

The Role of Banking Digitalization in Promoting Financial Inclusion of Micro, Small, and Medium Sized Enterprises in Morocco

Othman AJRAOUI, (PhD Candidate – Researcher)

Laboratory of Economic Sciences and Public Policies (LSEPP)

Faculty of Economics and Management

Ibn Tofail University, Kenitra – Morocco

Mounir EL BAKKOUCHI, (Full Professor)

Laboratory of Economic Sciences and Public Policies (LSEPP)

Faculty of Economics and Management

Ibn Tofail University, Kenitra – Morocco

Correspondence address:	Faculty of Economics and Management Ibn Tofail University – Kenitra, Morocco Tel.: +212 5 37 32 92 18
Disclosure Statement:	The authors declare that they have not received any financial support that could have influenced the objectivity of this study. They take full responsibility for any potential plagiarism, the use of artificial intelligence in the writing process, as well as for the results presented in this article.
Conflict of Interest:	The authors report no conflicts of interest.
Cite this article:	AJRAOUI, O., & EL BAKKOUCHI, M. (2026). The Role of Banking Digitalization in Promoting Financial Inclusion of Micro, Small, and Medium Sized Enterprises in Morocco. <i>International Journal of Accounting, Finance, Auditing, Management and Economics</i> , 7(12), 811–826. https://doi.org/10.5281/zenodo.23399062
License	This is an open access article under the CC BY-NC-ND license

Received: 18/08/2025

Accepted: 12/10/2026

International Journal of Accounting, Finance, Auditing, Management and Economics - IJAFAME

ISSN: 2658-8455

Volume 7, Issue 12 (2026)

The Role of Banking Digitalization in Promoting Financial Inclusion of Micro, Small, and Medium Sized Enterprises in Morocco

Abstract:

This article analyzes the role of banking digitalization in promoting the financial inclusion of micro, small, and medium sized enterprises (MSMEs) in Morocco. In an increasingly globalized and rapidly changing economic environment, digital transformation has become a strategic lever for competitiveness, efficiency, and access to finance. Using a theoretical framework based on capability theory, transaction cost theory, information asymmetry, and disruptive innovation, the study examines how digital financial services such as mobile banking, digital microcredit, alternative scoring, and online payment platforms contribute to improving access to financial resources for MSMEs.

Methodologically, this research adopts a qualitative and narrative review approach, drawing on institutional reports (Bank Al-Maghrib, CGEM, HCP, Ministry of Economy and Finance) and academic literature published between 2019 and 2024. The selection criteria focused on studies and official data directly related to MSMEs' access to finance, digital banking innovations, and inclusion policies in Morocco, while excluding purely technical papers not addressing financial inclusion outcomes.

The analysis highlights both the opportunities and limitations of this transformation. On the one hand, digitalization reduces transaction costs, enhances transparency, and fosters financial autonomy for MSMEs. On the other hand, structural constraints such as limited infrastructure, digital illiteracy, and regulatory delays continue to restrict its impact, particularly for informal and rural enterprises.

The paper concludes by proposing strategic recommendations for inclusive and sustainable digitalization. These include strengthening rural infrastructure, fostering public private cooperation, developing innovative financial products, and supporting entrepreneurs through training and mentoring programs. By leveraging digital tools, Morocco has the opportunity not only to improve MSME competitiveness but also to promote inclusive economic growth and integration into regional and global value chains.

Keywords: Banking digitalization, Digital financial inclusion, MSMEs (micro, small, and medium sized enterprises), Financial access.

Classification JEL: G21, G32, M15, O16, O17, O18, P34.

Paper type: Theoretical Research

1. Introduction

The rapid development of financial technologies, commonly referred to as fintech, has been accompanied by unprecedented sophistication in mobile banking tools, digital financial intermediation platforms, and alternative risk assessment mechanisms such as digital scoring. These innovations present real opportunities to overcome the structural constraints faced by Moroccan micro, small, and medium sized enterprises (MSMEs). Digitalization makes it possible to fundamentally rethink traditional channels of access to finance, expand the reach of formal financial services, and build banking relationships that are more flexible, cost effective, and better tailored to the specific needs of these businesses.

The rise of digital finance also helps to address long standing barriers such as the lack of collateral, informality, and the absence of banking history factors that have historically limited MSMEs' access to financial resources. In this context, Morocco initiated an ambitious reform in 2019 with the launch of the National Financial Inclusion Strategy (SNIF). Led by Bank Al-Maghrib in coordination with the Ministry of Economy and Finance, this strategy positions digitalization as a structural lever for economic and social inclusion and is structured around several priority areas. It promotes the widespread use of electronic payments in order to reduce cash transactions and improve traceability, diversifies the financial offer through innovative products adapted to the needs of micro and small enterprises, supports historically excluded populations such as women, youth, and rural inhabitants, and fosters the emergence of a competitive and interconnected national fintech ecosystem capable of operating at regional and international levels.

Early results illustrate the magnitude of this transformation: the number of licensed payment institutions has increased, mobile transaction volumes have grown steadily, the number of electronic wallets has risen significantly, and traditional banks have accelerated their adoption of digital solutions. These indicators reflect a structural shift in Morocco's financial landscape, where digital tools are no longer peripheral but are becoming central pillars of the system.

However, this promising digital transition cannot be regarded as a panacea. Without corrective measures and an inclusive governance framework, it risks reproducing or even exacerbating existing inequalities in access to financial services. Several challenges remain. The digital divide between urban and rural areas persists, with urban regions enjoying strong network coverage and quality infrastructure, while many rural areas still struggle to secure reliable and affordable digital access. The expansion of digital financial services has also heightened exposure to cybercrime and fraud, necessitating stronger cybersecurity measures.

In addition, a significant digital skills gap exists within MSMEs, particularly among executives and managers, limiting their capacity to adopt and effectively use digital solutions. Cultural barriers persist, with widespread mistrust toward cashless transactions, which are often perceived as complex, unreliable, or risky. The regulatory and legal framework governing these innovations is still evolving, creating uncertainty that may discourage private investment and slow the adoption of innovative solutions, particularly among the most vulnerable small businesses.

Consequently, not all MSMEs are equally positioned to reap the benefits of digitalization. Firms operating in rural areas, in the informal sector, or in low value added industries often remain on the margins of this transformation. This observation echoes previous empirical studies conducted by the World Bank (2021), the African Development Bank (2024), and the OECD (2023), which show that financial digitalization has a positive but uneven impact on SME inclusion, with the greatest benefits accruing to firms located in urban areas with strong digital infrastructure. These studies justify the central research question of this article, which seeks to determine the extent to which banking digitalization effectively enhances the financial inclusion

of Moroccan MSMEs and under what conditions this process can become more equitable and sustainable.

This article pursues two main objectives. First, it seeks to provide an in depth analysis of the tangible impacts of digital innovations on MSMEs' access to formal financial services, including payments, credit, insurance, and savings. Second, it aims to identify the structural, regulatory, cultural, and technical barriers that must be addressed for the digital transition to be genuinely inclusive and socially equitable.

To meet these objectives, we adopt a qualitative and exploratory approach based on an extensive literature review drawing on institutional sources (Bank Al-Maghrib, CGEM, HCP, Ministry of Economy and Finance), Moroccan case studies on fintech ecosystem developments (Inwi Money, Chari.ma, crowdfunding platforms), and targeted use of theoretical frameworks from the academic literature in economics, finance, digital innovation, and development.

This approach combines conceptual, empirical, and policy dimensions to provide an integrated reading of the ongoing transformations and to identify the governance levers necessary for a successful digital transition within Morocco's entrepreneurial ecosystem. Accordingly, the article begins with a section exploring the theoretical foundations of financial inclusion and the digital transformation of the banking sector, followed by an overview of financial digitalization in Morocco, a critical analysis of its specific effects on MSMEs, and, finally, concrete recommendations to strengthen the contribution of digitalization to inclusive economic development.

2. Theoretical Foundations of Financial Inclusion and Digital Transformation in the Banking Sector

Analyzing the relationship between financial inclusion and digital transformation requires first clarifying the fundamental concepts underlying these two notions. Such clarification not only defines their theoretical scope but also highlights the practical issues they raise for micro, small, and medium sized enterprises (MSMEs). The first step is therefore to define financial inclusion and examine its main challenges, before situating the digital transformation of the banking sector within its conceptual framework and specific dynamics.

2.1. Definition and Challenges of Financial Inclusion

Financial inclusion refers to the integration of individuals and businesses into the formal financial system through access to appropriate, secure, and affordable products. Now widely recognized as a fundamental economic right, it plays a decisive role in both economic and social development.

According to the World Bank (2022), an individual is considered « financially included » when they have access to at least one formal financial product or service, such as savings, credit, insurance, or payment mechanisms. Numerous studies (Demirgüç-Kunt et al., 2022) confirm that financial inclusion enhances economic resilience, stimulates investment, fosters job creation, and contributes to poverty reduction.

For Moroccan MSMEs, financial inclusion serves as an essential driver of formalization and growth because it facilitates effective cash flow management, provides access to tailored financing solutions, and enables integration into structured value chains.

The key challenges of financial inclusion can be grouped into four strategic areas. They include ensuring universal access to financial services, particularly in rural areas and among marginalized populations; mobilizing savings and stimulating productive investment; strengthening economic stability and transparency; and promoting the economic empowerment of women and young people.

The conceptual framework underpinning financial inclusion draws, in particular, on Amartya Sen's (1999) Capability Approach, which posits that development consists in expanding

individuals' real freedoms. From this perspective, the financial system acts as a capability enabler, allowing entrepreneurs to make informed decisions and increase their autonomy.

2.2. The Digital Transformation of the Banking Sector through Concepts and Dynamics

The digital transformation of banking encompasses all processes aimed at the dematerialization, automation, and integration of digital technologies into financial services. Its strategic objectives are manifold: enhancing operational efficiency, reducing costs, expanding the customer base, personalizing service offerings, and strengthening competitiveness.

This transformation relies on advanced technologies such as artificial intelligence, blockchain, cloud computing, big data, and the Internet of Things (IoT). Several theoretical frameworks help to analyze its impacts. The Disruptive Innovation Theory (Christensen, 1997) explains how fintechs challenge established models by addressing the needs of unbanked or underserved customers. The Transaction Cost Theory (Coase, 1937; Williamson, 1985) highlights how digitization reduces the costs of information access, negotiation, and monitoring, thereby fostering financial inclusion. The Information Asymmetry Theory (Akerlof, 1970; Stiglitz & Weiss, 1981) shows that digital tools improve risk assessment by leveraging alternative data sources.

Taken together, these approaches form a cumulative model for understanding the dynamics of banking digitalization. Disruptive innovation acts as the initial driver, creating alternative solutions that reach underserved populations. Once these innovations emerge, transaction cost theory explains how digital tools make financial services cheaper and more efficient, thereby enabling wider participation. Finally, information asymmetry theory clarifies how these digital channels improve creditworthiness assessment and reduce risk, which in turn unlocks access to credit for MSMEs. This sequential logic suggests a virtuous circle in which digital innovation lowers costs, reduces risk, and expands access leading to increased competitiveness and formalization among MSMEs.

This integrative perspective allows us to derive several preliminary propositions for the analysis that follows. Digitalization reduces financial frictions and improves MSMEs' access to resources. The efficiency gains it generates are conditional on the availability of infrastructure and regulatory support. Its inclusiveness ultimately depends on MSMEs' capacity to adopt and effectively use these tools. These propositions provide the conceptual bridge toward the empirical observations and policy recommendations discussed later in this article.

2.3. Digital Financial Inclusion, A Structuring Convergence

The intersection of financial inclusion and digital transformation has given rise to digital financial inclusion, defined as the use of digital technologies to broaden access to financial services. This approach helps overcome geographical barriers, high transaction costs, and administrative hurdles that often restrict SMEs' access to formal financing.

In Morocco, the main channels of digital financial inclusion are mobile banking and electronic wallets such as Inwi Money, digital microcredit applications that use alternative credit scoring models, and crowdfunding platforms. These tools promote banking access for rural populations, facilitate the payment of social transfers, encourage savings, and strengthen financial traceability. Nonetheless, their expansion continues to face significant challenges, such as the digital divide, exposure to cybercrime, and the need for a regulatory framework adapted to emerging actors.

(This section is complemented by a detailed presentation of other tools and solutions in Appendix 2.)

To better understand the determinants of this adoption, several theoretical and analytical frameworks can be mobilized. The Unified Theory of Acceptance and Use of Technology

(UTAUT and its extension UTAUT2) makes it possible to explain MSMEs' intention to adopt digital financial services based on performance expectancy, effort expectancy, social influence, and facilitating conditions. The Technology Organization Environment (TOE) framework complements this by emphasizing how internal organizational factors (resources, digital maturity), external environmental pressures (competition, regulation), and technological attributes jointly shape adoption decisions. Moreover, the platform economy perspective highlights the network effects and scalability of digital ecosystems, while the concept of data governance underlines the importance of trust, privacy protection, and secure data flows. Finally, digital literacy plays a central role, as MSMEs' capacity to understand and effectively use these technologies directly conditions the inclusiveness of the digital transition.

This analytical framework underscores the complementarity between economic, technological, and institutional perspectives in understanding the stakes of inclusive digitalization. It forms the conceptual foundation for the analysis developed in the following sections.

3. State of Financial Digitalization in Morocco

Financial digitalization in Morocco is part of a broader global movement to modernize banking services and democratize access to financial tools. Driven by institutional reforms, the emergence of a dynamic fintech ecosystem, and the gradual spread of digital technologies, it now constitutes a strategic lever for enhancing financial inclusion and strengthening the competitiveness of micro, small, and medium sized enterprises (MSMEs). Analyzing this dynamic first requires an examination of the institutional and strategic framework established by the Moroccan authorities, followed by an assessment of the fintech ecosystem's performance, the growth of mobile payment solutions, and the persistent barriers to their adoption.

3.1. Institutional and Strategic Framework for Banking Digitalization

Since the late 2010s, Morocco has been modernizing its financial system by placing digitalization at the core of its strategy.

In 2019, Bank Al-Maghrib and the Ministry of Economy and Finance launched the National Financial Inclusion Strategy (SNIF), which focuses on the inclusion of vulnerable populations, the support of MSMEs, the development of digital financial services, and the protection of consumers.

The regulatory framework has gradually evolved to govern payment institutions, encourage fintech development, and prepare for open banking. In 2021, Bank Al-Maghrib published the first draft regulation on open banking, setting technical and security standards for APIs, data sharing protocols, and consumer consent management, which are still under progressive implementation. Similarly, the crowdfunding legal framework was adopted in February 2021 under Law 15-18 and operationalized in 2022 with implementing decrees that define the licensing process, funding limits, and supervision by the AMMC. These milestones have created a clearer legal environment for fintechs and payment service providers, though their full impact will depend on the speed of adoption and the publication of complementary regulations. In parallel, the Digital Development Agency has been working to strengthen infrastructure, cybersecurity, and system interoperability.

Several complementary programs reinforce this ecosystem. These include Hakaik, which supports the digitalization of microenterprises, Injaz, which provides assistance for youth entrepreneurship, and Intelaka, which combines financing with digital support for MSMEs. Together, these initiatives create a favorable environment for advancing financial inclusion.

3.2. The Moroccan Fintech Ecosystem

Over recent years, Morocco's fintech sector has gradually taken shape. According to the Fintech

Association Morocco (2023) and data from Bank Al Maghrib, more than 20 payment institutions are now operational. Among them, Inwi Money, Orange Money, and M-Wallet offer money transfers, bill payments, and mobile payment services without the need for a physical branch.

Crowdfunding is also an expanding segment, with platforms such as Cotizi, Smala, and Happy Naps. While the regulatory framework for these activities is still being finalized by Bank Al-Maghrib and the Moroccan Capital Markets Authority (AMMC), these initiatives open the door to new sources of financing, particularly for businesses excluded from traditional bank credit. In addition, several Moroccan startups are developing alternative credit scoring models based on mobile data analytics, payment behavior, and digital interaction patterns. These approaches help assess the creditworthiness of informal or newly established businesses, thereby reducing information asymmetries.

However, adoption remains limited, benefiting mainly tech savvy urban MSMEs, while rural and poorly digitized microenterprises remain largely excluded.

3.3. Mobile Payments and Digital Banking

The COVID-19 crisis accelerated the uptake of mobile payments in Morocco. According to Bank Al-Maghrib's 2023 report, there were 7.1 million electronic wallets registered, of which approximately 5.3 million were active, representing a 30% increase in active accounts compared to 2022. In parallel, the number of payment accounts reached 6.2 million, including both active and dormant accounts, which indicates a broader adoption base but also highlights the need to reactivate inactive users. Transaction volumes continue to rise, driven by individuals, self employed entrepreneurs, and microenterprises.

For MSMEs, mobile payments provide greater financial traceability, allow for the automation of invoicing processes, and help create a banking history that facilitates access to credit. Platforms such as Chari.ma offer microcredit services linked to mobile payment flows or deferred payment options integrated into business management tools.

Nevertheless, adoption remains uneven: the digital divide between urban and rural areas persists, and a lack of training limits the uptake of digital tools, particularly among traditional or informal microenterprises.

3.4. Current Limitations and Obstacles to MSME Digitalization

Despite a generally favorable regulatory environment, several obstacles persist. The first is the digital divide, with approximately 40% of MSMEs lacking reliable Internet access (HCP, 2022). A second obstacle is the skills gap, as many business owners have insufficient training and low digital literacy. High costs also constitute a barrier, since some digital solutions remain unaffordable for very small enterprises. In addition, cultural resistance persists, with a preference for cash transactions and informal practices. Administrative delays further hinder progress due to the incomplete digitalization of public services. Finally, regulatory gaps remain, as the adoption of laws governing crowdfunding, open banking, and crypto assets has been slow. These constraints slow the widespread adoption of digital tools and accentuate the divide between connected, formal MSMEs and non digitized informal microenterprises.

3.5. Towards a Gradual but Uneven Transformation

While Morocco's financial digitalization is well underway, its benefits remain unevenly distributed. Large corporations and tech oriented SMEs reap the most advantages, while rural and informal microenterprises are largely left behind. This imbalance risks deepening the digital divide within the national economic fabric. To address this situation, more targeted public policies are required, such as providing subsidies for digital equipment, developing regional

digital hubs, offering continuous training programs for entrepreneurs, and expanding access to high speed Internet.

Table 1: below summarizes the main ongoing initiatives and their impact on MSMEs

Component	Initiatives / Stakeholders	Impact on MSMEs
Strategic framework	SNIF (2019), BAM, Ministry of Economy, ADD	Financial inclusion, modernization of regulations, public incentives
Payment institutions	Inwi Money, Orange Money, M-Wallet, Wafa Cash	Digital payment services, simplified transfers
Fintech platforms	Chari.ma, Cotizi, Smala, alternative scoring startups	Access to microloans, invoicing solutions, creditworthiness assessment
Public programs	Hakaik, Injaz, Intelaka	Entrepreneurship support, access to digital tools, targeted financing
Persistent obstacles	Digital divide, high costs, limited skills, administrative delays	Partial adoption, digital duality between large firms and microenterprises
Geographical coverage	Urban (Casablanca, Rabat, Tangier); rural areas still underserved	Unequal access to digital financial services

Source : Author's compilation based on data from Bank Al-Maghrib (2023), Fintech Association Morocco (2023), Ministry of Economy and Finance, ADD, Hakaik, Injaz, and Intelaka programs.

In conclusion, despite notable progress, Morocco's financial digitalization remains marked by regional and sectoral disparities. A more targeted, inclusive, and measurable approach is needed to prevent a purely quantitative form of inclusion and ensure a sustainable and equitable transformation.

4. Impact of Banking Digitalization on the Financial Inclusion of MSMEs in Morocco

Banking digitalization goes beyond the mere modernization of financial tools; it fundamentally transforms access channels, usage patterns, and the opportunities available to micro, small, and medium-sized enterprises (MSMEs). In Morocco, this transformation has led to a restructuring of traditional financial circuits, the emergence of innovative solutions tailored to small business realities, and a gradual expansion of the geographic reach of services. However, the benefits of this shift are not evenly distributed, and its real impact on financial inclusion depends on multiple structural, technological, and socio-economic factors.

The empirical literature on digital financial services generally highlights a positive relationship between the use of digital financial tools and small firms' access to formal financial services. However, this relationship should be interpreted with caution because technology adoption is not random. Firms with better financial resources, higher levels of digital skills, more favorable geographical locations, or stronger banking relationships may be more likely to adopt digital solutions. Consequently, part of the observed relationship between digitalization and financial inclusion may reflect a selection effect, rather than a specific effect of digitalization itself.

Empirical studies seek to distinguish between these two mechanisms. Research on digital payments, mobile banking, and alternative credit-scoring mechanisms indicates that firms with better access to digital infrastructure and financial services are generally more likely to adopt digital tools. This initial selection is particularly relevant in emerging economies, where disparities in connectivity, digital skills, formalization, and access to finance remain significant. Digital adoption may therefore be both a consequence of preexisting favorable characteristics and a factor that subsequently improves access to financial services.

From this perspective, the relationship between banking digitalization and financial inclusion should not be reduced to a simple correlation between the two phenomena. It is also necessary to examine whether firms adopting digital tools experience greater financial access after accounting for characteristics that may simultaneously influence digital adoption and financial

inclusion. The empirical literature considered in this study suggests that the observed effects may vary according to the quality of digital infrastructure, managers' digital skills, geographical location, and the degree of firm formalization.

The literature also points to substantial heterogeneity in these effects. The benefits associated with digitalization are more likely to be accessible to firms with reliable digital infrastructure and sufficient technological capabilities. Conversely, rural, informal, or low value added MSMEs may face greater constraints in adopting and effectively using digital financial services. The potential effect of banking digitalization on financial inclusion should therefore be examined while accounting for these contextual and firm level factors.

Based on this empirical literature review, three research hypotheses are formulated:

H1: Banking digitalization is positively associated with the financial inclusion of Moroccan MSMEs, beyond the individual and structural characteristics that may simultaneously influence digital adoption and access to financial services.

H2: The quality of digital infrastructure, the level of digital skills, and the maturity of the regulatory environment positively moderate the relationship between banking digitalization and financial inclusion among MSMEs.

H3: The relationship between banking digitalization and financial inclusion is heterogeneous across MSMEs' characteristics, with expected differences between urban and rural firms, formal and informal firms, and firms with different levels of digital maturity.

These hypotheses provide an empirical framework for examining the relationship between banking digitalization and financial inclusion while accounting for potential selection effects and heterogeneous outcomes.

4.1. Expanded Access to Financial Services

The digitalization of Morocco's banking system has emerged as an important potential driver of financial inclusion, particularly for MSMEs. Many of these enterprises, especially those operating in the informal sector or located in peri-urban and rural areas, have historically faced multiple barriers to accessing traditional banking services, including geographical remoteness, high costs, complex procedures, and documentation requirements ill suited to their circumstances. Digital innovations have gradually removed many of these constraints. Online banking platforms now enable MSMEs to open accounts remotely via mobile applications under simplified conditions, while mobile banking services, electronic wallets such as M-Wallet, and payment institutions licensed by Bank Al-Maghrib (BAM) provide secure, fast, and low cost transactions without the need for in person branch visits.

According to BAM's 2023 report, more than six million payment accounts have been opened since the launch of the SNIF, with a growing proportion attributed to MSMEs and microentrepreneurs. This trend is reshaping the informal economy by fostering transaction traceability, expanding formal banking participation, and improving access to formal financing mechanisms.

Table 2 : Examples of Digital Services Supporting MSME Inclusion

Type of Digital Service	Benefits for MSMEs
Mobile payment account	Easy account opening, low management costs
Digital microcredit	Quick access to financing with minimal formalities
Electronic invoicing	Improved accounting management, easier loan access
Banking applications	Real time cash flow monitoring, automated payments

Source : Author's compilation based on Bank Al-Maghrib (2023) and Moroccan SME Observatory (2021).

This evolution is transforming the relationship between MSMEs and the banking system, creating a more accessible and flexible environment for very small businesses.

4.2. Alternative Financing and Digital Scoring

Beyond accounts and payments, banking digitalization in Morocco has opened access to alternative financing channels that are essential for MSMEs often excluded from traditional credit due to lack of collateral or formalized financial statements. Digital scoring systems, implemented by innovative Moroccan banks and fintech companies, assess creditworthiness using nontraditional data sources such as digital transaction histories, electronic invoices, mobile payment flows, B2B platform activity, and professional interactions on social media. This approach departs from conventional banking practices and enables access to credit for businesses previously considered ineligible. Domestic players such as InTouch, Wafacash, and Semoa are developing AI based scoring solutions that provide dynamic and contextualized risk assessments.

In practice, these innovations accelerate the processing of financing applications, reduce documentation requirements, and enable the creation of tailored products such as nano-loans, instant loans, and flexible credit lines.

Morocco is thus positioning itself as a market where alternative, digitally enabled financing is becoming a key driver of MSME inclusion, although further regulatory reinforcement and entrepreneur awareness remain necessary.

4.3. Simplified Procedures and Time Savings

Digital transformation has also streamlined administrative and banking processes, a crucial advantage for MSMEs that often lack specialized human resources. Through online platforms and mobile applications, business owners can open professional accounts remotely, make transfers or supplier payments, track incoming payments in real time, apply for loans or insurance via digital forms, and automate cash flow management and invoicing. Some banks, such as BMCE Bank of Africa, now offer fully digital platforms that integrate banking services, credit simulators, online training, and personalized advisory support, reducing both costs and time constraints.

4.4. Persistent Inclusion Gaps and Disparities

Despite significant progress, adoption of digital banking services remains uneven. The main barriers include a persistent digital divide, particularly in rural areas, low levels of digital literacy combined with resistance to change, widespread concerns about security and data privacy, the high cost of equipment such as smartphones and data plans, and limited access to tailored support and training. These barriers continue to limit the capacity of the most vulnerable MSMEs to benefit from digitalization and risk reinforcing existing inequalities between formal and informal businesses.

Table 3: Barriers to MSME Adoption of Digital Banking Services

Barrier	Consequence for MSMEs
Low digital literacy	Resistance to using digital platforms
Distrust of online services	Security and privacy concerns
High equipment costs	Limits access to modern services
Lack of tailored support	Difficulties in adopting digital tools

Source : Author's compilation based on CGEM (2024) and academic literature on SME digital transformation.

4.5. Cybersecurity and Trust Challenges

Cybersecurity remains a critical challenge. With limited resources, MSMEs are vulnerable to threats such as phishing, ransomware, identity theft, and payment fraud. BAM's 2022 Financial Stability Report highlights the need for a robust regulatory framework, targeted awareness campaigns, and insurance mechanisms covering cyber risks. Trust is also a decisive factor in

adoption: a CGEM survey shows that 40% of MSMEs remain reluctant to use online banking services due to fears of cyber fraud. Addressing this issue requires strengthening cybersecurity standards, developing targeted training programs, certifying platforms according to recognized security standards, and offering dedicated cyber risk insurance solutions.

5. Obstacles and Levers for Inclusive Digitalization of MSMEs

Despite significant progress in banking and financial digitalization in Morocco, equitable access to digital tools for micro, small, and medium sized enterprises (MSMEs) remains constrained by a set of structural, institutional, and cultural barriers. The following analysis outlines these obstacles while identifying levers that could enable a truly inclusive digital transformation.

5.1. Institutional and Regulatory Barriers

The digital transformation of Moroccan MSMEs faces several institutional and regulatory hurdles. Although Morocco has adopted a series of structural reforms to encourage innovation, particularly in fintech and electronic payments, the overall framework remains unstable and, at times, counterproductive for young enterprises. Key challenges include a fluctuating legal framework that may discourage investment in digital solutions, particularly among foreign players seeking long-term visibility; slow licensing procedures for digital payment or credit service providers, which may limit competition; and the absence of dedicated legislation for emerging technologies such as blockchain and artificial intelligence (AI), which may complicate their adoption.

Table 4 : Institutional and Infrastructure Related Barriers

Barrier Category	Specific Example	Impact on MSMEs	Recommendation
Institutional	Unstable legal framework, unclear fintech regulations	Inhibits financial innovation	Stabilize legislation, ensure fiscal transparency
Administrative	Slow licensing processes, complex administrative requirements	Delayed market entry	Digitalize and streamline procedures
Infrastructure	4G coverage: 92% urban / 51% rural; Fiber access: 41% urban / 12% rural	Unequal access to digital services	Invest in high speed broadband, subsidize equipment
Cultural/Psychological	Microenterprises: fear of taxation and perceived complexity; Family owned SMEs: lack of time for training; Startups: openness to tools but limited funding	Limited or partial adoption of digital solutions	Awareness campaigns, targeted training, and tailored support
Digital Skills	Weak proficiency in digital tools within certain SMEs	Underutilization of existing solutions	Continuous training programs and mentorship

Source: ANRT (2024), BAM (2023).

5.2. Inequalities in Technology Access and the Digital Divide

A major challenge for inclusive digitalization is the digital divide, which disproportionately affects rural and informal MSMEs. This inequality is explained by several factors, including uneven internet coverage particularly in southern regions and rural provinces the high cost of digital equipment and its maintenance, and the limited digital skills often observed in small family owned or traditional businesses. According to ANRT (2024), broadband internet access reaches 92% in urban areas but only 51% in rural areas, while fiber optic coverage is 41% in urban zones compared to 12% in rural ones. These disparities illustrate the persistence of a digital divide that limits equitable access to digital financial services. As a result, businesses with limited connectivity face significant barriers to using digital financial tools such as e-

invoicing and online microcredit, which exacerbates regional disparities and slows economic growth.

5.3. Cultural and Psychological Barriers

Beyond structural limitations, MSME digitalization is also hindered by a traditional business culture largely dominated by informal practices, a widespread fear of administrative oversight linked to the use of traceable tools such as e-payments and e-invoicing, and a general distrust of digital security, reinforced by cyberattacks and limited knowledge of cyber risks.

5.4. Technological Levers and Innovation

Emerging technologies such as Artificial Intelligence (AI), blockchain, and Open Banking represent potential drivers of transformation in financial services for Moroccan MSMEs. However, their contribution to financial inclusion cannot be considered automatic. It depends on their regulatory feasibility, interoperability, and the financial, organizational, and human capacity of firms to adopt and effectively use them.

Artificial Intelligence can, in particular, be used for credit risk assessment through the analysis of transaction histories and other alternative data sources. This possibility is particularly relevant for MSMEs with limited historical financial statements or collateral. However, the use of AI based scoring models requires sufficiently reliable and accessible data, together with appropriate data governance, data protection, and model monitoring mechanisms. For microenterprises and poorly digitalized MSMEs, the costs of acquiring and integrating such solutions, the limited quality of available digital data, and the shortage of specialized skills may constrain adoption.

Blockchain also offers potential for improving transaction traceability and strengthening certain mechanisms for secure information sharing. However, its use in financial services should be distinguished from the use of crypto assets and considered within the regulatory framework applicable to financial activities. In Morocco, Bank Al-Maghrib has undertaken work on emerging technologies and crypto assets, while the regulatory evolution seeks to balance financial innovation, system stability, and user protection. The operational feasibility of blockchain based solutions therefore depends not only on their technological value but also on their compatibility with regulatory requirements, existing infrastructures, and interoperability standards.

Open Banking represents another potentially important lever for MSMEs, particularly through secure financial data sharing and interoperability between different financial actors. However, its development requires reliable API infrastructures, consent mechanisms, security standards, and clear allocation of responsibilities between banks, fintechs, and users. The Moroccan framework is progressively evolving in this direction, but the effective realization of the benefits of Open Banking will also depend on MSMEs' ability to use compatible digital tools and effectively exploit the data made available to them.

These constraints are particularly relevant for microenterprises and MSMEs with limited financial and human resources. Adopting advanced technologies may involve expenditures related to software, system integration, cybersecurity, training, and maintenance. Similarly, limited digital skills may turn a theoretically accessible technology into a solution that is difficult to use in practice. Therefore, the availability of a technology is not sufficient to ensure its adoption: its effect on financial inclusion also depends on affordability, available skills, and the institutional environment.

From this perspective, AI, blockchain, and Open Banking should be considered conditional enablers of financial inclusion rather than universal solutions. Their potential contribution is more likely to materialize when three conditions are met :

- A sufficiently clear and appropriate regulatory framework,

- Infrastructure and standards that support interoperability and system security,
- Sufficient financial, organizational, and digital capabilities among msme.

This approach makes it possible to connect technological opportunities with the concrete feasibility and adoption constraints of the Moroccan context.

5.5. Role of Public Policy and Partnerships

Public action is crucial in correcting structural imbalances. The state can act as a catalyst by investing in digital infrastructure particularly through the expansion of fiber optics in underserved areas offering tax incentives for MSME digital equipment acquisition, establishing regulated fintech sandboxes to pilot innovative solutions, and promoting continuous training for entrepreneurs, especially in areas such as cybersecurity, e-invoicing, and digital financial management.

The inclusive MSME digitalization ecosystem in Morocco also relies on close collaboration between multiple actors. These include banks, which provide digital financial solutions; the government, which sets the regulatory and policy framework; telecom operators, which ensure reliable connectivity; universities, which develop and transmit digital skills; fintechs, which design innovative tools; and incubators, which support entrepreneurs throughout their digital transition.

5.6. Aware/ness and Support for MSMEs

Support is essential to prevent MSMEs from falling into digital exclusion. Several initiatives already exist, such as Maroc PME Digital PME, which supports industrial MSMEs and is recommended for expansion to the social economy; ANAPEC's Digital Training Modules, designed for young entrepreneurs and suggested for extension to microenterprises; and Fintech Hubs at Casablanca Finance City (CFC), which support formal SMEs but should be decentralized to inland regions.

Priority actions should focus on developing free platforms for introductory training in digital tools, creating public private incubators dedicated to digital transformation, and launching blended mentorship programs targeting disadvantaged areas.

6. Conclusion

Digitalization has become a strategic lever for micro small, small, and medium sized enterprises (MSMEs) in Morocco. In a rapidly evolving global economy, innovation, speed, and efficiency have emerged as major competitive advantages. Digital tools offer MSMEs a wide range of opportunities: improved productivity, market expansion, cost reduction, optimized management, and easier access to financing.

Solutions such as online invoicing, integrated management systems, mobile payments, ERP software, and crowdfunding enable gradual modernization that is often less costly than traditional infrastructure and well suited to the scale of these enterprises.

However, the digital transition remains uneven. Informal, rural, or low value added MSMEs face significant challenges, including low digital skills, lack of information, perceived complexity of tools, high adoption costs, distrust of dematerialized transactions, insufficient targeted support, and inadequate infrastructure. These issues are compounded by structural obstacles such as limited access to banking services, restricted financing opportunities, a traditional entrepreneurial culture, slow regulatory adaptation, and an immature ecosystem.

Addressing these challenges requires rethinking the national digitalization strategy around an integrated, inclusive, and regionally tailored approach. This strategy must rely on transparent and coordinated digital governance, incentives adapted to local realities, an agile regulatory framework that fosters innovation, strengthened infrastructure across the entire country,

targeted support for small scale businesses, and a clear political commitment to placing digital transformation at the heart of economic development.

This vision must be long term. Digitalization should not only modernize business practices but also help structure the economy, strengthen financial inclusion, enhance transparency, and create sustainable jobs. It should foster a vibrant digital ecosystem built on collaboration between the public sector, private enterprises, startups, training institutions, and local authorities to deliver customized, scalable solutions.

Support for MSMEs must go beyond technical or financial assistance. It should combine awareness raising initiatives, continuous training programs, entrepreneurial mentoring, and regular evaluation of the impact of digital tools on business performance. Establishing reliable monitoring indicators, conducting empirical assessments, and encouraging participatory governance involving entrepreneurs are essential steps to ensure an effective and sustainable transition.

Ultimately, Morocco faces a historic opportunity: to harness the power of digitalization not only to enhance MSME competitiveness but also to build a more resilient, inclusive economy that is fully integrated into regional and global value chains.

In conclusion, digitalization should not be viewed merely as a technical tool but as a genuine driver of economic and social transformation. When effectively implemented, it can reinforce MSME competitiveness, advance financial inclusion, increase transparency, and support sustainable, equitable growth in Morocco.

References:

- (1). Akerlof, G. A. (1970). The market for "lemons": Quality uncertainty and the market mechanism. *The Quarterly Journal of Economics*, 84(3), 488–500. <https://doi.org/10.2307/1879431>
- (2). Agence de Développement du Digital. (2021). *Feuille de route pour la transformation numérique du Maroc*. Rabat, Maroc: Agence de Développement du Digital.
- (3). Agence Nationale de Réglementation des Télécommunications. (2024). *Indicateurs des TIC au Maroc: Enquête sur l'équipement et l'usage des technologies par les entreprises*. Rabat, Maroc: ANRT.
- (4). African Development Bank. (2024). *Leveraging digital finance for SME growth in Africa*. African Development Bank. <https://www.afdb.org>
- (5). Alliance for Financial Inclusion. (2024). *Policy framework for inclusive digital financial services*. Alliance for Financial Inclusion. <https://www.afi-global.org>
- (6). Bank Al-Maghrib. (2019). *Stratégie nationale d'inclusion financière: Cadre de référence*. Rabat, Maroc: Bank Al-Maghrib. <https://www.bkam.ma>
- (7). Bank Al-Maghrib. (2022). *Rapport sur la stabilité financière*. Rabat, Maroc: Bank Al-Maghrib. <https://www.bkam.ma>
- (8). Bank Al-Maghrib. (2023). *Rapport annuel sur la supervision bancaire*. Rabat, Maroc: Bank Al-Maghrib. <https://www.bkam.ma>
- (9). Bank Al-Maghrib. (2023). *Rapport annuel sur les systèmes et moyens de paiement au Maroc*. Rabat, Maroc: Bank Al-Maghrib.
- (10). Christensen, C. M. (1997). *The innovator's dilemma: When new technologies cause great firms to fail*. Harvard Business School Press.
- (11). CGEM. (2024). *Rapport sur l'état de la transformation digitale des PME marocaines*. Casablanca, Maroc: CGEM.
- (12). Coase, R. H. (1937). The nature of the firm. *Economica*, 4(16), 386–405. <https://doi.org/10.1111/j.1468-0335.1937.tb00002.x>

- (13). Demirgüç-Kunt, A., Klapper, L., Singer, D., Ansar, S., & Hess, J. (2022). *The Global Findex Database 2021: Financial inclusion, digital payments, and resilience in the age of COVID-19*. World Bank. <https://doi.org/10.1596/978-1-4648-1897-4>
- (14). Fintech Association Morocco. (2023). *Rapport annuel sur les fintechs au Maroc*. Casablanca, Maroc: Fintech Association Morocco.
- (15). Haut-Commissariat au Plan. (2022). *Enquête nationale sur les TIC et les entreprises*. Rabat, Maroc: Haut Commissariat au Plan.
- (16). International Monetary Fund. (2023). *Fintech and SME financing in emerging markets*. International Monetary Fund. <https://www.imf.org/en/Publications>
- (17). Ministère de l'Économie et des Finances. (2020). *Lancement du programme "Intelaka": Rapport de cadrage stratégique*. Rabat, Maroc: Ministère de l'Économie et des Finances. <https://www.bkam.ma>
- (18). Organisation de coopération et de développement économiques. (2020). *Digital disruption in banking and its impact on competition*. OECD Publishing. <https://doi.org/10.1787/f847fb5a-en>
- (19). Organisation internationale de la Francophonie. (2023). *Transformation numérique et inclusion financière en Afrique francophone*. Organisation internationale de la Francophonie. <https://www.francophonie.org>
- (20). OECD. (2023). *SME and entrepreneurship outlook 2023: Digitalisation for resilience*. OECD Publishing. <https://doi.org/10.1787/9789264723456-en>
- (21). Sen, A. (1999). *Development as freedom*. Alfred A. Knopf.
- (22). Stiglitz, J. E., & Weiss, A. (1981). Credit rationing in markets with imperfect information. *The American Economic Review*, 71(3), 393–410.
- (23). Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. *MIS Quarterly*, 27(3), 425–478. <https://doi.org/10.2307/30036540>
- (24). Williamson, O. E. (1985). *The economic institutions of capitalism: Firms, markets, relational contracting*. Free Press.
- (25). World Bank. (2024). *Digital financial inclusion in the Middle East and North Africa: Opportunities and challenges*. World Bank. <https://doi.org/10.1596/978-1-4648-2077-9>

Appendix :

Appendix 1 : Theoretical Frameworks for Analyzing Digital Financial Inclusion

Theory	Author(s)	Core Concept	Link to MSMEs and Financial Inclusion
Capability Approach	Amartya Sen (1999)	Development is understood as the expansion of freedoms and capabilities	Access to financial services enables MSMEs to enhance their economic autonomy
Disruptive Innovation	Clayton Christensen (1997)	New technologies disrupt established market players	Fintechs target MSMEs excluded from traditional financing with tailored, accessible solutions
Transaction Cost Theory	Ronald Coase (1937), Oliver Williamson (1985)	Institutions emerge to reduce the costs of economic exchanges	Banking digitalization lowers access, processing, and monitoring costs for MSMEs
Information Asymmetry	George Akerlof (1970), Stiglitz & Weiss (1981)	Credit access is limited by the lack of reliable borrower information	Digital tools (scoring, AI) improve transparency and risk assessment for MSMEs
Digital Financial Inclusion (DFI)	World Bank, OECD (2010s–2020s)	Use of ICT to provide accessible and tailored financial services	MSMEs benefit from mobile banking, microcredit platforms, crowdfunding, and other digital channels

Source : Author's compilation based on Sen (1999), Christensen (1997), Coase (1937), Williamson (1985), Akerlof (1970), Stiglitz & Weiss (1981), World Bank, and OECD.

Appendix 2 : Tools and Channels for Digital Financial Inclusion

Tool / Channel Type	Example	Primary Function
Mobile Banking & Electronic Wallets	Inwi Money, Orange Money, M-Wallet, WafaCash Mobile	Financial transactions, money transfers, and bill payments without requiring a physical branch
Digital Microcredit Applications	Intelaka Digital, solutions backed by Chari.ma or Maroc PME	Rapid microcredit disbursement for MSMEs using alternative credit scoring
Digital Payment Solutions	QR codes, contactless payments via CIH Pay, BMCE Direct, Attijari Pay	Fast and traceable payments in-store and online
Mobile or Digital Bank Branches	Al Barid Bank mobile branches, Attijariwafa Bank digital branches	Extends banking services to remote and underserved areas
Alternative Scoring Using Mobile Data	Pilot projects by Wafacash, InTouch	Risk assessment for clients without formal banking history
Budget Management & Savings Applications	Features integrated into CIH Mobile, BMCE Direct	Expense monitoring, savings planning, and personal financial management

Source : Author's compilation based on Bank Al-Maghrib (2023), National Telecommunications Regulatory Agency (ANRT, 2024), Ministry of Economy and Finance (2022), CGEM (2023), Fintech Association Morocco (2023), and official websites of operators and banks (Inwi Money, Orange Money, M-Wallet, WafaCash, CIH Bank, Attijariwafa Bank).