2016	207	https://www.scopus.com/inward/record.uri?eid=2-s2.0-84991070287&doi=10.1016%2fj.rdf.2016.05.001&partnerID=40&md5=a354bb615258141fef2d62fb4bbd8d67
T4	Maurer, Bill	Mobile Money: Communication, Consumption and Change in the Payments Space	2012	156	https://www.scopus.com/inward/record.uri?eid=2-s2.0-84862314785&doi=10.1080%2f00220388.2011.621944&partnerID=40&md5=21d9bff0cab735edf12ff22d48d790b2
T4	Okello Candiya Bongomin, George; Ntayi, Joseph M; Munene, John C.; Malinga, Charles Akol	Mobile Money and Financial Inclusion in Sub-Saharan Africa: the Moderating Role of Social Networks	2018	101	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85041096595&doi=10.1080%2f15228916.2017.1416214&partnerID=40&md5=cc7de256d3a4c5708d400b80eb70ff8c
T4	Larios-Hernández, Guillermo Jesús	Blockchain entrepreneurship opportunity in the practices of the unbanked	2017	99	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85029477219&doi=10.1016%2fj.bushor.2017.07.012&partnerID=40&md5=077c5d1cea1117d9a04710914c7ba1e3
T4	Beck, Thorsten; Pamuk, Haki; Ramrattan, Ravindra; Uras, Burak R.	Payment instruments, finance and development	2018	68	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85042637100&doi=10.1016%2fj.jdeveco.2018.01.005&partnerID=40&md5=7a1876e5bc34344389177985a7fbf868
T4	Munyegera, Ggombe Kasim; Matsumoto, Tomoya	ICT for financial access: Mobile money and the financial behavior of rural households in Uganda	2018	41	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85021844920&doi=10.1111%2frode.12327&partnerID=40&md5=6f31adf4ccdb2149c93faeb748ea9dd3
T4	Apiors, Emmanuel Kwablah; Suzuki, Aya	Mobile money, individuals' payments, remittances, and investments: Evidence from the Ashanti Region, Ghana	2018	29	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85046680912&doi=10.3390%2fsu10051409&partnerID=40&md5=a4809fd86dcafe0bb7db392625e6d93b
T4	Ky, Serge; Rugemintwari, Clovis; Sauviat, Alain	Does mobile money affect saving behaviour? Evidence from a developing country	2018	27	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85048551364&partnerID=40&md5=d3a4595fa97ab42bee0da9fcb5c9c35b

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T4	Pal, Abhipsa; Herath, Tejaswini; De', Rahul; Raghav Rao, H.	Why do people use mobile payment technologies and why would they continue? An examination and implications from India	2021	24	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85103303291&doi=10.1016%2fj.respol.2021.104228&partnerID=40&md5=4a0c9309cd11bd7b417996dca21123cc
T4	Yue, Pengpeng; Korkmaz, Aslihan Gizem; Yin, Zhichao; Zhou, Haigang	The rise of digital finance: Financial inclusion or debt trap?	2022	24	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85122276865&doi=10.1016%2fj.frl.2021.102604&partnerID=40&md5=b7fdde04e80a04490cf5774997b20434
T4	Asongu, Simplice A.; Biekpe, Nicholas; Cassimon, Danny	Understanding the greater diffusion of mobile money innovations in Africa	2020	23	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85086432731&doi=10.1016%2fj.telpol.2020.102000&partnerID=40&md5=61f8841318b9b391fddd8837b05bf55b
T4	Darmansyah; Fianto, Bayu Arie; Hendratmi, Achsania; Aziz, Primandanu Febriyan	Factors determining behavioral intentions to use Islamic financial technology: Three competing models	2020	23	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85082923387&doi=10.1108%2fJIMA-12-2019-0252&partnerID=40&md5=948189eed374c38f79b7a742d287d68d
T4	Amoah, Anthony; Korle, Kofi; Asiama, Rexford Kweku	Mobile money as a financial inclusion instrument: what are the determinants?	2020	19	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85089781005&doi=10.1108%2fIJSE-05-2020-0271&partnerID=40&md5=7b43b5a8782c3c3b494bfa755d08635d
T4	Hasbi, Maude; Dubus, Antoine	Determinants of mobile broadband use in developing economies: Evidence from Sub-Saharan Africa	2020	19	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85083248566&doi=10.1016%2fj.telpol.2020.101944&partnerID=40&md5=6e20c8b83a2cd7ff49e44e2c66598221
T4	Ofori, Daniel; Appiah-Nimo, Christina	Determinants of online shopping among tertiary students in Ghana: An extended technology acceptance model	2019	19	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85070107721&doi=10.1080%2f23311975.2019.1644715&partnerID=40&md5=9d56274b4739016e5bb2ed3bc4fe83e7
T4	Li, Bin; Hanna, Sherman D.; Kim, Kyoung Tae	Who Uses Mobile Payments: Fintech Potential in Users and Non-Users	2020	16	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85087924394&doi=10.1891%2fJFCP-18-00083&partnerID=40&md5=1be56b399558b08f3db32bbea84b0882
T4	Van Klyton, Aaron; Tavera-Mesías, Juan Fernando; Castaño-Muñoz, Wilson	Innovation resistance and mobile banking in rural Colombia	2021	16	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85095839765&doi=10.1016%2fj.jrurstud.2020.10.035&partnerID=40&md5=27fda0c3c21c55b33a74314ebd1a9652
T4	Andreou, Panayiotis C.; Anyfantaki, Sofia	Financial literacy and its influence on internet banking behavior	2021	12	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85098486325&doi=10.1016%2fj.emj.2020.12.001&partnerID=40&md5=1fc50f3e4fffc891085834e5bae9b343

APPENDIX C: A Summary arising from the Thematic Analysis

The first thematic area allowed the categorisation of publications that provided insights into how FinTech has not only transformed but also holds the potential to reshape the financial landscape, particularly concerning inclusivity. This domain delved into the correlation between FinTech and FI, highlighting FinTech's distinctive technological capacity to bolster FI by extending DFS to individuals traditionally excluded from the conventional banking system. This analysis revealed a complex relationship between technological advancements and financial inclusivity rooted in the numerous interrelated variables involved in such a financial mechanism.

As part of this taxonomy, the literature has extensively delved into several core themes, including *Economic Development*, thus analysing the impact of financial technology on the broader economic landscape, with particular reference to enhanced quality of life of individuals, households and SMEs. Secondly, FinTech has prominently emerged as a *Transformative Paradigm*, with scholars defining FinTech as such, particularly regarding its capabilities and their effect on tackling the issue of financial exclusion. Lastly, the discourse has extensively covered *Financial Stability and Economic Resilience*, shedding light on the potential consequences and benefits of FinTech within these critical domains. Various scholars have raised concerns with a notable focus on the long-term viability of the FinTech approach. This emphasis is understandable, considering the relative novelty of FinTech, which claims to be a disruptive force in the existing financial market. These critical perspectives underscore the necessity for thoroughly examining FinTech's sustainability and its potential impact on established financial systems.

The second domain, FA, has organically emerged from research focused on those FinTech elements that possess the inherent capacity to enhance the supply side of FI, thereby expanding

accessibility to a broader spectrum of individuals. One core variable that emerged is *Infrastructure*, particularly in the context of FinTech, which has a fundamental role in extending FS, as seen in the Kenyan case where mobile money services leveraged existing digital infrastructure. Another prominent study area is *Interoperability*, which is often indispensable for promoting access, reducing costs, fostering innovation, enhancing customer experience, and fostering systems' security and adaptability. Yet, its applicability is intricately tied to specific geographical and demographical instances, acknowledging that its impact and effectiveness may vary in different contexts.

Within this taxonomy, another noteworthy theme in scholarly research revolves around FinTech business models, specifically delving into the technological mechanisms FinTechs utilise to deliver services effectively. Scholars underscore how these approaches and tools vary based on geographical and demographic factors, emphasising that the success of these methods is intricately linked to sociocultural elements. This underscores the importance of aligning financial models with existing cultural norms for long-term sustainability.

Furthermore, examining the *Regulatory and Legal Environment* elucidates the challenges and opportunities associated with the evolving landscape of FinTech regulation. The academic discourse underscores the crucial need for an adaptive regulatory framework to foster innovation while ensuring consumer protection and system stability. The regulatory discussion reflects the scholar's engagement with the dynamic nature of FinTech and its implications for FI. The prevailing international choice has been to provide preferential regulatory treatment for FinTech, considering various factors, although not universally shared. Among these, it is important to highlight the limited understanding of their operational characteristics and, hence, the difficulty in defining an appropriate regulatory framework. Also significant is the desire to stimulate

competition within the financial sector, multiplying access channels to services and promoting operational efficiency conditions for the benefit of customers.

Lastly, the domain of *FU* delves into the demand side of FI, emphasising the adoption and diffusion of DFS. The application of theoretical frameworks such as TAM and UTAUT highlights the concerted effort within academia to understand the factors influencing individuals' attitudes and intentions regarding the adoption of FinTech-driven FS. Moreover, Financial Literacy and Capability are regarded as drivers in the intricate process leading to the practical utilisation of financial services. This significance is particularly pronounced in the digital age, where the symbiosis between financial and digital literacy is central in fostering inclusiveness, resilience, and trust in DFS.

In conclusion, the scholarly community has made significant progress in evaluating the correlation between FinTech and FI. The thorough scrutiny of thematic areas provides a nuanced understanding of how FinTech catalyses the promotion of FI, with considerations for access, regulation, and user adoption. However, the dynamic nature of FinTech necessitates continued inquiry to stay abreast of emerging trends and challenges at the intersection of FinTech and FI.