# The potential of electronic payment mechanisms to enhance financial inclusion in Algeria an analytical study

**Abdussalam Shibani** [*] [1] **, Tahar baadache** [2]**, Hachemi BAADJ** [3]

[1] Faculty of Engineering, Environment & Computing, Coventry, CV1 5FB, UK
ab1732@coventry.ac.uk
**ORCID https://orcid.org/0000-0002-2551-2235**

[2] University of Laghouat, Economic development studies laboratory (Algeria)
th.baadache@lagh-univ.dz
**ORCID** https://orcid.org/0009-0000-4380-5069

[3] University of Laghouat, Economic development studies laboratory (Algeria)
h.baadj@lagh-univ.dz
**ORCID https://orcid.org/**0000-0002-7943-8173

**Received: 18/09/2025** **Accepted: 19/05/2026** **Published: 20/07/2026**

**Abstract:**

This research analyzes the role of electronic payment mechanisms in fostering financial inclusion in Algeria through an in-depth analytical approach. Findings indicate a gradual increase in adoption, driven by improved digital infrastructure and rising bank account/ATM numbers. However, structural challenges like weak infrastructure, limited financial literacy, and an outdated legislative framework impede wider expansion. The paper emphasizes developing inclusive financial services for low-income and informal sector workers. It also stresses enhanced collaboration among stakeholders to support digital financial transformation and broaden formal banking access.

**Keywords**: Electronic payment, financial inclusion, Digital infrastructure, Algeria.

[*] **Corresponding author**

# I. Introduction:

Electronic payment mechanisms have become one of the most important tools of the digital transformation witnessed by modern economies. They are no longer the sole preserve of industrialized countries but are increasingly making their way into many emerging economies, including Algeria. These mechanisms—which include bank cards, e-wallets, online transfers, and smart financial applications—are an effective way to promote financial inclusion, especially for disadvantaged groups or those who do not typically engage with the traditional banking system.

Economist Robert M. Townsend pointed out that financial inclusion is an essential pillar of economic development, as it contributes to enabling individuals and institutions to access financial services securely and comprehensively. In this context, electronic payment mechanisms play a pivotal role in reducing the barriers faced by individuals, such as the remoteness of traditional banks, transaction costs, and a lack of financial awareness. Jean Tirole, an expert in the digital economy, believes that financial innovation can be a double-edged sword but remains necessary if implemented within a solid and sound regulatory framework that guarantees protection for individuals and achieves transparency.

In the Algerian context, there is an urgent need to review the structure of the financial system to expand the user base of financial services. This prompted the Bank of Algeria to launch multiple strategies and initiatives to modernize and develop the payment infrastructure. However, challenges still limit the widespread adoption of electronic payment mechanisms, necessitating an in-depth study to assess their potential in promoting financial inclusion.

## 1. Problematic:

The issue of financial inclusion stands as a key challenge in extending financial services to populations currently excluded from the traditional banking system. Consequently, electronic payment mechanisms have emerged as a potentially effective tool for bridging the gap between individuals and access to financial services. However, the widespread adoption and utilization of these mechanisms in Algeria encounter several significant obstacles, including a weak digital infrastructure, insufficient financial literacy, and a legal framework that may not be fully compatible with the dynamics of the digital economy.

Therefore, this research poses the following central questions:

**Can electronic payment mechanisms serve as an effective solution to enhance financial inclusion in Algeria? Furthermore, are the necessary conditions currently in place to**

**enable their role in integrating populations underserved by existing financial services and products?**

Sub-questions:

- What is the current extent of the spread and use of electronic payment mechanisms in Algeria?
- What obstacles hinder the wider adoption of these mechanisms?
- In what ways can electronic payment contribute to decreasing the proportion of individuals excluded from the formal banking system?
- Is there a correlation between the development of digital infrastructure and the level of financial inclusion?

**2. Hypotheses:**

- The more widespread electronic payment mechanisms become, the higher the level of financial inclusion among different categories of society;
- The current digital and legislative infrastructure represents a major obstacle to the widespread use of electronic payment in Algeria;
- The lack of banking awareness reduces individuals' confidence in dealing through electronic channels, which negatively affects financial inclusion;
- The development of digital financial products suitable for low-income groups can significantly contribute to the integration of these categories into the banking system.

**3. Methodology:**

To comprehensively address the various aspects of the topic, answer the research problem, and test the validity of the hypotheses, a descriptive approach was adopted. This approach aims to delineate the different dimensions of the topic and facilitate the achievement of the research's intended outcomes. Furthermore, an analytical approach will be employed to ascertain the significance of the relationship between the independent and dependent variables.

**4. Objectives:**

- To analyze the current state of electronic payment mechanisms in Algeria;
- To study the extent of their contribution to promoting financial inclusion;
- To diagnose the obstacles that limit the spread and use of these mechanisms.

**5. Importance**:

The significance of this research stems from its focus on a contemporary and crucial issue within Algeria's financial sector. Financial inclusion is a prerequisite for achieving social justice and fostering economic development. Furthermore, the study of electronic payment mechanisms is increasingly pertinent, considering the global shift towards a digital economy and Algeria's urgent need to align with this transformation.

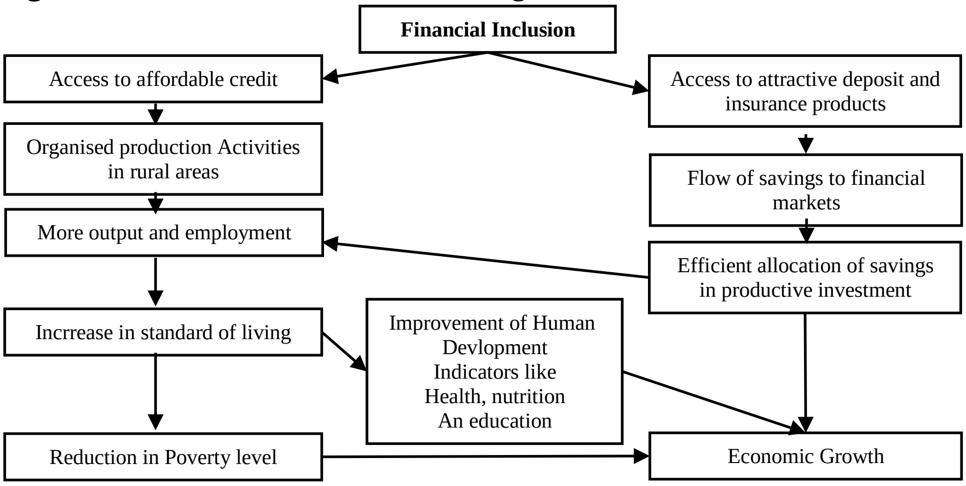
## II. The notion and importance of financial inclusion:

To broaden financial inclusion, it's essential to identify the fundamental requirements and enhance its contribution to sustainable development goals. This will allow the inclusion of individuals lacking access to banking services, empowering them to fund their investments and save, thereby reducing poverty, unemployment, and fostering sustainable development.

## 1. Definition of financial inclusion:

Financial inclusion is the proportion of individuals and firms that use financial services. It has a multitude of dimensions reflecting the variety of possible financial services, ranging from payments and savings accounts to credit, insurance, pensions, and securities markets. Its determination can differ for individuals and for firms. (Development, International Bank for Reconstruction, 2014, p. 15)

**Fig 01:** Financial inclusion – economic growth theoretical framework




**Source:** (Glenn W.muschert, Vikash Ramiah, Vijay Pereira, & Asli Cansan Doker, 2020, p. 135)

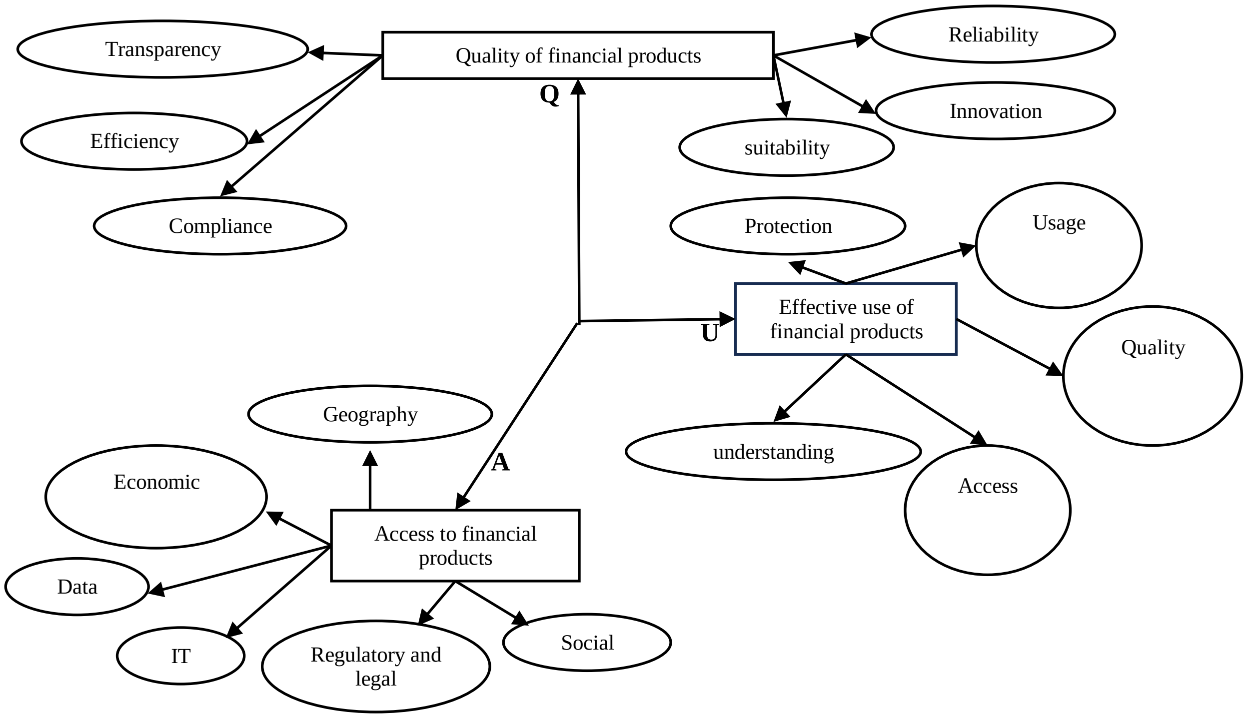
Financial inclusion provides easy access to credit and diverse financial products and stimulates a series of interconnected developments. It encourages organized productive activities in rural areas, leading to increased production and employment, thereby improving living standards and reducing poverty rates. Furthermore, financial inclusion fuels economic growth and supports human development in health, education, and nutrition, thus reinforcing these positive effects.

## 2. Dimensions of financial inclusion:

Financial inclusion is a growing global priority, with over 50 countries adopting national strategies. This reflects a widespread recognition of its importance in economic development. Furthermore, the United Nations Sustainable Development Goals highlight financial inclusion as crucial for achieving the goal of ending poverty by 2030 ( Marco Espinosa-Vega, et al., 2020, p. 1).

Measuring financial inclusion presents a significant challenge for researchers and policymakers. Traditional approaches have relied primarily on supply-side data regarding the availability and use of financial products; however, they do not accurately reflect true inclusion as they overlook demand data. Although a few studies focus on the demand side, these typically address single indicators or specific geographic regions, thus highlighting the need for the development and innovation of a more comprehensive measurement methodology (Noelia Cámara & David Tuesta, 2017, p. 3).

**Fig 02 :** The three dimensions of financial inclusion




**Source:** Authors' own data.

By modeling the graphical representation above and employing directed graph theory G= (V, E), where V represents the set of factors (quality, effective use, access, etc.) and E represents the causal relationships, and assuming that Q represents the vector of financial product quality, U represents the vector of effective use, and A represents the access vector, a function $f : A \times Q \to U$ can be defined to express the influence of access and quality on effective use. The correlation between these vectors can be statistically analyzed using regression models or path analysis to estimate the strength and direction of the relationships among the various factors.

## 3. The importance of financial inclusion:

Financial inclusion is of crucial importance to governments and central banks due to its close link with financial stability and economic growth. Financial exclusion undermines sustainable stability. Promoting inclusion stimulates competition among institutions, improves the supply of products, and formalizes informal financial channels. (bank-of-algeria, 2022, p. 2)

People: Financial inclusion is a long-term strategy that requires focusing on key areas to achieve its goals. Research reveals significant developmental benefits of financial inclusion, especially with the use of digital financial services. Digital financial services help in managing financial risks, facilitating transfers, and saving time and costs. They also enable individuals to accumulate savings and increase spending on necessities, as demonstrated in the experiences of Kenya, Nepal, and Malawi. Studies have shown that mobile financial services contribute to improving income and reducing poverty, as seen in Kenya where savings increased and poverty decreased. (Souria Chenbi & Saïd Ben Lakhdar, 2019, pp. 107-108)

Economy: Financial instruments promote economic equality and reduce income inequality, as the spread of financial inclusion is linked to a decrease in inequality. It empowers individuals to invest and develop their capabilities, contributing to a more equitable economy. Furthermore, financial inclusion drives sustainable economic growth by increasing savings and investment, improving resource efficiency, and fostering entrepreneurship and productivity. Its positive impact has been evident in Sub-Saharan Africa due to banking and financial technology services, which have led to the integration and empowerment of more individuals within the formal economy, a crucial element for sustainable development. (David Mhlanga & Mufaro Dzingirai, 2025, p. 32)

## III. Electronic payment mechanisms:

Recent studies conducted in the United States and several European Union countries have indicated that the costs associated with cash and check payments are significantly higher than those of electronic payments. For instance, accelerating the transition from paper-based to electronic payments is estimated to potentially reduce payment costs by between 0.4% and 3% of GDP, depending on the country. However, to realize the cost savings associated with the digitization of payments, individuals must actively use cards or mobile phones for their expenditures, and merchants must accept these new payment methods. The costs involved in adopting these new payment instruments, such as equipment expenses, transaction fees, interchange rates, and fraud-related costs, are considerable and could impede the progress toward a cashless economy. (Laurent Gille, 2009, p. 101)

Ghosh Pratim Partha and Pattanaik Sabyasachi argue that electronic payment has become a core activity due to the expansion of e-commerce, defining it as the settlement of transactions via online payments (Sabyasachi Pattanaik & Partha Pratim Ghosh , 2010, p. 262). Al & Kavu D Tatenda point out that electronic payment refers to a system of transferring funds from one bank account to another. (Saleh Khouiledat & Nour Eddine Lehhouazi, 2022, p. 61)

Electronic payment, in a general sense, is a means of conducting commercial transactions for the exchange of goods or services over the Internet. These transactions can occur between businesses and individuals in several ways, namely: Payments via an intermediary, Digital currency, Digital wallet, Bank cards. (Samir Merbouhi & Noufyele Hadid, 2017, p. 21)

Electronic payment mechanisms are defined as the means and technologies that enable individuals and entities to complete payment transactions and exchange funds digitally over the internet or other electronic networks. This facilitates the fulfillment of financial obligations to third parties without the need to use paper money or traditional payment methods.

**Table 01 :** Online payment activity

| years | Phone / communication | TRANS | insurance | Invoices | Administrative service | Services | Asset sale | Sport and leisure | Total amount (DZD) |
|---|---|---|---|---|---|---|---|---|---|
| **2018** | 138495 | 871 | 6439 | 29722 | 1455 | 0 | 0 | 0 | 332592583,3 |
| **2019** | 141552 | 6292 | 8342 | 38806 | 2432 | 5056 | 0 | 0 | 503870361,6 |
| **2020** | 4210284 | 11350 | 4845 | 85676 | 68395 | 213175 | 235 | 0 | 5423727075 |
| **2021** | 6993135 | 72164 | 8372 | 120841 | 155640 | 457726 | 13468 | 0 | 11176475536 |
| **2022** | 7490626 | 195490 | 23571 | 302273 | 153957 | 705114 | 24169 | 152925 | 18151104424 |
| **2023** | 8400869 | 371317 | 36996 | 640485 | 4086659 | 1055672 | 51154 | 708212 | 32196672024 |
| **2024** | 9838682 | 758764 | 61739 | 1447168 | 5248922 | 1386790 | 106219 | 746198 | 51945560351 |

**Source:** (https://giemonetique.dz/ar/qui-sommes-nous/activite-paiement-sur-internet/., s.d.)

Based on the table above, there is a dynamic and evolving trend reflecting an increasing adoption of electronic payment methods over time, albeit at varying rates across different sectors. The "Phone / Communications" category experienced a sharp decline in the number of transactions in 2020, which may indicate a shift in payment mechanisms for these services towards other channels not represented in the table, or perhaps a change in the nature of these transactions themselves. Conversely, categories such as "Administrative Service" and "Sports and Recreation" showed significant growth in the number of transactions, particularly in recent years, reflecting a growing use of electronic payments in these areas. The "Bills" category witnessed a substantial surge in 2022-2023, which could suggest efforts to activate electronic payments for various bills. Overall, the significant increase in the "Total Number of Transactions" and the "Total Amount (DZD)" during the period 2018-2023, with some fluctuations that may be linked to specific economic or social circumstances, points to an upward trajectory in the adoption of electronic payments in Algeria. This development reflects a move towards facilitating transactions and reducing reliance on cash payments, although the pace of growth still varies among different sectors.

## 1. Types of electronic payment:

Electronic payment systems, also known as Electronic Funds Transfer (EFT), are widespread across sectors such as banking and commerce, etc., facilitating the transfer of funds. The pursuit by organizations to offer cost-effective and high-quality services drives the adoption of EFT.

The types of electronic payment, also known as digital payment, are as follows: (Saadia IBEGHOUCHENE & Ali MOKRANE, 2022, p. 555)

Proximity payment: Also called contact payment or face-to-face payment, this is the payment in which the payer and the paid share the same location. In other words, it is a contact payment that is made between two parties (buyer and seller) who meet physically; for example, face-to-face purchases at a merchant or withdrawal from an ATM.

Remote payment: This mode of payment pertains to transactions conducted via the Internet wherein the transacting parties, namely the buyer and the seller, are geographically disparate and do not engage in physical interaction. Illustrative examples encompass remittances for utilities delivered to residential addresses (e.g., gas, electricity, telecommunications), the discharge of fiscal obligations and statutory levies to public entities, and virtual payments for the acquisition of merchandise and services (e-commerce) facilitated by electronic networks such as the Internet and mobile telephony.

Transferring money online: Peer-to-peer (P2P) money transfer systems enable the direct transfer of funds from one individual to another using any electronic communication medium. For transferring money between two individuals, the most widely used method is PayPal.

Wireless payment: Mobile payment, or m-payment, refers to payments in which a mobile phone is used to prompt or confirm payment. Currently, it is used in many payment applications, including fund transfers, bill payments, in-store payments, and remote payments.

## 2. Algerian FI & E-Payment Mechanisms:

To achieve inclusive economic growth in Algeria, the existence of a robust financial system is of paramount importance. Financial inclusion (FI) and electronic payment (e-payment) mechanisms are pivotal in realizing this objective. This analysis examines the current status of FI and e-payment instruments within Algeria.

### 1.1 Use of bank accounts:

According to the 2021 Global Findex, the percentage of adults with an account at a financial institution in Algeria reached 44.10%, compared to 42.78% in 2017. Despite this increase over a five-year period, there is an improvement in account ownership.

**Table 02 :** No. of active accounts in DZD

| years | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 |
|---|---|---|---|---|---|---|
| **Legal entities** | 948162 | 950529 | 651109 | 708406 | 726780 | 640535 |
| **Individuals** | 10920165 | 11071424 | 10851317 | 10947161 | 11296349 | 12178122 |
| **Males** | 8172287 | 8395009 | 8118582 | 7891602 | 8117599 | 8261739 |
| **Females** | 2738463 | 2665113 | 2733391 | 3056432 | 3179202 | 3916383 |
| **Total** | 11868327 | 12021953 | 11502426 | 11655567 | 12023128 | 12818657 |

**Source:** (https://www.bank-of-algeria.dz/nombre-comptes-actifs, s.d.)

Using the Python programming language, the results showed strong and significant positive linear correlations between individuals and the total (0.999, p=0.000), between males and the total (0.953, p=0.004), between females and the total (0.860, p=0.028), between individuals and males (0.939, p=0.006), and between years and the number of females (0.926, p=0.008). These correlations indicate strong linear relationships where one variable changes significantly with the change in the other.

## 1.2 Bank and postal ATMs:

Interoperability has enabled the improvement of services for holders of both the "Gold E-money Card" (Golden Cash Card) and the interbank card, with a continuous increase in access to ATMs across Algeria for holders of interbank or postal cards.

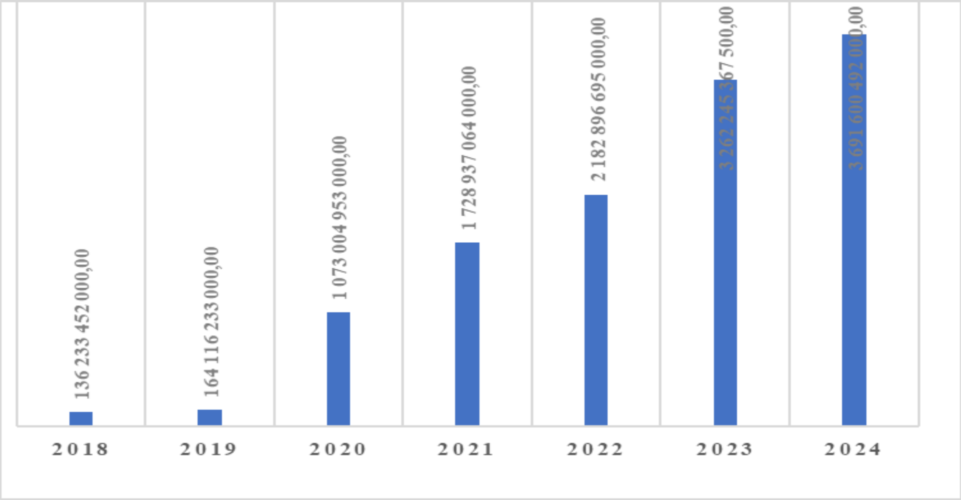
**Table 03 :** Total number of ATMs

| years | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 |
|---|---|---|---|---|---|---|---|
| **Total number of ATMs** | 1441 | 1621 | 3030 | 3053 | 3658 | 3848 | 3942 |

**Source:** (https://giemonetique.dz/ar/activite-retrait-sur-atm/, s.d.)

The total number of operational ATMs showed a clear upward trend. After a relative stability in 2018, the number began to increase gradually until 2019, then jumped significantly starting in 2020. This growth continued until 2024, reflecting a notable expansion in the spread of ATMs, within the framework of efforts aimed at promoting financial inclusion and the widespread adoption of electronic payments.

**Fig 03 :** Total amount of withdrawal transactions (DZD)




**Source:** Authors' own work based on: https://giemonetique.dz/ar/activite-retrait-sur-atm/

It can be observed that the function relating the year to the total amount of withdrawal transactions shows an increasing positive slope, meaning that the rate of change in the value of withdrawals is increasing over time. This growth can be likened to the continuous accumulation of an increasing quantity, where each year represents a larger addition to the total movement than the previous year. This trend indicates a strong and positive correlation between the years and the value of withdrawals, with the possibility of an acceleration in growth that can be modeled using non-linear functions.

### 1.3 Number of bank branches by geographic area:

The distribution of banking services is uneven, with some areas densely populated with financial institutions and others lacking. This unevenness prompts inquiry into the factors driving this concentration and its effect on financial accessibility. Understanding these dynamics is crucial for addressing disparities in financial service provision.

**Table 04 :** Bank branch density by area

| years | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 |
|---|---|---|---|---|---|---|
| **Urban Area** | 1442 | 1434 | 1443 | 1464 | 1477 | 1499 |
| **Rural area** | 95 | 100 | 106 | 108 | 113 | 115 |
| **Total** | 1537 | 1534 | 1549 | 1572 | 1590 | 1614 |
| **Population million** | 42,5 | 43,2 | 44 | 44,7 | 45,4 | 46,1 |

**Source:** Authors' own work based on: https://www.bank-of-algeria.dz/nombre-agences-wilaya/ & https://www.worldbank.org/

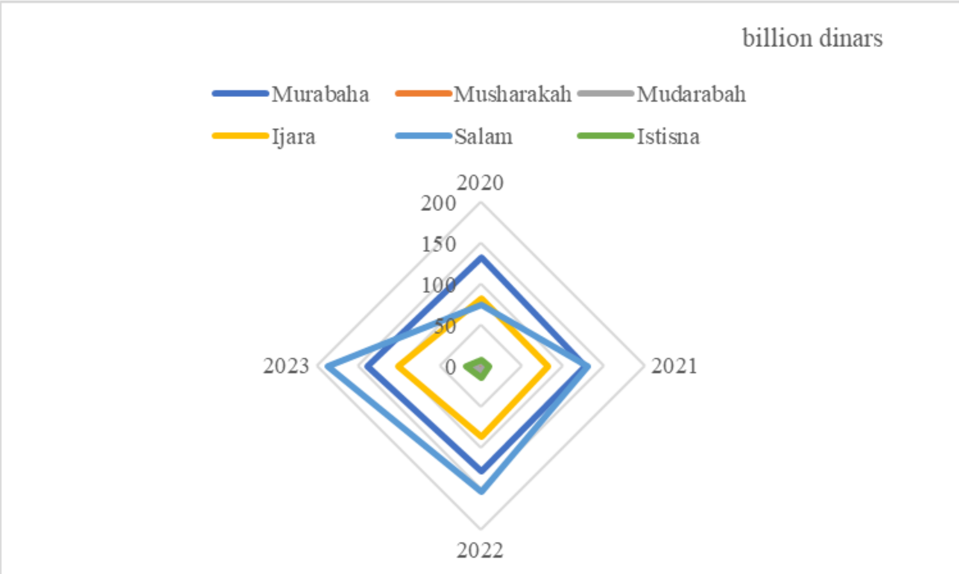
Between the years 2018 and 2023, there was an overall increase in banking density, with the number of branches per million inhabitants rising from 35.03% to 36.16%. Regarding the distribution, it is observed that banking density in urban areas has consistently been significantly higher, reaching 32.52% per million inhabitants in 2018 and 33.93% in 2023. Conversely, the density in rural areas was considerably lower, estimated at 2.24% per million inhabitants in 2018 and 2.49% in 2023. Despite the population growth, urban banking density maintained a relative level, while rural areas experienced a slight increase in density. This suggests a greater concentration of banking services in urban areas, with an ongoing effort to expand coverage in rural regions.

### 1.4 Embedding Islamic financial transactions:

Islamic finance constitutes a financial system grounded in the tenets of Islamic Sharia, proscribing both usury and illicit speculation. Its objective is the attainment of equitable and sustainable economic growth, achieved through innovative financing and investment instruments aligned with Islamic principles.

To enhance financial inclusion, Algeria is actively pursuing the institutionalization of Islamic financial transactions as a contributor to the national economy. In this regard, the Bank of Algeria issued directive number 02-2020 to regulate Islamic banking operations, encompassing transactions such as Murabahah, Ijara, Musharakah, and others. Furthermore, Executive Decree number 21-81 was promulgated to define the conditions for practicing Takaful insurance through specialized companies or dedicated windows within conventional insurance firms. The Islamic banking network has witnessed growth, reaching 130 branches by March 2021, with a trend towards establishing specialized Islamic banking agencies. Public banks, such as the National Bank of Algeria, are marketing Sharia-compliant products, and the General Insurance Company announced the launch of its Takaful insurance activities in early 2022, reflecting Algeria's commitment to developing and regulating the Islamic finance sector. (Souad Bouchlouche, 2022, p. 584)

**Fig 04:** Islamic finance products in Algeria




**Source:** https: Authors' own work based on: Annual Report of the Bank of Algeria, 2022-2023.

As evidenced above, a disparity in the performance of various financing instruments over the indicated years is apparent. Specifically, Murabaha financing commands the largest share and exhibits an upward growth trajectory, reflecting increasing individual demand. Conversely, Mudarabah financing experiences fluctuations, warranting an in-depth analysis of the underlying factors contributing to this volatility. Regarding Ijara financing, its relative stability is noted, coupled with a gradual increase. It is also worth noting the robust growth in Salam financing, particularly in the year 2023, which may indicate a shift in market preferences or financing policies.

### 1.5 Digital Infrastructure:

To foster the advancement of digital financial services with the aim of achieving financial inclusion, the reliance on a robust digital infrastructure, encompassing telecommunications and internet networks, is of paramount importance. This reliance presents substantial opportunities for Algeria to implement innovative technologies.

**Table 04 :** Subscriber base

| | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 |
|---|---|---|---|---|---|---|
| **Mobile phone subscribers** | 47154264 | 45502412 | 45555673 | 47015757 | 49018766 | 51522147 |
| **Landline subscribers** | 4348154 | 4461310 | 4784306 | 5097059 | 5576193 | 6324384 |
| **Total** | 51502418 | 49963722 | 50339979 | 52112816 | 54594959 | 57846531 |

**Source:** Authors' own work based on: https://www.arpce.dz/ar/doc/raa

Mobile phone subscribers: exhibit a general upward trend from the year 2019 to the year 2023. A slight decrease occurred between the years 2018 and 2019, followed by consistent growth. The average annual growth rate from the year 2019 to the year 2023 was approximately $\frac{451522147-45502412}{4} \approx 1,5$ million subscribers per year.

Landline Subscribers: Exhibiting a consistent and significant upward trend throughout the observed period (2018-2023), notable growth was particularly evident between 2021 and 2023. The average annual growth rate from 2018 to 2023 amounted to approximately $\frac{556,324,384-43,481,540}{5} \approx 2,568568.5$ subscribers per year. This suggests a renewed interest or investment in fixed-line services.

These trends within the telecommunications sector in Algeria can be attributed to several key factors:

Mobile Subscriber Growth: The sustained increase in mobile subscribers reflects the growing penetration of mobile telephony throughout Algeria. This can be ascribed to factors such as: demographic expansion; affordability; service coverage expansion; and digital transformation.

Fixed-Line Subscriber Growth: The substantial growth in fixed-line subscribers represents a noteworthy development. This can be attributed to: governmental initiatives; increased demand for fixed broadband internet; the deployment of fiber optics; and bundled service offerings.

### 1.6 The structural challenges to financial inclusion in Algeria:

Algeria faces deep-rooted structural challenges that impede efforts to achieve financial inclusion for all segments of society. Foremost among these are:

Limited Access: Despite notable progress, particularly in mobile phone penetration, access to physical branches, Automated Teller Machines (ATMs), and other financial access points may remain constrained in certain rural or underserved areas.

Underdeveloped Digital Financial Services and Infrastructure: Notwithstanding the increasing adoption of electronic payment systems, these remain less advanced compared to other nations. Persistent issues include inadequate infrastructure, a lack of trust in digital platforms, and low rates of internet usage for financial transactions.

Slow Transition to a Digital Economy: The gradual shift from a traditional cash-based economy towards a digital one contributes to the protracted development of digital financial inclusion.

High Degree of Informal Employment: A significant proportion of the Algerian workforce is engaged in the informal sector, often lacking the stable income and formal documentation necessary to access a wide range of financial services.

Lack of Adapted Financial Products: A potential gap exists in the availability of financial products and services specifically tailored to meet the needs and income levels of vulnerable populations, low-income individuals, and small enterprises.

Stringent Requirements and Procedures: The procedures implemented by banks, sometimes perceived as being applied in a manner that could unintentionally create barriers for certain segments of the population to access financial services.

Financial Literacy and Awareness: Many economic agents lack a sufficient understanding of financial products and services, leading to a deficit of trust and a reluctance to engage with the formal financial system. This preference for cash-based transactions and savings outside financial institutions constitutes a significant impediment.

## IV. Conclusion:

The pursuit of fostering financial inclusion is closely linked to the awareness and effective utilization of electronic payment mechanisms. It is widely acknowledged that financial inclusion, as a pivotal driver for economic development and the Sustainable Development Goals, necessitates a multi-faceted approach. This approach not only addresses accessibility to financial services but also emphasizes the quality of these services and their effective use by individuals and institutions. In this context, electronic payment systems play a crucial role by offering efficient and secure alternatives to traditional cash-based transactions, thereby promoting greater participation in the formal economy.

An analysis of financial inclusion in Algeria reveals a landscape characterized by both progress and ongoing challenges. While there has been a notable increase in the adoption of electronic payment methods and the expansion of digital infrastructure, disparities in access to financial services, particularly in rural areas, and the slow transition away from a cash-based economy still represent significant obstacles. Furthermore, the prevalence of informal employment and the gap in financial literacy necessitate interventions to ensure that all segments of the population benefit from the ongoing financial transformation.

Electronic payment mechanisms are of increasing importance in driving financial inclusion in Algeria. The rise in the number of bank accounts, the expansion of ATM networks, and the increasing volume of electronic transactions all indicate a positive trajectory. However, it is essential to address the challenges that hinder the achievement of more inclusive progress."

**1. Recommendations:**

The key recommendations of this research are as follows:

- Financial Literacy Development**:** Implement comprehensive financial education programs to disseminate banking awareness, particularly among individuals, regarding the use of electronic payment systems. These programs should be tailored to suit different segments of the population, with a focus on vulnerable groups and those working in the informal sector;
- Development of Inclusive Financial Products**:** Encourage the development of financial products and services specifically designed to meet the needs of low-income individuals, emerging and small enterprises, and other marginalized groups. This includes offering affordable transaction accounts, microloans, and accessible insurance products through electronic channels;
- Improvement and Modernization of Regulatory Frameworks**:** Establish clear and supportive regulatory frameworks that foster creativity and innovation in the financial sector while ensuring the protection of individuals and businesses, as well as financial stability. This involves creating a fair and competitive environment for FinTech companies and traditional financial institutions, in addition to addressing issues related to data privacy and cybersecurity;
- Enhancing Collaborative Efforts**:** Foster collaboration among government agencies, financial institutions, telecommunications companies, and other stakeholders to promote the adoption of electronic payment mechanisms and financial inclusion. This can include public-private partnerships, information sharing, and joint initiatives to address current and future challenges;
- Promoting Digital Connectivity**:** It is essential to invest, continue investing, and optimally utilize a robust digital infrastructure, particularly in underserved areas, to improve access to electronic payment services. This includes expanding internet connectivity, enhancing the reliability of digital platforms, and ensuring the security of online transactions.

**Bibliographie**

Marco Espinosa-Vega, Kazuko Shirono, Hector Carcel Villanova, Esha Chhabra, Bidisha Das, & Yingjie Fan. (2020). *Measuring Financial Access— 10 Years of the IMF Financial Access Survey.* Washington U.S.A: International Monetary Fund. Consulté le 05 05, 2025 bank-of-algeria. (2022, 10). *https://www.bank-of-algeria.dz.* Consulté le 05 05, 2025, sur https://www.bank-of-algeria.dz/stoodroa/2022/10/inclusion7.pdf: https://www.bank-of-algeria.dz/stoodroa/2022/10/inclusion7.pdf

David Mhlanga, & Mufaro Dzingirai. (2025). *Financial Inclusion and Sustainable Development in Sub-Saharan Africa.* (1. Edition, Éd.) New York: Taylor and Francis. doi:https://doi.org/10.4324/9781003515715

Development, International Bank for Reconstruction. (2014). *Financial Inclusion.* The World Bank, Washington. doi:10.1596/978-0-8213-9985-9

Glenn W.muschert, Vikash Ramiah, Vijay Pereira, & Asli Cansan Doker. (2020). *Financial Inclusion in Pusuit of UN Sustainable Development Goal.* United Nations: Springer. Consulté le 05 04, 2025

https://giemonetique.dz/ar/activite-retrait-sur-atm/. (s.d.). *https://giemonetique.dz/ar/activite-retrait-sur-atm/.* Consulté le 05 05, 2025, sur https://giemonetique.dz/ar/activite-retrait-sur-atm/.

*https://giemonetique.dz/ar/qui-sommes-nous/activite-paiement-sur-internet/.* (s.d.). Consulté le 05 04, 2025, sur https://giemonetique.dz/ar/qui-sommes-nous/activite-paiement-sur-internet/.

https://www.bank-of-algeria.dz/nombre-comptes-actifs. (s.d.). *https://www.bank-of-algeria.dz/nombre-comptes-actifs*. Consulté le 05 05, 2025, sur https://www.bank-of-algeria.dz/nombre-comptes-actifs.

Laurent Gille. (2009). *Les dilemmes de l'économie numérique.* France: FYP EDITIONS. Consulté le 07 05, 2025, sur https://www.google.dz/books/edition/Les_dilemmes_de_l_%C3%A9conomie_num%C3%A9rique/jTAJVW8-NOsC?hl=fr&gbpv=1&dq=les+moyens+de+paiement+%C3%A9lectronique&pg=PA101&printsec=frontcover.

Noelia Cámara, & David Tuesta. (2017, 06 14). *Measuring financial inclusion: a multidimensional index.* Consulté le 05 05, 2025, sur https://www.bis.org/ifc/publ/ifcb47p.pdf.

Saadia IBEGHOUCHENE, & Ali MOKRANE. (2022, 09). Adoption and Use of Electronic Payments in Algeria: Empirical Study of the Period (2016-2022). *Revue de l'économie financière & des affaires, 6*(3), 555. Consulté le 05 07, 2025

Sabyasachi Pattanaik, & Partha Pratim Ghosh . (2010, 02). Role of Data Mining in E-Payment systems. *International Journal of Computer Science and Information Security, 7*(2), 262. Consulté le 05 07, 2025, sur http://sites.google.com/site/ijcsis

Saleh Khouiledat, & Nour Eddine Lehhouazi. (2022, 04). The evolution of Electronic payment system in Digital economy Case study: japanese ZENGIN Electronic payment system. *Algerian Journal of Economics and Business studies, 02*(01), 61. Consulté le 05 07, 2025

Samir Merbouhi, & Noufyele Hadid. (2017, 01 01). LE PAIEMENT ELECTRONIQUE EN ALGERIE : DELITS ECONOMIQUES ET FINANCIERS. *REVUE NOUVELLE ECONOMIE*, *01*(16), 21. Consulté le 05 05, 2025

Souad Bouchlouche. (2022, 12 04). The challenges of financial inclusion in Algeria and the requirements for its development. *International journal of economic performance, 05*(02), 584. Consulté le 05 2025, 2025

Souria Chenbi, & Saïd Ben Lakhdar. (2019, 04 04). The importance of financial inclusion in achieving development (Enhancing Financial Coverage in the Arab Republic of Egypt). *Journal Of Research in Finance and Accounting, 04*(01), 107-108. Consulté le 05 05, 2025.