

International and Algerian Experiences in Financial Inclusion

التجارب الدولية والجزائرية في مجال الشمول المالي

Madouri Hadda¹

¹ University Centre Of Maghnia (Algeria), h.madouri@cu-maghnia.dz

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Abstract:

In this paper, the author examines financial inclusion in Algeria, particularly noting the evident reduction in formal financial account usage from 50.48% in 2014 to 35.3% in 2024. The reasons that contribute to the reduction include poorly developed banking systems, preference for cash transactions, low financial literacy levels, and cultural disapproval of interest-based finances. As a solution, the study proposes a dual strategy that involves the expansion of digital finance and agent banking along with creating an integrated Islamic banking system. It is a culturally relevant approach for establishing an inclusive financial sector within Algeria.

Keywords: Financial inclusion; Islamic finance; digital transformation; Financial literacy; Algeria.

JEL Classification Codes: G21, G23, O16, O33, Z12

ملخص:

تتناول هذه الورقة البحثية موضوع الشمول المالي في الجزائر، مع التركيز بشكل خاص على الانخفاض الملحوظ في استخدام الحسابات المالية الرسمية من 50.48% عام 2014 إلى 35.3% عام 2024. وتشمل الأسباب التي ساهمت في هذا الانخفاض ضعف الأنظمة المصرفية، وتفضيل المعاملات النقدية، وانخفاض مستوى الوعي المالي، والرفض الثقافي للتمويل القائم على الفائدة. وكحل لهذه المشكلة، تقترح الدراسة استراتيجية مزدوجة تتضمن توسيع نطاق التمويل الرقمي والخدمات المصرفية عبر الوكلاء، إلى جانب إنشاء نظام مصرفي إسلامي متكامل. ويُعد هذا النهج ملائماً ثقافياً لبناء قطاع مالي شامل في الجزائر.

كلمات مفتاحية: الشمول المالي، التمويل الإسلامي، التحول الرقمي، الثقافة المالية، الجزائر.

تصنيفات JEL : Z12، O33، O16، G23، G21.

Corresponding author: Madouri Hadda, e-mail: h.madouri@cu-maghnia.dz

1. INTRODUCTION

Financial inclusion has become a fundamental pillar of sustainable economic and social development, enabling individuals and institutions to access safe and affordable formal financial services — including payments, savings, credit, insurance, and transfers. International empirical evidence consistently demonstrates that broadening access to these services contributes to inclusive development, reduces social inequalities, and supports sustainable economic growth (Afonso & Blanco-Arana, 2024; Mwakalila & Kasongwa, 2024).

Algeria, however, represents a striking and paradoxical case in this regard. Despite being an upper-middle-income country endowed with considerable natural and human resources, it records one of the lowest financial inclusion rates in the Middle East and North Africa (MENA) region, with formal account ownership reaching only 35% of adults in 2024 — far below the global average of 83.3%, and even below Morocco (44.4%) and Egypt (43.1%) (World Bank Global Findex, 2025; Ghomari et al., 2022). This gap is driven by multiple structural factors: limited banking infrastructure, excessive reliance on cash, an underdeveloped digital payment ecosystem, low financial literacy (Benyoub & Boufelfel, 2023; Boutellaa et al., 2020), and religious reluctance toward interest-based financial products among a significant segment of the (Boussera, 2025; Hamadi et al., 2025).

In this context, two strategic pathways stand out as particularly promising: digital transformation and fintech on the one hand, and Sharia-compliant Islamic finance on the other. Yet few studies have combined both pathways within a unified analytical framework that accounts for the specificities of the Algerian context — a gap this paper seeks to address (Gallego-Losada et al., 2023; Sha'ban et al., 2024).

The central research problem is: To what extent can international experiences in digital transformation and Islamic finance serve as a strategic roadmap to overcome Algeria's persistent financial inclusion deficit, and what integrated policy framework would best respond to the country's structural, technological, and socio-cultural barriers?

This study pursues four main objectives:

- Analyzing the trajectory of financial inclusion in Algeria using Global Findex data from 2011 to 2024
- Identifying the main structural, technological, and socio-cultural obstacles to financial inclusion
- Drawing lessons from successful international models in digital and Islamic finance
- Formulating practical, evidence-based recommendations covering regulatory reform, digital investment, and expansion of Islamic financial products.

2. Theoretical and Conceptual Framework

2.1 Financial Inclusion: Definition and Dimensions

Globally, financial inclusion refers to the ability of individuals and organizations to use formal financial services, focusing on both affordability and quality (Gallego-Losada et al., 2023; Sha'ban et al., 2024). This concept is usually assessed using three main aspects, as defined by the World Bank and the Alliance for Financial Inclusion (AFI) (Desy Wulan et al., 2024; Mwakalila & Kasongwa, 2024):

- Access: The physical and digital availability of financial institutions and their different ways of providing services.
- This includes using services for various purposes, such as saving money, getting loans, making payments, and buying insurance.
- Service quality includes the inherent characteristics of the services provided, such as their relevance, transparency, and the protections offered to consumers.

2.2 Guiding Theoretical Frameworks

This investigation is fundamentally underpinned by three interconnected theoretical frameworks.

a. The supply-push versus demand-pull model serves as the primary framework for elucidating this subject matter. This model differentiates between supply-side constraints, encompassing factors like restricted branch networks, elevated transaction costs, and deficient infrastructure, and demand-side impediments, which encompass a lack of trust, financial illiteracy, and cultural resistance.

Algeria's problems are complex, requiring strategies that consider all aspects, rather than focusing on just one (Boutellaa et al., 2020; Benyoub & Boufelfel, 2023).

b. The Technology Acceptance Model (TAM), first proposed by (Davis, 1989) to explain how people adopt information systems in organizations, suggests that a person's intention to use a technology depends on two main cognitive factors. These are perceived usefulness, which is a user's assessment of how well the technology improves their performance, and perceived ease of use, which relates to how easy the technology is to use.

Subsequent adaptations of the model have integrated supplementary moderating variables (Rotinsulu et al., 2025; Shaikh et al., 2023), including social influence and facilitating conditions, thereby rendering TAM particularly applicable to the analysis of financial technology adoption within developing nations. In the Algerian context, TAM provides a compelling framework for elucidating the underutilization of digital banking applications, notwithstanding the proliferation of smartphone access and fundamental internet connectivity; this suggests that the obstacles encountered are as much perceptual and experiential as they are infrastructural (Maatallah, 2024; Mechroum & Benzara, 2024).

c. Maqasid al-Shariah Framework: This framework provides the theoretical foundation for Islamic finance as an inclusion tool rather than merely a religious alternative, linking Islamic financial products to the higher objectives of preserving wealth, life, and progeny — objectives directly relevant to inclusive development goals (Bousseta, 2025; Hidayat et al., 2023).

3. Methodology

This study adopts a Qualitative Comparative Analysis (QCA) approach, as originally systematized by (Ragin, 2009), who developed QCA as a methodological bridge between case-oriented and variable-oriented research traditions. QCA enables the systematic comparison of a moderate number of cases — typically between five and fifty — by identifying the combinations of conditions (rather than single variables) that are associated with a given outcome. This methodology is particularly relevant to the present study, which seeks to identify the confluence of institutional, technological, and

socio-cultural factors that have facilitated effective financial inclusion in diverse national contexts, and to assess which of these configurations best mirrors Algeria's current situation.

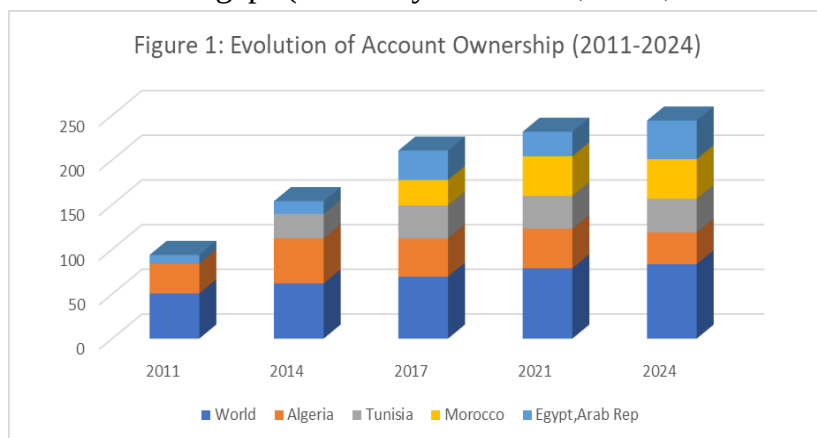
The research is based solely on secondary data obtained from three primary sources: the World Bank's Global Findex database (2011–2024), the IMF Financial Access Survey, and peer-reviewed empirical studies published between 2020 and 2025. The benchmarking process involved a comparative analysis of seven reference countries: Kenya, Bangladesh, the United Arab Emirates, Egypt, Morocco, Tunisia, and Sudan. These countries were chosen because they represent a variety of successful models in both digital and Islamic finance.

Each case study was assessed across three key dimensions: access, usage, and quality. In addition, the assessment included an evaluation of the relevant regulatory frameworks and the social and cultural factors that influenced them.

4. Financial Inclusion Globally and Algeria's Position

4.1 The Global Picture

Over the last ten years, the world has seen substantial strides in financial inclusion. Global Findex data as shown in figure 1 that formal account ownership climbed from 51% in 2011 to 83.3% by 2024 (World Bank Global Findex, 2025; Sha'ban et al., 2024). Yet, this advancement hasn't been uniform. Sub-Saharan Africa, South Asia, and certain areas of the MENA region still face notable gaps (Osabutey & Jackson, 2024; Banna et al., 2022).



Source : Global Findex Database 2025

4.2 Algeria's Trajectory: A Striking Decline Requiring Explanation

Global Findex data reveals a striking Algerian paradox: while the world recorded consistent upward progress, Algeria as seen in the figure 1 followed an exceptional regressive trajectory, with account ownership declining from 50.48% in 2014 to 35.29% in 2024 (Global Findex Database, 2025).

This decline can be attributed to three interrelated factors:

- **Structural factors:** Declining trust in financial institutions and growth of the informal economy (Chaouchkhoulane et al., 2024; Bernard & Cui, 2023).
- **Technological factors:** Inadequate digital infrastructure and lack of interoperability between platforms (Abada et al., 2024; Benamar et al., 2025).
- **Socio-cultural factors:** Low financial literacy and religious sensitivity toward interest-based products (Boutellaa et al., 2020; Bousseta, 2025).

5. Regulatory Framework: Achievements and Gaps

Algeria's financial regulatory landscape has demonstrated significant advancement, evidenced by its progressive alignment with the Financial Action Task Force (FATF) standards concerning anti-money laundering and counter-terrorism financing (Benmahmoud, 2024), alongside a partial convergence with International Financial Reporting Standards (IFRS) (Bernard & Cui, 2023). Despite these advancements, the regulatory framework is characterized by three primary deficiencies:

- Procedures that are overly complex and a bureaucratic burden that deters low-income users (Benyoub & Boufelfel, 2023; Arner et al., 2023).
- Restricted opportunities for innovation and a FinTech sandbox environment that is not fully developed (Abada et al., 2024).
- Inconsistent enforcement practices and inadequate digital consumer protection mechanisms (Mechroum & Benzaraa, 2024; Meziane & Bouguetaia, 2023).

6. Digital Infrastructure and FinTech

6.1 A critical examination of model transferability is essential.

While the international models previously reviewed offer compelling support for the promise of digital finance, it is imperative to scrutinize the underlying

structural requirements that enabled their success and to assess their current relevance within the Algerian context.

Table1: Successful International Models

Country	Main Tool	Inclusion Rate	Key Lesson for Algeria
Kenya	M-Pesa	79%	Mobile-first strategy reaches rural populations(Osabutey & Jackson, 2024; Mogaji & Nguyen, 2022).
Egypt	Vodafone Cash	43%	Policy-driven digital adoption accelerates inclusion (Sha'ban et al., 2024; Osabutey & Jackson, 2024).
Bangladesh	bKash	53%	Agent networks compensate for branch gaps(Shaikh et al., 2023).
UAE	Integrated FinTech ecosystem	+90%	Regulation + innovation enables rapid scale-up (Arner et al., 2023; Rotinsulu et al., 2025).

Source: prepared by the author

Consider the success of Kenya's M-Pesa. M-Pesa's rise wasn't just about the technology. It flourished, a product of a fortunate alignment of circumstances (Osabutey & Jackson, 2024; Mogaji & Nguyen, 2022). Safaricom's dominant market presence played a significant role, as did a specific regulatory benefit bestowed by the Central Bank of Kenya.

This allowed mobile money to bypass the standard banking rules.

Furthermore, the groundwork was already laid by the widespread, informal use of mobile airtime for money transfers.

The specific conditions seen in other places aren't automatically present in Algeria's banking system, which is heavily regulated and controlled by the government.

Similarly, the success of Bangladesh's bKash model was due to its connection to an existing microfinance system, started by Grameen Bank (Shaikh et al., 2023; Banna et al., 2022), and a large, rural workforce with significant

remittance flows. These structural characteristics are very different from Algeria's demographic and economic situation.

Egypt's rapid digital payment expansion was accelerated by top-down government mandates (Sha'ban et al., 2024; Rotinsulu et al., 2025), including the requirement for public sector salary disbursement through formal accounts — a policy lever that Algeria could feasibly adopt but has not yet implemented at scale.

The financial technology sector in the United Arab Emirates, on the other hand, is flourishing. It's supported by robust institutions, adaptable regulations, and a global perspective.

This stands in stark contrast to Algeria, where the economy is predominantly local and relies heavily on cash.

These observations do not lessen the relevance of these models for Algeria. Instead, they highlight the need for institutional changes to support technological adoption (Arner et al., 2023; Gallego-Losada et al., 2023). Algeria's financial inclusion strategy should carefully consider these experiences, focusing on the aspects that best fit its current regulations, population, and cultural context, rather than directly copying any single foreign model.

6.2 Algeria's Digital Reality and Available Opportunities

Algeria's digital landscape has evolved, spurred on by the COVID-19 pandemic, which accelerated the use of electronic payments and underscored the importance of digital channels for economic stability (Bouchelit & Madouri, 2024). However, several hurdles remain:

Digital infrastructure still hasn't caught up with that of its regional counterparts (Meziane & Bouguetaia, 2023; Mechroum & Benzaraa, 2024). Furthermore, there's a lack of interoperability between different payment platforms (Abada et al., 2024; Benamar et al., 2025). Finally, the user experience within digital banking applications remains limited in terms of functionality and user accessibility.

7. Financial Literacy and Consumer Protection

International literature consistently finds that higher levels of education and financial literacy are strongly associated with improved financial inclusion outcomes (Desy Wulan et al., 2024; Suarez, 2023; Adekemi, 2024). In Algeria, the absence of financial and digital literacy represents a dual barrier that explains the phenomenon of dormant accounts — accounts opened but never actively used — which effectively hollows out inclusion initiatives of their real impact (Maatallah, 2024; Rotinsulu et al., 2025). Any meaningful inclusion strategy must therefore integrate financial education programs alongside channel expansion, rather than treating them as separate tracks (Mwakalila & Kasongwa, 2024; Geetha & Kalaiselvi, 2024).

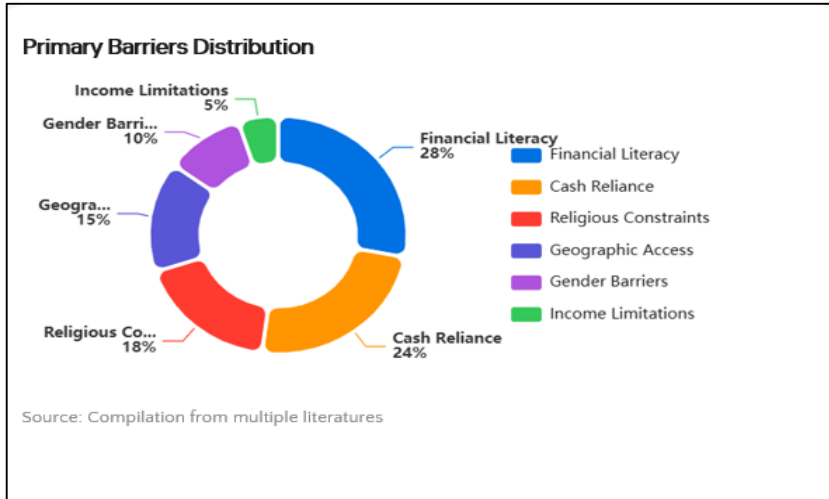
8. Underserved Groups: Women, Rural Populations, and the Informal Economy

Local and regional studies have identified four primary factors that contribute to financial exclusion in Algeria:

- **Religious constraints:** A reluctance to engage with financial products that involve interest prevents a significant portion of the population from accessing the formal financial system (Boutellaa et al., 2020; Bousseta, 2025).
- **Income limitations:** Diminished purchasing power diminishes the perceived necessity for formal banking services (Ghomari et al., 2022; Benyoub & Boufelfel, 2023).
- **Geographic disparities:** The concentration of bank branches in urban centers restricts access for rural populations (Hadouga, 2023; Ubeda et al., 2024).
- **Women face a complex set of challenges,** including social restrictions and limited access to technology (Adekemi, 2024; Geetha & Kalaiselvi, 2024).

Figure 4 provides a synthesis of the primary barriers to financial inclusion in Algeria, demonstrating that demand-side challenges—specifically, limited financial literacy and reliance on cash—together constitute more than half of the exclusion drivers documented in the existing research.

Figure 2: The main obstacles to financial inclusion in Algeria



Source: A compilation from multiple literatures

9. Islamic Finance as a Complementary Pathway

9.1 Islamic Finance Instruments and Their Inclusion Potential

Table 2: Islamic Finance Instruments and Their Inclusion Role

Instrument	Type	Target Group	Inclusion Role
Murabaha	Cost-plus financing	SMEs and households	Sharia-compliant credit alternative(Bousseta, 2025).
Ijarah	Leasing	Low-income borrowers	Asset access without interest(Hamadi et al., 2025).
Musharaka	Partnership financing	Entrepreneurs	Business financing for the excluded(Hidayat et al., 2023).
Takaful	Islamic insurance	All groups	Risk protection for the uninsured(Bousseta, 2025; Hamadi et al., 2025).

Zakat funds	Redistribution	Poorest households	Direct income support mechanism(Hidayat et al., 2023).
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Source: prepared by the author

Yet technology alone cannot overcome our deepest cultural barriers. This is where Islamic finance becomes essential. We propose five instruments as seen in the table 1: Murabaha for SME cost-plus financing; Ijarah for low-income leasing arrangements; Musharaka for entrepreneurial partnership financing; Takaful for mutual insurance reaching all population groups; and Zakat funds for redistribution targeting the poorest households. Regional success stories from the Gulf Cooperation Council states and Sudan demonstrate that Islamic finance effectively promotes inclusion for groups excluded for religious reasons. Implementation requires three elements: a strong supervisory framework with dedicated Sharia expertise; specialized institutional skills through training programs for bankers, lawyers, and regulators; and public awareness campaigns to build trust. Through the Maqasid connection, these instruments directly link to higher objectives of Sharia and inclusive development goals.

9.2 Regional and International Experiences

Regional and international examples show that Islamic finance can effectively promote financial inclusion, particularly for groups excluded for religious reasons, as seen in the Gulf Cooperation Council states and Sudan (Hamadi et al., 2025; Hidayat et al., 2023). To replicate these results in Algeria, three key elements are essential: a strong supervisory framework, specialized institutional skills, and ongoing public awareness campaigns (Bousseta, 2025; Arner et al., 2023).

10. Regional Benchmarking: Lessons from Neighboring Countries

A comparison of Algeria with its Maghreb neighbors reveals a striking lag in banking infrastructure density:

Tunisia:

- In 2017, Tunisia's banking penetration stood at roughly 27%. Algeria's rate, depending on how you looked at it, was somewhere between 33% and 50%, though actual usage was lower.

- Tunisia also had a more robust branch network. In 2024, the number of commercial bank branches for every 100,000 adults in Tunisia was approximately 22.37 (World Bank Global Findex, 2025). This meant more accessibility and a broader selection of services for consumers.

Morocco:

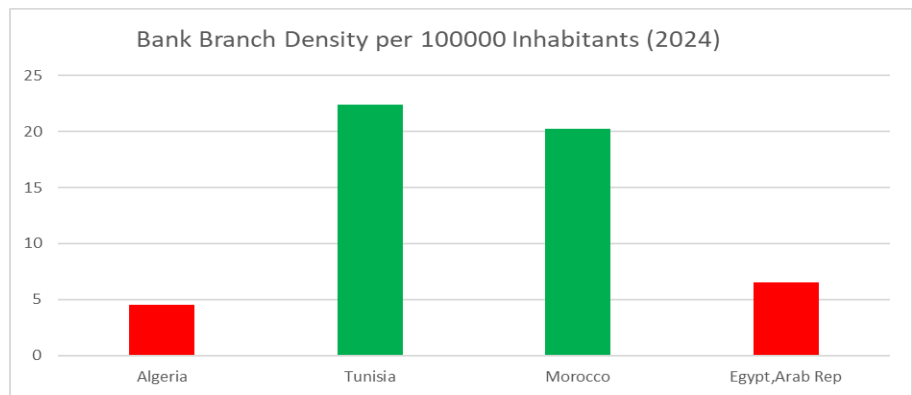
In 2024, Morocco boasted an even more robust physical banking infrastructure. The average number of branches was 20.21 per 100,000 people, a significant difference compared to Algeria's 4.49 branches per 100,000.

As a result, this expanded network, combined with mobile banking and microfinance programs, allowed Morocco to reach a larger part of its population, particularly in semi-urban and rural areas.

Figure 3 illustrates the stark disparity in banking infrastructure density between Algeria and its regional peers, underscoring the structural imperative for digital and agent-based channels as the primary vehicle for inclusion expansion.

These comparisons highlight that Algeria still lags in both physical banking infrastructure and digital ecosystem maturity. Integrating mobile payment systems, as seen in Egypt and Kenya, along with the growth of Islamic finance, like in the Gulf Cooperation Council and Sudan, offers strategic ways to overcome Algeria's current challenges. These challenges include a lack of trust in official institutions and geographical isolation (Abada et al., 2024; Benamar et al., 2025; Hadouga, 2023).

Figure 3: Bank Branch Density per 100,000 Inhabitants



Source : Global Findex Database 2025

This gap makes clear that expanding financial inclusion in Algeria cannot rely on the traditional branch model alone, making digital channels and agent networks not merely an option but a strategic imperative (Ubada et al., 2024; Hoque et al., 2024).

Figure4 : development of Number of automated teller machines per 100,000 adults for Algeria, Egypt, Morocco, and Tunisia across 2004-2024

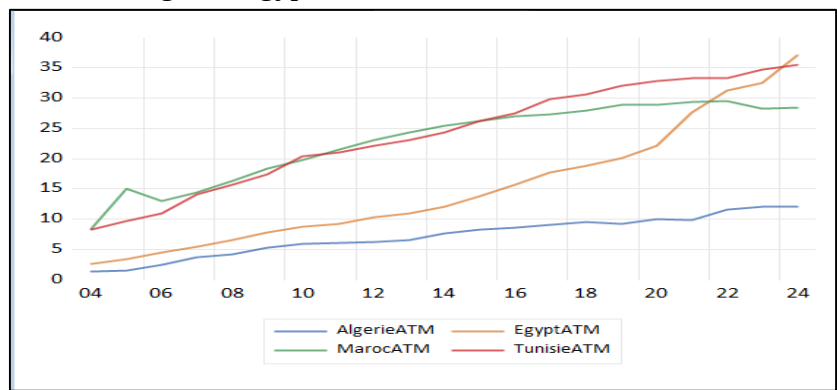
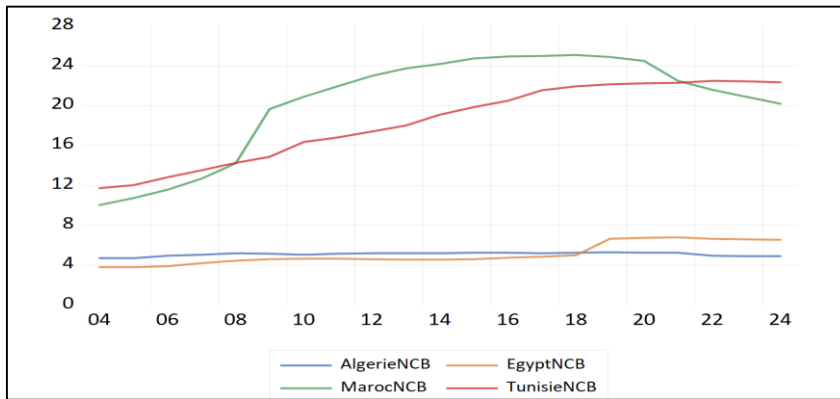


Figure 5 : development of Number of commercial bank branches per 100,000 adults for Algeria, Egypt, Morocco, and Tunisia across 2004-2024



Source (Figure 4 and 5): Global Index Database 2025

Between 2004 and 2024, ATM access data highlights a stark regional divide: Egypt's recent exponential growth propelled it past the steady expansions of Tunisia and Morocco, while Algeria persistently lagged far behind, with a severe physical banking infrastructure deficit.

While Morocco and Tunisia experienced significant growth in commercial bank branches per 100,000 adults before seeing slight declines in recent years, Algeria and Egypt remained completely stagnant with minimal to no infrastructure expansion throughout the entire 20-year period.

11. Strategic Recommendations: A Phased Roadmap

This analysis offers a phased implementation framework, structured around three distinct time periods, rather than providing abstract recommendations.

Short Term (1–2 years): Building the Foundations

Initially, the focus should be on streamlining account openings and implementing more effective Know Your Customer (KYC) procedures.

Moreover, a national program should be started to improve financial and digital literacy, specifically targeting women, young people, and those living in rural areas (Maatallah, 2024; Desy Wulan et al., 2024).

At the same time, a regulatory sandbox should be established.

Moyen Term(3-5years):

This would allow for FinTech experimentation and innovation to flourish. Looking ahead, over the next three to five years, the focus should shift to expansion and integration (Abada et al., 2024). The next step is to require

interoperability between digital payment platforms (Benamar et al., 2025; Rotinsulu et al., 2025).

Moreover, expanding bank agent networks into rural and remote areas is crucial.

Comprehensive Islamic finance legislation, encompassing all financial instruments, should also be issued (Bousseta, 2025; Hamadi et al., 2025).

Long Term (5–10 years): Full-Scale Transformation

The final phase entails constructing an integrated FinTech ecosystem that unites both public and private stakeholders. Achieving full alignment with G7 digital financial inclusion standards is also a key objective. Ultimately, a financial inclusion rate of at least 60% should be targeted by the year 2035 (Afonso & Blanco-Arana, 2024; Mwakalila & Kasongwa, 2024).

11.1 Limitations of the Study

This study offers a thorough comparison of financial inclusion experiences in Algeria. However, several limitations should be acknowledged to maintain academic transparency.

Using only secondary data sources, such as the World Bank's Global Findex, the IMF's Financial Access Survey, and existing academic research, limits our ability to fully understand individual experiences.

Specifically, broad indicators don't fully capture the complexities of local trust dynamics, behavioral patterns in the informal sector, and community-specific religious views on banking practices (Boutellaa et al., 2020; Ghomari et al., 2022).

Additional fieldwork, encompassing household surveys or semi-structured interviews with marginalized populations, would substantially enhance future investigations. Furthermore, the lack of quantitative econometric techniques, including panel data regression and probit models, implies that the causal associations identified in this study are indicative rather than conclusively established. Despite prior research examining the links between institutional quality, digital infrastructure, and financial inclusion, these relationships have not been independently validated using Algerian data (Sha'ban et al., 2024; Afonso & Blanco-Arana, 2024).

In addition, the choice of countries for comparison, while carefully explained, inevitably involves some analytical selectivity. Including more

comparison groups, particularly from francophone West Africa or Central Asia, could have provided a more detailed understanding of the conditions that influence the success or failure of digital finance and Islamic finance models.

Finally, the lack of gender-specific and rural-specific data for Algeria in publicly available databases limits the precision with which this paper can describe the inclusion gaps faced by women and rural populations.

This represents both a limitation of the current study and a broader data gap that Algerian statistical authorities would do well to address.

These limitations do not invalidate the paper's findings or recommendations, but they do define the boundaries of its claims and point toward productive directions for future empirical inquiry.

Recommendation 1: Build Digital Infrastructure and Enforce Interoperability

The article strongly recommends that Algeria establish a regulatory sandbox in the short term (1–2 years) to allow FinTech experimentation and innovation to flourish, followed by a mandatory interoperability requirement between digital payment platforms in the medium term (3–5 years). This is accompanied by expanding bank agent networks into rural and remote areas, since Algeria has only 4.49 bank branches per 100,000 adults — far below Morocco's 20.21 and Tunisia's 22.37. The core argument is that digital channels and agent networks are not merely an option for Algeria but a strategic imperative, given that the traditional branch-based expansion model has proven structurally insufficient.

Recommendation 2: Invest in Financial and Digital Literacy Alongside Islamic Finance Legislation

The article recommends launching a national financial and digital literacy program, specifically targeting women, youth, and rural populations, to combat the phenomenon of dormant accounts — accounts opened but never actively used — which hollow out inclusion initiatives of their real impact. Simultaneously, Algeria should enact comprehensive Islamic finance legislation covering all Sharia-compliant instruments (Murabaha, Ijarah, Musharaka, Takaful, and Zakat funds), as religious reluctance toward interest-based products is one of the primary drivers of financial exclusion in

the country. The article argues that any meaningful inclusion strategy must integrate financial education and Islamic finance expansion simultaneously, rather than treating them as separate policy tracks.

12. Conclusion

Algeria's financial inclusion landscape presents a complex and multifaceted challenge, characterized by both supply-side inadequacies and demand-side obstacles. However, a significant opportunity exists: the combined implementation of digital transformation and Islamic finance, within a unified policy structure, represents the most potent means of addressing this disparity.

The effectiveness of this dual strategy hinges on robust political commitment, ambitious regulatory adjustments, and continuous investment in both financial and digital human resources.

If these conditions are implemented consistently and systematically, Algeria is capable of transforming financial inclusion from a stated objective into a genuine engine of inclusive and sustainable development (Afonso & Blanco-Arana, 2024; Mwakalila & Kasongwa, 2024).

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