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Exploring the impact of fintech on financial inclusion: Literature review

Explorer l'impact de la fintech sur l'inclusion financière : Revue de littérature

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Abstract:

Financial inclusion refers to providing financial products and services to households and small businesses that were previously excluded, as a means of promoting more inclusive growth. This includes access to savings, investment, consumption smoothing, and insurance. Fintech is the use of software, applications, and digital platforms to provide financial services to consumers and businesses through digital devices like smartphones. It has gained recognition as a promising way to promote financial inclusion. This paper examines the impact of financial technology (fintech) on financial inclusion through a literature review following the Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) to identify the ways in which fintech contributes to and can potentially contribute to increased financial inclusion. The paper provides a brief history of fintech, reviews the literature on fintech and financial inclusion, and discusses how fintech can increase access to financial services, promote financial literacy and consumer protection, and support the growth of micro and small enterprises. The paper concludes with empirical evidence on the impact of fintech on financial inclusion.

Keywords: Fintech, Financial inclusion, Digital finance, Innovation, Systematic review.
Classification JEL: G23
Paper type: Theoretical Research

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1. Introduction

Developing financial inclusion index (Sarma 2016; Mialou et al. 2017), investigating the factors that affect financial inclusion (Zins and Weill 2016; Kumar 2013; Kabakova and Plaksenkov 2018), and analysing the effects of financial inclusion (Hannig and Jansen 2010; Adegbite and Machethe 2020; Ghosh and Vinod 2017) have been the main focus of recent studies on financial inclusion. However, the role that financial technology (fintech) plays in enhancing financial inclusion is a relatively new but yet important area that needs more warrants further study. (Ha & al., 2025)

Financial technology (fintech) has rapidly gained traction in recent years and is transforming the financial sector by offering innovative solutions to address long-standing challenges in financial services and access. Fintech is expected to have a significant impact on the financial landscape, with the potential to increase financial inclusion and support entrepreneurial development. Particularly in areas where traditional banking is difficult to reach, this new player has facilitated the adoption of easily available financial services like mobile money (Pelletier et al. 2020; Senyo et al. 2021).

Financial innovations have made significant strides in promoting financial inclusion, which refers to providing access to formal financial services to previously unbanked individuals and businesses. Developing countries, in particular, have benefited from the widespread use of mobile devices for financial services, resulting in a substantial increase in financial inclusion. The growth of platform-based lending models has also emerged as a result of retrenchment in SME lending by commercial banks following the global financial crisis. However, the influx of new players has also posed regulatory challenges in terms of financial stability and consumer protection (Beck, 2020). Fintech, or financial technology, has become a key player in changing how financial services are provided, accessed, and used. Fintech includes a wide variety of technologies, such as blockchain, artificial intelligence (AI), machine learning, and digital payment systems, that have transformed conventional financial services (Adeleke & al., 2024)

Fintechs' impact on enhancing financial inclusion is one of its most significant effects. Fintech has opened up the possibility for millions of unbanked and underbanked people to access financial products that were previously out of reach by connecting to digital platforms and using mobile services. Fintech solutions have provided payment, deposit, credit and insurance in many developing countries with limited or no access to traditional banking infrastructure (Suri and Jack, 2016).

This paper provides a comprehensive examination of the impact of fintech on financial inclusion through a literature review, with a focus on the role that fintech can play in promoting financial access for unbanked people in emerging countries. For this, we followed the Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) methodology for systematic literature review and went from an initial body of 262 articles to a sample of 15 relevant studies, extracted from Scopus databases. Additionally, we performed a bibliometric study in order to identify the articles that meet our research criteria for final analysis.

The paper begins by defining fintech and providing a brief overview of its history and evolution. This is followed by a literature review of fintech and financial inclusion. The paper then focuses on the impact of fintech on financial inclusion, examining how fintech can increase access to financial services, promote financial literacy and consumer protection, and support the growth of micro and small enterprises. This section also explores the challenges and limitations of fintech in promoting financial inclusion, such as the lack of regulation and poor use of mobile payment applications in developing countries.

The following section of the paper presents some empirical evidence on the impact of fintech on financial inclusion.

2. The concept of fintech: Definition, history and evolution

The concept of FinTech has been defined several times in the literature, is a term that has been used to describe a wide range of financial technologies, including digital wallets, mobile banking, peer-to-peer (P2P) lending, robo-advisors, and blockchain-based financial products. However, there is no universally accepted definition of fintech. Some definitions focus on the use of technology in financial services, while others emphasize the innovative and disruptive nature of fintech. One definition of fintech is « the use of technology to improve and automate financial services and processes, such as mobile banking, P2P lending, and digital payments » (Kshetri, 2017). Another definition by The Financial Stability Board (FSB) (2019) « fintech is a financial innovation based on new technologies, which has led to the emergence of new business models, applications, processes and products that could have a significant impact on the financial services market».

Fintech refers to the innovative techniques and offerings in the financial sector brought about by digital technology advancements. Specifically, the Financial Stability Board describes fintech as the use of technology to bring about new advancements in financial markets and institutions, leading to the creation of new business models, applications, processes, and products with a significant impact on financial services. Leong and Sung, 2018 (2018) view FinTech as an interdisciplinary discipline that merges finance, technology management, and innovation management. According to (Paikoh & al., 2021) fintech is an IT-based financial innovation that facilitates a various transaction processes, such as transfer, purchasing, and lending.

Fintech is a service sector which uses mobile-centered IT technology to enhance the efficiency of financial system. As a term, it is a compound of "finance" and "technology", and collectively refers to industrial changes forged from the convergence of financial services and IT (Kim, Park & Choi, 2016)

The history of fintech can be traced back to the 1950s with the invention of the credit card. This was quickly followed by the development of the automated teller machine (ATM). Over the years, the use of technology in finance has continued to evolve and expand. The 1990s saw the development of online banking, followed by the growth of mobile banking in the 2000s.

Financial service providers, especially banks, began incorporating information technology into their operations as early as the 1960s. The bigger banks set up their IT departments, which were composed of numerous employees. These departments created custom applications and established corporate networks that connected different units and branch offices. With time, these systems also enabled customers to interact with the banks electronically through interfaces like ATMs and online banking. Additionally, the systems allowed external stakeholders, such as other banks and financial exchanges, to connect electronically as well.

During the 1970s and 1990s, multinational electronic networks like SWIFT and TARGET emerged to facilitate digitalization between banks. These networks established interfaces to the bank's internal systems. Another network, SEPA, was launched in 2009 to enable real-time processes between banks. Recently, SEPA has been upgraded to provide this capability. In the 1980s, exchange providers shifted from physical trading floors to electronic trading and clearing systems. Nowadays, most exchanges worldwide, including CBOT in Chicago, EEX in Leipzig, NYSE in New York, and XETRA in Frankfurt, offer fully electronic and real-time trading of stocks, certificates, and other derivatives.

Examples of FinTech innovation include crypto-currencies and blockchain, digital advisory and trading systems, artificial intelligence and machine learning, peer-to-peer lending, equity crowdfunding and mobile payment systems.

In recent years, fintech has become a major force in the financial industry, as innovative startups have disrupted traditional financial services with new and improved products. For example, P2P lending platforms like Lending Club and Prosper have challenged the dominance of

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traditional banks, while robo-advisors like Betterment and Wealthfront have revolutionized the way people invest their money.

The fintech market is booming, In the United States, a pioneer country in this sector, their number increased fourfold between 2013 and 2014. Globally, they funded $15 billion in 2014: that's five times more than the previous year (bolden, 2017). This market grew globally by 201% in 2014, so global investment in FinTech tripled between 2013 and 2014 and reached $12.2 billion in 2014. Global investments within Fintech between 2008 and 2014, where the United States retains the lion's share, and Europe has seen the greatest growth with an increase of 215%. This growth tends to increase according to statistics at the global or regional level; in 2015, the global financing volume reached 22, 265 billion dollars with a volume of concluded transactions that arrived at 896 (GACH & GOTSCH, 2017). In addition, the Ernst & Young (EY) Fintech Adoption Index shows that 15.5% of digitally connected consumers used at least 2 fintech products during 2015

Notably, the EY advocated that Hong Kong ranks first in Fintech usage with a rate of 29.1%, The United States takes second place with a rate of 16.5%, followed by Singapore (14.7%), The United Kingdom (14.3%), Australia (13%) and Canada (8.2%) (LACASSE, LAMBERT, & Cárdenas TUZA, 2016).

The impact of fintech on the financial industry has been significant, with many traditional financial institutions adopting fintech solutions and investing in fintech startups. This has led to increased competition and improved financial services for consumers.

3. Fintech and financial inclusion: Theoretical background

The World Bank (2008) defines financial inclusion as the absence of "price and non-price barriers to the use of financial services", according to the World Bank, the only barrier to financial inclusion is the cost of services, even for Lwanga and Adong (2016) who consider financial inclusion as the absence of both tariff and non-tariff barriers to financial services and Iyer (2015) who defines financial inclusion as universal access to financial services by poor and disadvantaged people at a fairly affordable cost. The operational cost of financial services result in the financial exclusion of a large portion of the world's population (Thulani et al. 2014; Sekantsi and Motelle, 2016).

Financial inclusion is defined by the United Nations as "access, at a reasonable cost to all households and enterprises, to a broad range of financial services savings, short- and long-term credit, leasing and factoring, mortgages, insurance, pensions, payments, local currency transfers, and international remittances" (BCEAO 2014), the UN considers financial inclusion to be broadening access to financial services at a cost appropriate to different population segments. This definition is identical to that of Aduda who defines financial inclusion as ensuring access to financial products and services at an affordable cost (Aduda, 2012) and Shankar who defines financial inclusion as expanding access to formal financial products and services at an affordable cost (Shankar, 2011)

The United National Capital Development Fund (UNCDF) defines financial inclusion as the situation where all households and businesses have access to a diverse range of financial services, including savings, credit, leasing and factoring, mortgages, insurance, pensions, payments, local transfers, and international remittances, from sustainable financial institutions that operate in a regulated environment. The emphasis on "sustainability" and "regulation" is crucial in this definition. Research by Law and Azman-saini (2012) supports the idea that proper regulation drives the growth of financial services. Philippe Aguera (2015) further defines financial inclusion as the availability of a broad spectrum of financial services, offered at a reasonable cost, to all individuals and small and medium-sized enterprises (SMEs) by accountable and sustainable institutions.

The Alliance for Financial Inclusion (AFI) defines financial inclusion as encompassing four key aspects: accessibility in terms of cost and proximity, the quality of financial products and services that meet customer needs, the effectiveness of these products and services in improving the economic conditions of beneficiaries, and the actual usage of these services by clients. AFI's definition highlights that financial inclusion is not only about access and usage but also about the positive impact of financial services on people's well-being. The link between financial intermediation and individual well-being depends on the level of financial inclusion and the quality of institutions, according to Saab (2018) and Beck (2016).

According to the World Bank, more than half of the world's youth population lacks access to formal financial services, despite considerable efforts to increase the reach of banks, insurance, and microfinance institutions (Demirgüç-Kunt et al., 2015; World Bank, 2014) and according to UN statistics, 2.7 billion people worldwide lack access to formal financial services such as savings accounts, credit, insurance and payment services (Ehrbeck, 2012).

The lack of access to financial services or the abandonment of their use is caused by difficulties in their use (Gloukoviezoff, 2004). This abandonment is the result of the ability of banks to meet the needs of their clients in case of precarity (Brunet et al., 2004), thus reflecting their ability to establish a high-quality banking relationship.

In recent decades, digital finance has demonstrated its potential to contribute to financial inclusion by aiming to reduce financial exclusion, particularly for women, the vulnerable and the poorly educated.

For the World Bank, digital finance provides the underprivileged with tools to participate through technological advancements (World Bank, 2014). By digitizing finance, financial inclusion is enhanced, resulting in benefits such as reduced costs for institutions and fintech players; secure and adequate financial services for households and businesses, eventually boosting GDP and having a positive impact on banking performance over time (Scott and al, 2018).

The IFC report on the significance of digital finance for financial inclusion highlights three main advantages of digital financial services: easy access, market-suitable products, and affordable cost for the poor (IFC, 2018; Ndung'u, 2018). Digital financial services can make life easier for clients by allowing them to conduct small transactions in their communities or from a distance, particularly during public health crises (GSMA, 2020). Klein and Mayer (2011) suggest that mobile banking services enable those previously excluded from the financial system, who preferred cash transactions, to have an electronic payment record.

According to Herro (2013), interest in using new mobile technologies to provide financial services to the unbanked has intensified since 2004. The World Bank (2023) reports that only one in four individuals in low-income countries usee the internet. As such, 2.7 billion people remain unconnected globally, mostly in low- and middle-income countries. As a result, Microsoft's Bill Gates predicts that by 2030, the unbanked, approximately 2 billion people, will be able to store and make payments from their phones.

Studies have shown that mobile money services, which allow users to store and transfer money using their cell phones, can help improve incomes and reduce poverty. A study in Kenya found that access to these services brought significant benefits, especially for women. It found that female-headed households saw their savings increase by more than a fifth. Approximately 185,000 women have left agriculture to take up commercial or retail activities. As a result, it is estimated that access to mobile banking in Kenya has contributed to a 22% reduction in extreme poverty among female-headed households.

4. Research method

Systematic literature review is a method of rigorous analysis of scientific publications on a specific topic, it consists in extracting a reliable and adequate answer to our research question

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(Brosseau & al., 2017; French, 2002; Jahan & al., 2016; Pallot, 2019). Systematic reviews are based on a systematic and verifiable protocol that aims to minimize the risk of bias (Fauvet & Gatignol, 2022).

This approach allows us to better understand the aspects already studied on a subject and to discover the gaps that remain to be addressed, in a more in-depth and general way than a single isolated study.

In the context of our research, we used this approach to identify the determinants that explain the impact of fintech on financial inclusion based on previous academic works.

This study was carried out using the PRISMA method. This methodological choice is justified by its ability to select and identify the most relevant references for quantitative or qualitative analysis. Initially, we identified all the references related to our research subject. For this, we chose the Scopus database because of its reputation for its wealth of indexed references (Zhao & Strotmann, 2015). The period of analysis chosen extends from 2014 to 2024 (the last ten years), since financial inclusion has become a political priority in most developing countries over the last decade, as in the case of Morocco.

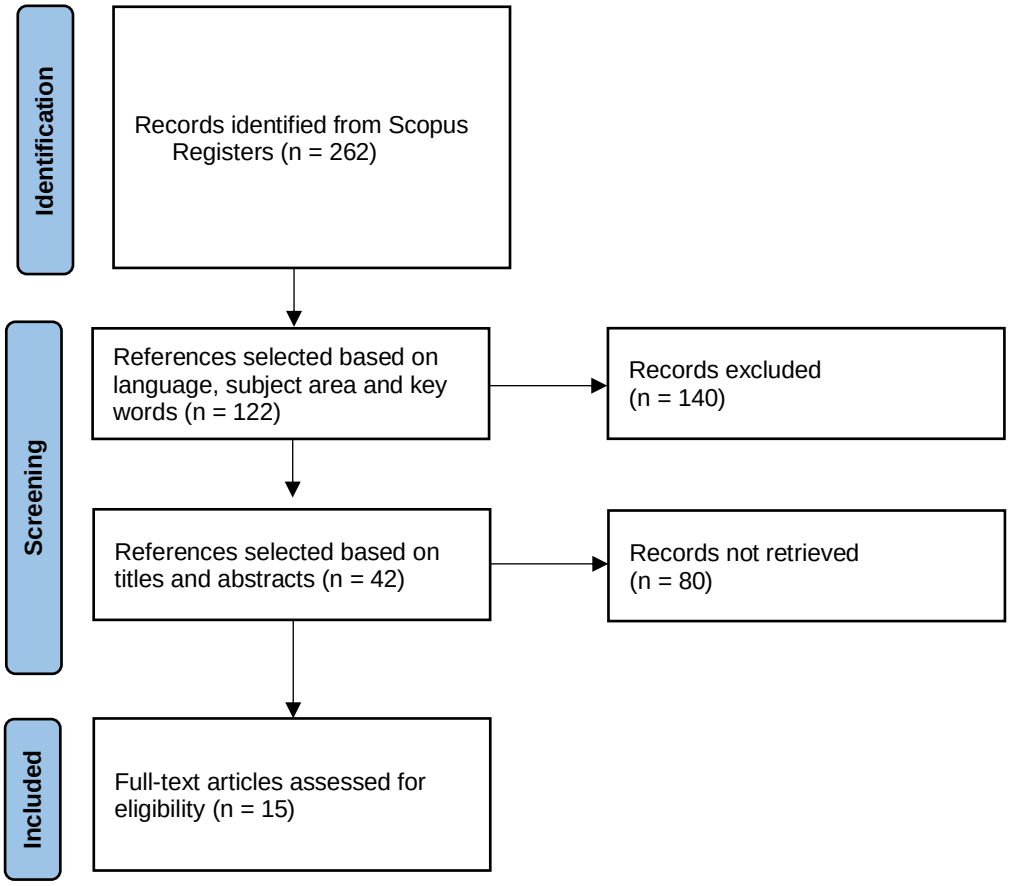
In addition, we search the two words “Fintech” and “Financial Inclusion” by adopting the Boolean operator ‘And’ in the main search field. We limited our search to journal articles in the field of “Economics, Econometrics and Finance” and “Business, Management and Accounting”. The keywords used in our main theme were “Fintech” and “Financial inclusion” , “Financial Technology”, “Mobile Money” and “Inclusive Finance” . The references selected were then subjected to an initial filter, which consisted of retaining only articles in English.

The query below shows the filtering performed to extract our sample:

(TITLE-ABS-KEY(Fintech AND Financial Inclusion) AND PUBYEAR > 2015 AND PUBYEAR < 2025 AND (LIMIT-TO (SUBJAREA,"ECON") OR LIMIT-TO (SUBJAREA,"BUSI")) AND (LIMIT-TO (DOCTYPE,"ar")) AND (LIMIT-TO (LANGUAGE,"English")) AND (LIMIT-TO (EXACTKEYWORD,"Financial Inclusion") OR LIMIT-TO (EXACTKEYWORD,"Fintech") OR LIMIT-TO (EXACTKEYWORD,"FinTech") OR LIMIT-TO (EXACTKEYWORD,"Financial Technology") OR LIMIT-TO (EXACTKEYWORD,"Financial Inclusions") OR LIMIT-TO (EXACTKEYWORD,"Mobile Money") OR LIMIT-TO (EXACTKEYWORD,"Digital Finance") OR LIMIT-TO (EXACTKEYWORD,"Inclusive Finance")))

This approach enabled us to identify a sample of 262 references collected, from 2016 to 2024 (0 articles found between 2014 and 2015)

Figure 1: PRISMA flow diagram.



Source: Authors

Secondly, we reduced the number of articles to 122, keeping only the open-access articles so that we could consult the articles and analyze the full text. The reading of abstracts and titles allows us to identify a sample of 42 references that focus on developing and emerging economies. Then, we read the full text to ensure that it was relevant to our research objective. As a final result we selected 15 articles that meet our research criteria for final analysis.

5. Results and discussions

In this section we provide a comprehensive overview of the main characteristics of the fintech articles, such as the yearly trend of articles and a brief analysis of the most cited works, to reveal their main conclusions and synthesize their key subject areas.

5.1. Bibliometric analysis

The figure below illustrates the yearly growth of the publication on the impact of Fintech on financial inclusion. The number of fintech articles increased significantly, especially post-2019, likely driven by the accelerated digital transformation triggered by the COVID-19 pandemic. The coronavirus crisis changed the way people interact and how economies function. Compelling both individuals and institutions to adopt digital solutions.

A study by Girma & Huseynov (2024) of a sample of 778 country-year observations from 197 countries, spanning the period from 2018 to 2021, confirmed that advancements in technological innovation positively contribute to the expansion of a nation's economy during the pandemic. Ozili & al., (2024) using Google Trends data over the COVID-19 pandemic period, found that interest in Fintech information was strongly correlated with interest in financial inclusion information.

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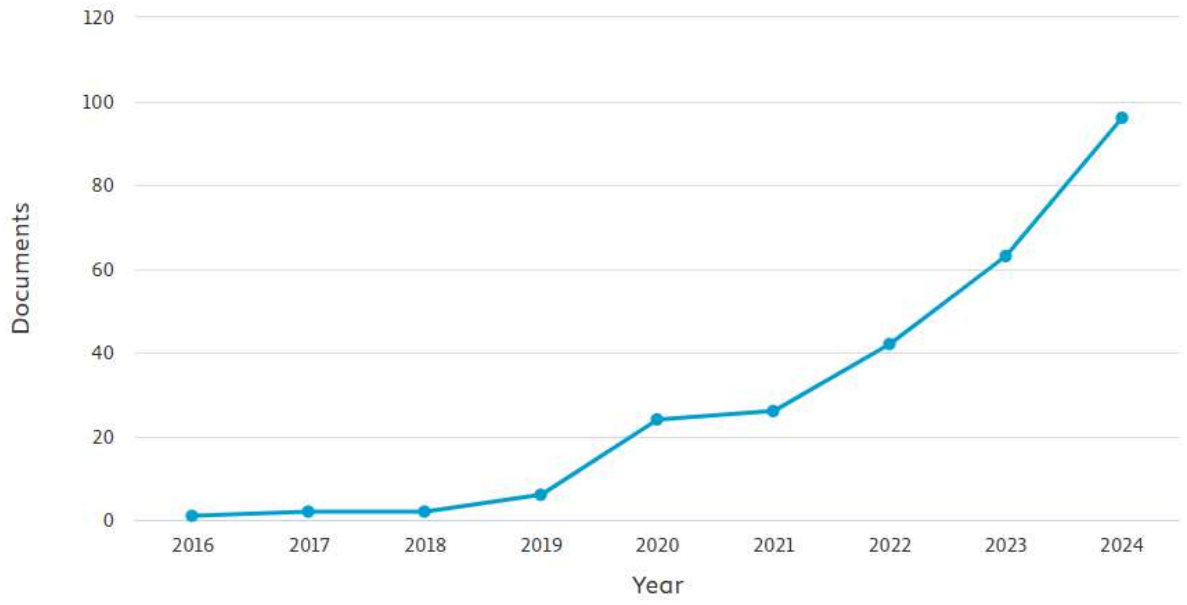
Banna & Alam (2021), using unbalanced panel data of 213 ASEAN countries (Association of Southeast Asian Nations), found that digital financial inclusion has significant means for the banking sector stability by reducing liquidity crisis and non-performing loans during and in the post-Covid-19 era, and leads to economic and financial resilience.
Fintech became the forefront of economic and technological discourse, this evolution was met by leading to a sharp increase in academic production.

Figure 2: Year-wise growth of the extracted publications (2015-2025)



Source: Authors' collaboration based on Scopus data

The table below illustrates the number of citations per article of the selected articles for full-text reading. By analyzing these articles we can gain insights into the research trends and topics they are focused on. This information may be of interest to researchers who aim to engage with the leading experts in the field and develop their own studies to contribute to the existing knowledge on the role of digital financial services in facilitating financial access.
Ozili's article is ranked first with 945 citations, which shows us that his article is relevant and constitutes an important knowledge base for researchers who have been interested in this topic or for their future publications. Other authors, including Sanyo, PK., Kanga, D and Asif, M, also display diverse citation counts

Table 1: List of articles selected for final analysis

Document title	*Authors*	*Year*	*Cited by*
Impact of digital finance on financial inclusion and stability	Ozili, P.K.	2018	945
FinTech ecosystem practices shaping financial inclusion: the case of mobile money in Ghana	Senyo, P.K., Karanasios, S., Gozman, D., Baba, M.	2022	68
The diffusion of fintech	Kanga, D., Oughton, C., Harris, L., Murinde, V.	2022	65
The Impact of Fintech and Digital Financial Services on Financial Inclusion in India	Asif, M., Khan, M.N., Tiwari, S., Wani, S.K., Alam, F.	2023	56
Digital financial inclusion - an engine for "leaving no one behind"	Ferrata, L.	2019	31
Leveraging Financial Inclusion Through Technology-Enabled Services Innovation: A Case of Economic Development in India	Dwivedi, R., Alrasheedi, M., Dwivedi, P., Starešinic, B.	2022	19

Does FinTech penetration drive financial development? Evidence from panel analysis of emerging and developing economies	Aduba, J.J., Asgari, B., Izawa, H.	2023	17
The Causal Relationship between FinTech	Girma, A.G., Huseynov, F.	2024	5
Financial Technology Adoption — A Case of Indian MSMEs	Gupta, U., Agarwal, B., Nautiyal, N.	2022	5
Information Effect of Fintech and Digital Finance on Financial Inclusion during the COVID-19 Pandemic: Global Evidence	Ozili, P.K., Mhlanga, D., Ammar, R., Fersi, M.	2024	4
FINTECH DRIVEN FINANCIAL INCLUSION: THE CASE OF VIETNAMESE HOUSEHOLDS	Truong, T.H.L., Le, T.N.Q., Le, T.T., Phan, H.M.	2023	2
Analysis of the impact of financial inclusion and FinTech on youth labour force participation in the MENA region	Elmasmari, H., Amaghouss, J.	2024	1
Financial inclusion effects of engaging with the fintech ecosystem	Kodongo, O.	2024	0
The Impact of FinTech Adoption on Traditional Financial Inclusion in Sub-Saharan Africa	Kamara, A.K., Yu, B.	2024	0
Adopting FinTech to promote financial inclusion: Evidence from western African economic and monetary union	Ahamadou, M., Agada, D.B.	2023	0

Source: Authors' collaboration based on Scopus data

5.2. Discussion of the results

Financial inclusion is a critical issue that affects millions of people around the world. It refers to the availability and accessibility of financial services, such as banking, insurance, and credit, to all individuals and businesses, regardless of their income, location, or other factors. Despite the widespread availability of financial services, many people still lack access to basic financial services and are considered to be either underbanked or unbanked.

The lack of access to financial services can have a significant impact on an individual's financial well-being, as well as on the economic growth and stability of a country. For example, individuals who are unbanked or underbanked are often unable to access credit, save money, or build a financial history, which can limit their ability to invest in their future and participate in the economy.

There are several barriers that prevent individuals and businesses from accessing financial services. These barriers include:

- Lack of physical access to financial institutions: In many rural or remote areas, there may be limited access to physical banking institutions, making it difficult for individuals to access financial services.
- High cost of financial services: For many low-income individuals, the cost of financial services may be prohibitively high, making it difficult for them to access these services.
- Lack of financial literacy: Financial literacy is the knowledge and skills needed to make informed decisions about the management of one's finances. Many individuals, especially those who are unbanked or underbanked, lack financial literacy and may not understand how financial services work or how to access them.
- Lack of trust in financial institutions: In some communities, there may be a lack of trust in financial institutions, which can prevent individuals from accessing financial services.

Fintech has the potential to revolutionize the financial industry and promote financial inclusion by providing innovative and accessible financial services to underbanked and unbanked populations. Fintech companies are able to leverage technology, such as mobile banking and digital payments, to reach and serve populations who have been historically excluded from the traditional banking system.

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- Increased access to financial services: Fintech companies can provide financial services through digital platforms, making it easier for individuals to access these services from the comfort of their own homes. This can be especially beneficial for individuals who live in rural or remote areas, or for those who have limited access to physical financial institutions.
- Lower cost of financial services: Fintech companies often operate on a low-cost business model, which allows them to provide financial services at a lower cost compared to traditional financial institutions. This can make financial services more accessible to low-income individuals.
- Improved financial literacy: Fintech companies can provide financial education and resources through their digital platforms, helping individuals build financial literacy and knowledge.
- Increased trust in financial institutions: By providing secure and transparent financial services through digital platforms, fintech

Fintech has created more opportunities for both households and businesses, including small and medium-sized enterprises, to access financial services. It also provides consumers with faster, cheaper, and more convenient financial services. One of the major benefits of Fintech is increased financial inclusion, which is expected to drive sustainable economic growth and reduce investment risk (Nizar, 2017).

Fintechs, which are competitors of banks, are gaining ground despite banks' efforts to adapt to the digital world. The new competitors are using quantitative data to challenge the traditional relationship between banks and their customers that was based on qualitative data. Fintechs can process large amounts of consumer data, whereas banks used to use this data in a personal context. However, many new competitors are avoiding applying for a banking license to save on compliance costs and are focused on scooping up the profitable businesses of banks. They also seek to take advantage of regulatory arbitrage.

On the demand side, new entrants are capitalizing on Gen Y's fear of banking by offering digital services that the younger generation feels comfortable with.

According to Ryu (2018), the study aimed to examine the factors affecting people's willingness to use Fintech and to determine whether the perceived benefits and risks of using Fintech vary between early adopters and late adopters. The results showed that legal risk had the strongest negative impact on the intention to continue using Fintech, while convenience had the greatest positive impact. The study also found that early adopters were primarily focused on the efficiency of financial transactions and were more concerned about legal risks, while late adopters were more focused on financial benefits and were more concerned about security risks.

Entry into the banking market will depend heavily on how regulation and government guarantees are enforced. The UK has created a favorable environment for fintechs and mobile "neobanks" such as Monzo, Revolut, and Starling, whereas in the US, there are many more barriers, with multiple regulators and rules requiring a physical presence in branches. In addition, when banking regulations tighten, such as with increased capital requirements, activity shifts to the alternative banking sector and the proportion of technology-based non-banks increases.

A crucial question concerns the impact of the arrival of new non-bank competitors on competition in retail banking. The lighter regulation applicable to fintechs will have a considerable impact on competition between traditional banks and new entrants. In addition, external and internal disincentives, as well as switching costs, will influence the online banking market.

6. Empirical evidence of the impact of fintech on financial inclusion

The development of mobile technology in Africa has spawned a wave of Fintechs, or financial technology companies, that have revolutionized the financial services sector on the continent. One of Africa's most famous fintechs is M-Pesa, a mobile money transfer service launched by Safaricom in Kenya in 2007, with nearly 19 million Kenyans using the service regularly, accounting for 68% of the country's money transactions. (DG Treasury, 2018)

M-Pesa was created to provide an easy and secure way to transfer money across the country, where many Kenyans did not have access to traditional banking services. The service quickly became very successful, largely due to its simple user interface and availability on popular cell phones. Since its launch, M-Pesa has expanded its services to include bill payments, cash withdrawals, and loans. The company has also expanded its operations overseas, including in Tanzania, South Africa, and India.

M-Pesa's success has inspired many other fintechs in English-speaking Africa, which have adopted similar business models to provide affordable and accessible financial services to the unbanked. These companies have also helped reduce reliance on cash, which has reduced transaction costs and improved payment security.

M-Pesa's economic and social impact is also impressive, with 180,000 jobs created and a total financial exclusion rate reduced from 38.4% in 2006 to 17.4% in 2016. In addition, M-Pesa's positive effect on consumption has been demonstrated by an MIT study, which found that the presence of five M-Pesa agents within a 1 km radius would result in a 6% increase in average per capita consumption. The social impact of M-Pesa was estimated at $1.8 billion in 2016 alone.

As a fully digital bank in South Africa, TymeBank focuses on providing affordable financial products to low-income rural customers. The bank offers core products such as a low-cost transactional account and a high-yield savings account, as well as a debit card. TymeBank has been able to keep its operational costs low by relying on partnerships with national grocery store chains Boxer and Pick n Pay (PnP) to reach customers. This online and offline distribution approach has enabled TymeBank to reach areas underserved by traditional players and to meet the financial needs of excluded customer segments, such as low-income women and rural customers. TymeBank's products have been well received by customers because of their affordability and usefulness, and the credit option available is a buy now, pay later option called MoreTyme. This case study highlights the importance of using digital technology to deliver affordable and useful financial services to underserved customer segments while keeping operational costs low through innovative distribution models.

TymeBank registers about 110,000 customers per month: about 93,500 through the point of sale, at an estimated cost of $3 per customer, and about 16,500 through the Web, at an estimated cost of $0.60 per customer.

Based on a quantitative survey of 1,162 customers, TymeBank was found to serve a higher proportion of low-income customers than traditional banks in South Africa, as well as a significantly larger financially excluded segment. Of the TymeBank customers for whom data is available, 58% live in metropolitan areas while 42% live in rural areas. The most financially excluded and underserved group in South Africa are young, rural, low-income women. Although this group represents only 2.3% of South Africa's banked population, it makes up 7% of TymeBank's active client base, nearly three times as much. Finally, 13% of TymeBank's active customers are first-time bank customers.

However, fintechs in Africa face unique challenges, such as regulation and connectivity issues, that can hinder their growth. Governments and businesses are working together to overcome these challenges and create an enabling environment for fintechs to develop.

Despite these challenges, fintechs continue to grow rapidly in Africa, providing new opportunities for entrepreneurs and investors in the financial services sector.

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A study by Jiaping Zhang, Huirong Zhang, Xiaomei Gon in 2022, based on a dataset of 1,129 rural households from 15 provinces in China and analyzes the relationship between mobile payment adoption and household consumption patterns. As a result:

- The descriptive statistics show that 53.9% of the sampled households adopted mobile payment
- The mean expenditure on food, education, health, and entertainment of households that adopt mobile payment is significantly higher than that of non-adopters.
- The results indicate that mobile payment adoption is positively associated with household expenditure on food, education, health, and entertainment, with coefficients of 0.154, 0.124, 0.111, and 0.105, respectively.
- In more economically developed areas, the coefficients of mobile payment adoption on household expenditure are larger, indicating a stronger impact of mobile payment adoption on household consumption.

The results of the mediation analysis show that the positive relationship between mobile payment adoption and household consumption is partially mediated by increased access to credit.

These statistics provide empirical evidence for the relationship between mobile payment adoption and rural household consumption in China and suggest that mobile payment adoption can have a positive impact on household consumption patterns.

The authors suggest that the positive impact of mobile payment adoption on rural household consumption may be due to increased convenience, lower transaction costs, and easier access to credit. They also argue that the findings have important implications for policymakers who are looking to promote economic development and reduce poverty in rural areas.

In 2018, another TechFin, GrabPay, based in Singapore, emerged as a significant player in the digital payments market in the Philippines. Grab is a start-up that offers ride-hailing and delivery services through a mobile app and operates in various countries in Southeast Asia. With close to 70 million app downloads by 2017, Grab leveraged its significant user base to introduce new financial products using its GrabPay mobile wallet. In 2018, GrabPay obtained its e-money license from the BSP to enable payments through QR codes or peer-to-peer transfers, marking a significant milestone for the company's entry into the Philippines. Grab plans to expand its digital payments offerings in the Philippines in 2019, and it recently formed a partnership with SM Investments Corp (SM), a prominent retail conglomerate with over 70 malls and 2,000 stores across the Philippines. (Schellhase & Garcia, 2019)

GrabPay allows users to make payments for a variety of services, including transportation, food delivery, and online shopping. In addition to its core payment services, GrabPay also offers financial services such as loans and insurance, which are designed to be accessible to users who may not have access to traditional financial services.

One of the key features of GrabPay is its use of GrabRewards, a loyalty program that rewards users for making payments and using other Grab services. This incentivizes users to use GrabPay for a wider range of services, which helps to promote financial inclusion by providing users with more opportunities to access and use digital financial services.

GrabPay is used in 8 countries in Southeast Asia: Singapore, Malaysia, Indonesia, Philippines, Thailand, Vietnam, Burma and Cambodia. In 2021, Grab announced that it had issued more than 6 million physical and virtual payment cards to GrabPay users across the region. It also announced that it has processed more than 4 billion payment transactions across its entire ecosystem, including not only GrabPay but also the company's delivery and transportation services.

GrabPay is expected to increase digital financial inclusion in Southeast Asia where an estimated 73 percent of the population does not have a bank account. This will enable people without bank accounts to make purchases. According to a 2019 survey, alternative data such as e-

commerce transactions can be used to prove creditworthiness for unbanked borrowers. A proof of concept is Grab's PayLater service, which allows loyal app users to buy goods on credit.
Commercial banks are aware of the growth potential of digital banking and have launched their e-wallets or partnered with super app companies. In Thailand, Kasikorn Bank partnered with Grab to launch an e-wallet called GrabPay by KBank, specifically for unbanked customers. Similarly, Bank Jago, one of Indonesia's most valuable listed banks, received investments from Gojek and is planning to partner with the company to integrate its financial services on the platform.

7. Conclusion

Fintech has the power to provide individuals and businesses with access to financial services that were previously out of reach. However, some challenges must be addressed to ensure that fintech's positive impacts are realized.
Following the PRISMA method, this efficient systematic review aims to identify the key determinants of fintech's impact on financial inclusion in emerging countries. The study aims to capture relevant research published offering insights into the dynamics of integrating financial technologies and their implications for promoting financial inclusion. Generally, we conducted a dual analysis: a bibliometric analysis and a thematic analysis based on references extracted from the Scopus database. The first extraction identified 262 references, with which we concluded that the topic of the impact of fintech on financial inclusion has become a trend after the COVID-19 crisis. After eliminating the references according to the PRISMA method, we retained only 15 references that address this topic for the case of developing countries to assist us in our future work on the case of Morocco.
The growing of research in the finTech and financial inclusion reflects the inherent complexity of the subject and underscores the need for cross-disciplinary collaboration. This evolution supports the increasing relevance of finTech across diverse academic disciplines, while also encapsulates the multifaceted interactions between innovation, society, and financial systems.
In conclusion, the study offers a useful overview of the current state of research within the in the fields of financial inclusion and finTech. With the growing popularity of fintech, policymakers and regulators must be aware of the risks and challenges that come with it. This includes concerns such as data privacy, cybersecurity, and the potential for market monopolies. By addressing these challenges, fintech can play a crucial role in driving financial inclusion and economic growth. A balanced approach to fintech that considers its potential benefits and risks can ensure that fintech promotes financial inclusion sustainably and equitably.

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