

Algerian Digital Banking Services as a Mechanism to Promote Financial Inclusion - Analytical study for the period 2019-2021-

الخدمات المصرفية الرقمية الجزائرية كألية لتعزيز الشمول المالي - دراسة تحليلية للفترة 2019-2021-

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Abstract:

This study aims to explore the mechanism of digital banking services in Algeria and their role in promoting financial inclusion and achieving economic growth at both the global and national levels. The study relied on a descriptive approach by conducting an analysis of the Algerian economy during the period from 2019 to 2021, examining how the digitization of banking services can improve financial inclusion. Through two hypotheses (null and alternative), the study found a positive relationship between digital banking services and financial inclusion. The increase in the use of digital services is explained by the greater access individuals have to financing, leading to the rejection of the null hypothesis and the acceptance of the alternative hypothesis, which suggests that digital banking services can contribute to enhancing financial inclusion in Algeria.

Keywords: electronic banking services, financial inclusion. Economic growth, the Algerian economy.

JEL Classification Codes: G21, O16, O40, O55.

الملخص:

تهدف هذه الدراسة إلى استكشاف آلية الخدمات المصرفية الرقمية في الجزائر ودورها في تعزيز الشمول المالي وتحقيق النمو الاقتصادي على الصعيدين العالمي والوطني. اعتمدت الدراسة على المنهج الوصفي من خلال إجراء تحليل لحالة الاقتصاد الجزائري خلال الفترة من 2019 إلى 2021، وكيف يمكن لرقمنة الخدمات المصرفية أن تحسن الشمول المالي. من خلال فرضيتين (العدمية والبديلة)، توصلت الدراسة إلى وجود علاقة إيجابية بين الخدمات المصرفية الرقمية والشمول المالي. حيث أن ارتفاع استخدام الخدمات الرقمية يفسر بزيادة حصول الأفراد على التمويل، مما أدى إلى قبول الفرضية البديلة القائلة أن الخدمات المصرفية الرقمية يمكن أن تساهم في تعزيز الشمول المالي في الجزائر.

الكلمات المفتاحية: الخدمات المصرفية الرقمية، الشمول المالي، النمو الاقتصادي، الاقتصاد الجزائري.

تصنيف JEL: O55, O40, O16, G21

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Introduction:

The concept of financial inclusion has gained significant prominence globally, especially after the 2008 global financial crisis and exacerbated by the COVID-19 pandemic, which cast shadows over both advanced and developing economies alike. These conditions have posed substantial challenges to the role of financial institutions amidst precautionary measures and the scale of the informal economy.

In response to these challenges, central banks and financial institutions have increasingly focused on achieving financial inclusion as a key strategic goal alongside monetary stability. The importance of financial inclusion lies in its close relationship with economic growth rates. It aims to achieve comprehensive growth by enhancing access for all segments of society to financial services and products, empowering individuals to participate actively in economic activities and improving their living standards. Facilitating access to funding sources enables small and medium-sized enterprises to obtain necessary financing for their growth and development, thereby creating new job opportunities and stimulating economic growth. Efficient distribution of financial resources ensures directing them towards the most productive investments, thereby promoting sustainable economic growth. Financial inclusion also contributes to reducing the cost of capital, encouraging investment, and enhancing market attractiveness for investors.

Amid globalization and rapid technological advancements, digital banking services have become a fundamental necessity for achieving financial inclusion. These services facilitate easy access to financial services, especially in remote areas and communities with limited income. Therefore, Algerian banks must keep pace with these developments by modernizing their services (updating technological infrastructure, developing new services tailored to different segments of society, simplifying procedures, and facilitating access to services) and leveraging modern technology (using digital applications and artificial intelligence to provide personalized services, enhancing financial literacy through digital platforms, and promoting the culture of digital financial transactions).

Financial inclusion is not merely a theoretical concept but a critical necessity to ensure sustainable economic growth and provide equal opportunities for all. Through the commitment of Algerian banks to their social responsibilities and adopting best global practices, financial inclusion can be achieved, opening new horizons for development and prosperity in Algeria.

The problem statement of this study can be summarized as follows:

To what extent do digital banking services contribute to enhancing financial inclusion in Algeria, theoretically?

This study aims to clarify the significant importance of digital banking services in the present time, defining financial inclusion and its relationship with growth, as well as explaining the role of digital banking services in enhancing financial inclusion.

On this basis, the following hypotheses can be put forward:

H0(Null hypothesis): Digital banking services cannot contribute to enhancing financial inclusion in Algeria.

H1(Alternative hypothesis): Digital banking services can contribute to enhancing financial inclusion in Algeria.

This study is based on the descriptive approach by analyzing the study variables, which are electronic banking services and financial inclusion, where these variables interchangeably serve as independent and dependent variables. Additionally, the study employs an analytical approach to explore the role of Algerian digital banking services in promoting financial inclusion.

In this study, I relied on a theoretical analytical methodology to examine the role of electronic banking services in promoting financial inclusion in Algeria. I gathered data from various sources, including academic literature and official reports, focusing on describing the main variables. Among these variables, I addressed the number of active banks and financial institutions in Algeria, as well as the number of bank branches, reflecting the extent of banking services. The data also highlighted the ownership of accounts in financial institutions as a percentage of adults over 25, underscoring the level of financial inclusion in the country.

Furthermore, I analyzed the development of the number of cards in circulation and the transactions carried out, in addition to the growth of ATMs and digital payment solutions, indicating progress in the financial infrastructure. The focus was also placed on the evolution of online payment activity as part of this analysis. Through descriptive analysis, I compared the relationships between electronic banking services and financial inclusion, emphasizing how the use of these services affects access to financing. Despite not using computer software, I was able to derive meaningful results based on the available information and analyze it critically.

The research question is approached through two main axes: the first axis reviews the literature on digital banking services and financial inclusion, while the second axis examines Algerian digital banking services as a mechanism for enhancing financial inclusion.

First Axis: Literature of digital banking services and financial inclusion

I. Digital banking services:

1. Definition of digital banking services and their types:

Digital banking services are defined as "conducting banking operations innovatively through digital communication networks, whether related to traditional or new banking activities. Access to digital banking services is restricted to participants only, based on authentication conditions set by the bank. Under this model, clients are not required to physically visit the bank. (Adwan, 2015)

Digital banking, also known as electronic banking, is defined as "conducting banking operations electronically using new information and communication technologies, whether related to traditional or new banking activities. Under this model, customers are not required to physically visit banks if they can perform desired transactions from anywhere and at any time. (Waseem Haddad et al, 2012)

Digital banking services are automated services provided through banks' digital platforms. These platforms allow customers to request services using the communication channels provided by the banks, enabling the delivery of these services to customers without them having to visit the bank's headquarters or branch." (Didouche & Hariri, 2022)

The emergence of banking services through electronic banks, which efficiently provide banking services electronically, and their pursuit of exploring new technologies to offer the best banking services to compete for a larger customer base, has resulted in a significant leap in the financial

products and services industry. This has led to several developments, ultimately leading to the provision of more advanced banking and financial services. Moreover, the rapid technological advancements in communication systems, software, and hardware have led to extremely fast processing of banking transactions. (Attia, 2014)

Hence, digital banking services are those services provided using information and communication technology through electronic media such as telephone, computer, ATM, digital television, internet, etc., at the lowest costs, saving time and speed in obtaining them. The means and tools of electronic banking have developed with the development of information and communication technology, and several channels for electronic banking have emerged, including:

- Automated Loan Machine: It is a self-service banking device used with the assistance of a terminal computer, enabling customers to obtain a loan by inputting financial information such as their social security number .(Al-Samadi, 2003)
- ATM (Automated Teller Machine) is defined as a programmed "machine" that securely holds money in a specific manner. It can recognize its corresponding card, allowing the insertion of a cash amount covered by the cardholder's balance. This machine also has a limited currency capacity, serving as an emergency service while also saving customers time .(Abdelhadi, 2016) And we can distinguish two types of ATMs as follows :(Dr. Youssef Hassan Youssef, 2012)
 - D.A.B (Distributeur Automatique de Billets): This is an automated machine that allows customers, using an electronic card, to withdraw money without needing to visit a branch.
 - G.A.B (Guichet Automatique de Billets): This is a more sophisticated and versatile automated machine. In addition to cash withdrawal, it offers other services such as accepting deposits, requesting checks, and performing account transfers. All these services are available through the automated paper windows connected to the bank's main computer.
- Electronic Points of Sale (EPOS): These are machines found in various commercial and service establishments, offering different types of products and services. Customers can use plastic or smart cards to make payments by electronically debiting their accounts. This is done by swiping these cards through these machines, which are electronically connected to the bank's computers. (Waseem Haddad et al, 2012)
- Phone banking: It is a method of connecting via telephone through which a customer accesses prompts provided by the program for balance inquiries and currency rates. The system automatically responds after the customer calls a specific number, but access to data is only granted upon entering their secret PIN. This allows them to manage their account or utilize services permitted by the program .(Al-Shammari & Dr. Abdul Fattah Zuhair , 2008).
- Home banking or office banking: It refers to the personal account accessible from home, work, or any location, connected to the bank's computer system. Customers can securely perform banking transactions by using their password or PIN to authenticate and complete the desired financial operation .(Didouche & Hariri, 2022)
- Internet banking: This is conducted through the bank's website, providing a channel for performing banking operations such as checking account balances, paying bills, or purchasing specific items. Anyone can use internet banking without needing to open an account at the bank or acquire personal financial software from the bank's end. Sometimes referred to as online banking, it encompasses financial transactions on personal computers where the internet serves as a channel for delivering banking products and services,

facilitating the enhancement of banking activities. (Dr. Ahmed Bouras, Dr. Al-Saeed Brika, 2014)

The achievement of internet banking services occurs through three levels :(Dr. Labza Hisham, Dr. Mohamed El Hadi Daif Allah, 2017)

- Informational Website: This is the basic level of digital banks, often referred to as the minimum electronic banking activity. Here, the bank provides information about its programs, products, and banking services, with most online bank sites being informational in nature.
- Interactive or Communication Website: This allows for interactive communication between the bank and its customers, such as via email, online form submissions, and requests.
- Transactional Website: This level involves the bank conducting its services and activities in an electronic environment. It includes allowing customers to access and manage their accounts, perform cash transactions, pay bills, and utilize all inquiry services.
- Digital Banking Payments and Digital Clearing Services: Digital clearing services were established in 1960, enabling the transfer of funds from customers' accounts to accounts of other individuals or entities at any branch and for any bank in another country. This includes monthly salary payments from an employer's account to employees' accounts, or monthly pension payments from an insurance and pensions agency to beneficiaries. Additionally, banking payments are settled through a real-time gross settlement system within digital clearing services. This system securely transfers and converts financial amounts electronically between bank accounts easily, ensuring payments are processed on the same day with the same value without cancellation or delay .(Dr. Youssef Hassan Youssef, 2012)

2. Electronic Payment Systems:

Electronic payment is a form of financial commitment involving both the buyer and the seller, facilitated through the use of digital communications. It is also known as payments processed through automated clearinghouses, commercial card systems, and digital transfers. (Mohammad Auwal kabir and al, 2015)

An electronic payment system is a method of payment through an electronic network, allowing individuals to pay for goods and services online. According to a Statista report in 2019, the total transactions in the digital payment sector amounted to €3,670,864 million. By 2023, it is expected to increase to €5,921,831 million. (Md Arif Hassan and al, 2020)

Digital payment systems are characterized by a variety of features, including :(Awais Ahmed and al, 2019)

- Confidentiality and Security: Transactions are securely recorded by the bank to ensure utmost secrecy and prevent fraud.
- Efficiency: This system saves time and effort due to its transaction speed.
- Cost-effectiveness: Transactions using these systems are typically low-cost and accessible to all.

The most widely used payment methods include:

- Debit Cards: These are plastic magnetic cards issued by banks to their customers instead of carrying cash. They bear the name and logo of the issuing institution, the cardholder's signature, number, name, account number, and expiry date (Nawari & Hamani, 2020), There are several types of debit cards, including credit cards, instant debit cards, monthly debit cards, check guarantee cards, and smart cards (Dr. Ahmed Abdel Halim Al-Ajami, 2013).

One of the main advantages of debit cards is their ease of use, allowing transactions to be conducted online anytime and anywhere. Customers find it easy to obtain and use these cards as they do not require the purchase of additional software or devices (Zlatko Bezhovski, 2016).

- **Electronic Check:** It is defined as a verified and secured electronic message sent by the issuer of the check to the recipient. The recipient presents this electronic check to an online bank, which processes the check's value electronically and returns it to the recipient, serving as proof that it has been cashed. (Qader & et all, 2020)
- **Digital Cash:** It refers to a cash value stored on a prepaid electronic device, not linked to a bank account, and used as a payment tool. (Rabeh Shillak, 2021).

II. Concept of Financial Inclusion:

1. Definition of Financial Inclusion:

There are various definitions provided for financial inclusion, but they generally agree on the concept defined by the World Bank as the ability to access useful and affordable financial products and services that meet individuals' needs for transactions, payments, savings, credit, and insurance. These services are provided in a responsible and sustainable manner. (Saliha, Hamdi, & Hafifi, 2019)

The United Nations (2006) defined financial inclusion in its publication titled "Building Inclusive Financial Sectors for Development" as the access to credit by all individuals and firms deemed creditworthy, insurance services for all insured individuals and firms, and savings and payment services for everyone. (Bourainy, Saleh, & Elsherif, 2021)

On the other hand, financial inclusion pertains to including groups that should be integrated into the banking system and transformed into customers who engage in loans, deposits, and contribute to profits. (Bahuri, 2019), The International Monetary Fund (IMF) defines financial inclusion as planned and organized efforts aimed at making financial services accessible to everyone, especially the underserved and the poor. (Bourainy, Saleh, & Elsherif, 2021), It is also defined as the provision and expansion of the base of official financial services and products to various segments of society, including all banking transactions, at acceptable rates and in a fair manner characterized by transparency. (Hamdoush, 2020)

In general, financial inclusion is defined as the transformation of all financial services in the informal sector into formal sector services and their delivery to all segments of society in all developing regions, aiming to eradicate poverty and achieve sustainable development.

2. Importance of Financial Inclusion:

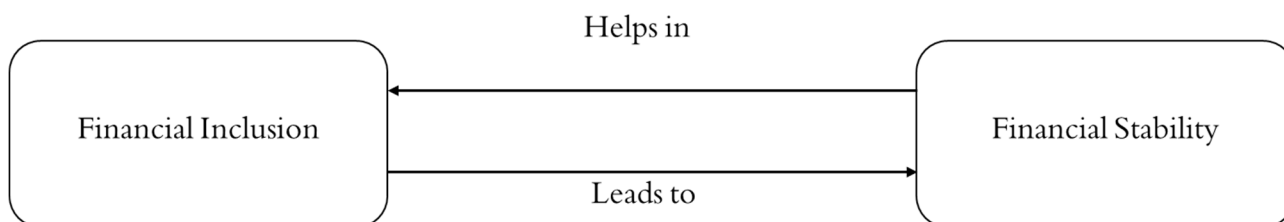
Financial inclusion is considered a tool for countries and governments to improve living standards, achieve economic growth, and ensure financial stability through:

- A close relationship between financial inclusion, financial stability, and economic growth. It is difficult to sustain financial stability when a significant portion of institutions are financially excluded from the economic system. Moreover, financial inclusion enhances competition among financial institutions by diversifying their products, focusing on quality to attract a larger number of customers and transactions, and regulating some informal channels. (Karkar, 2020)

- Social inclusion is achieved by increasing attention to low-income populations, particularly focusing on women and enhancing access for individuals and small to medium enterprises, integrating them into the formal financial sector through financial services. This makes them available to marginalized groups in the public interest to create jobs, thereby contributing to growth and consequently reducing poverty, improving income distribution, and raising living standards .(Al-Bashir, 2020)
- Expanding the reach of financial services and increasing their usage rates requires more services that attract additional users, especially with the technological revolution in communications and electronics witnessed worldwide in the 21st century. The increased reliance on digital financial services, particularly in payments, benefits both senders and receivers, as well as the financial institutions providing these services. Payments are processed faster and at lower costs, while the financial system benefits from improved ability to track and monitor money movements to reduce levels of financial crimes, including money laundering and terrorist financing .(Sharaf & Al-Sayegh, 2021)

Figure (01): The Relationship between Financial Inclusion and Financial Stability

Source: prepared by the researchers.



3. Dimensions of Financial Inclusion:

The Alliance for Financial Inclusion (AFI) has worked on establishing a working group that gathers data on financial inclusion to develop dimensions and standards for measuring financial inclusion, including:

- **Access:** Refers to the ability to use financial services from formal institutions and requires identifying and analyzing potential barriers to opening and using a bank account, such as cost and proximity to banking services. Data related to access to financial services can be obtained through information provided by financial institutions. (Bakhta & Akun Abdullah, 2018)
- **Usage:** Refers to the extent of customers' utilization of financial services provided by banking institutions. Determining the usage of financial services requires collecting data on the regularity and frequency of usage over a specific period of time .(Mohamed, Bouguerra, & Saed Bakhouch, 2020)
- **Quality:** The process of setting indicators to measure quality itself poses a challenge. As the concept of financial inclusion gained prominence among developing nations, improving access to financial services became an unclear dimension. Numerous factors influence the quality and type of financial services, such as cost, consumer awareness, effectiveness of compensation mechanisms, consumer protection services, financial guarantees, transparency of competition, and intangible factors like consumer trust... (Yasmina & Yahya , 2021) .

Table 01: Dimensions of Financial Inclusion and Measurement Indicators according to the World Bank

| Dimension | Measurement Indicators |
|-------------------------------|---|
| Access to financial services | <ul style="list-style-type: none"> - Number of access points per 10,000 adults at the national level disaggregated by administrative unit. - Number of ATMs per 1,000 square kilometers. - Digital currency accounts. - Percentage of total population living in administrative units with one access point. |
| Usage of Financial Services | <ul style="list-style-type: none"> – Percentage of adults with a permanent bank account or a regular deposit account. – Percentage of adults with at least one type of credit account. – Percentage of adults holding a bank account in the past year. – Number of mobile payment transactions. – Number of insurance policies per 1000 adults. |
| Quality of Financial Services | <ul style="list-style-type: none"> – Transparency: Percentage of customers reporting clear and sufficient information about financial services at the beginning of financial loans. – Consumer Protection: Existence of laws and systems to ensure consumer rights protection and access to justice for financial disputes. – Convenience and Ease: Percentage of adults with financial literacy, ability to plan, budget, and understand financial terms. |

Source : (Zahra & Bin Abdel Fattah , 2020)

Second Axis: The role of Algerian digital banking services in enhancing financial inclusion

The Global Financial Inclusion Report 2021, issued by the World Bank on June 29th last year, revealed that the COVID-19 pandemic accelerated financial inclusion and led to a significant increase in digital payments amid the high expansion of formal financial services. The report emphasized that this expansion created new economic opportunities and narrowed the gender gap in account ownership, helping households build resilience to improve financial shock management. It highlighted that now 76% of adults worldwide have an account with a bank or another financial institution, or use mobile financial services, compared to 68% in 2017 and 51% in 2011. According to the World Bank, growth in account ownership was evenly distributed across many countries, and the pandemic also increased the use of digital payments. For the first time since the establishment of the Global Financial Inclusion Database in 2011, the survey found that the gender gap in account ownership has narrowed. The Middle East and North Africa region made progress in reducing the gender gap in account ownership from 17 percentage points in 2017 to 13 percentage points. It was revealed that now 42% of women have accounts compared to 58% of men .(Al-Saadawi, 2022).

1. The Status of Digital Banking Services in Algerian Banks:

Over the past few years, there has been considerable discussion in Algeria about modernizing the financial and banking sector, albeit as part of a comprehensive reform of this sensitive sector, which can be described as the engine of the economy. It represents one of its most vital aspects, especially as Algeria approaches actual integration into international economic dynamics. On the other hand, modernization implies the integration of information and communication technology into financial and banking activities, necessitating the modernization of all payment systems, banking services, financial transfers, and internal banking regulations. Regarding digital banking, Algerian public banks handle a range of digital banking services, which include six main types: website services, ATM services, telephone banking, credit cards, mobile banking, and internet banking. (Adnan, 2021).

It can be said that Algerian public banks are keeping pace with banking developments by providing essential services needed by customers, aiming to facilitate access to services and achieve financial inclusion.

In this context, most Algerian public and private banks have established digital banking services to facilitate customer access and provide information about various services and offers offered by the banks. Among these banks are: (Dr Wafi & Dr. Daoudi, 2017)

- Bank of Algeria: www.bank_of_algeria.dz
- Algerian External Bank (BEA): www.bea.dz
- Local Development Bank (BDL): www.bdl.dz
- People's Credit Bank of Algeria (CPA Bank): www.cpa_bank.com
- National Fund for Savings and Reserves (CNEP Bank): www.cnepbanque.dz
- National Agricultural Mutual Fund (CNMA): www.cnma.dz
- Al Baraka Algerian Bank: www.albaraka_bank.com
- National Banking Institution (Bank ABC): www.bank_abc.com
- Société Générale Algeria: www.societegenerale.dz
- BNP Paribas Algeria: www.bnpparibas.dz
- Gulf Bank Algeria: www.ag_bank.com
- Bank of Agriculture and Rural Development (Badr Bank): www.badr_bank.net
- National Bank of Algeria (BNA): www.bna.com.dz

2. Financial Inclusion Policies in Algeria:

The Central Bank of Algeria has promoted financial inclusion by establishing rules and legislations governing banking transactions and ensuring compliance of financial institutions with these regulations. (Boulahbal & Najibullah, 2019)

The Governor of the Central Bank of Algeria affirmed on the Arab Day of Financial Inclusion, April 27, 2020, that Algeria's banking sector is entering a new phase. The bank is set to implement numerous measures aligned with international standards aimed at promoting financial inclusion. This includes coordinating with all stakeholders in the banking industry. The initial phase focuses on educating and raising awareness among youth about financial literacy principles based on international standards.

Financial inclusion is recognized as a fundamental element for banking sector development and an effective tool for economic growth. Algerian banks and financial institutions are contributing to this by financing small and medium enterprises. Additionally, the Central Bank of Algeria has collaborated closely with the Ministry of National Education to commemorate the Arab Day of Financial Inclusion. In this context, Algeria has established regulatory frameworks aimed at enhancing and deepening financial inclusion to cater to all customer segments.

One of the most significant regulations issued by the Central Bank of Algeria dates back to March 15, 2020. This regulation formalized Islamic banking transactions as part of national financing responses to meet the demands of a large segment of users. Furthermore, to encourage the use of digital products, the Central Bank of Algeria introduced a system during the same period that offers

free banking services (debit cards, annual account statements, ATM usage), incentivizing customers to adopt non-cash payment methods. This initiative also encourages banks to innovate and offer new products in line with technological advancements.

In this regard, the number of banks and financial institutions in Algeria reached 27 by the end of December 2021, with their headquarters located in Algiers. Banks and financial institutions are distributed according to the nature of their activities as follows :(Algeria, 2020)

- Six (06) public banks.
- Thirteen (13) private banks with foreign capital, including one mixed-capital bank.
- Two (02) public financial institutions.
- Five (05) institutions specialized in financial leasing, including three (03) public ones.
- One (01) mutual insurance company for agricultural insurance authorized to conduct banking operations, which obtained financial institution status at the end of 2009.

Table No. (02): Number of Active Banks and Financial Institutions in Algeria

| | 2017 | 2018 | 2019 | 2020 | 2021 |
|--------------------------------|------|------|------|------|------|
| Banks | 20 | 20 | 20 | 20 | 19 |
| Public Banks | 6 | 6 | 6 | 6 | 6 |
| Private Banks | 14 | 14 | 14 | 14 | 13 |
| Financial Institutions | 9 | 8 | 8 | 8 | 8 |
| Public Financial Institutions | 6 | 6 | 6 | 6 | 6 |
| Private Financial Institutions | 3 | 2 | 2 | 2 | 2 |
| Total | 29 | 28 | 28 | 28 | 27 |

Source :Prepared by researchers based on reports bank of algeria (bank of algeria, 2024)

As for bank branches and financial institutions in Algeria, the network now includes 1,603 branches, comprising 1,202 branches belonging to public banks and 401 branches belonging to private banks. For financial

institutions, the number of branches reached 97 by the end of 2021. Overall, the total number of branches for the entire banking system and financial institutions in 2021 was 1,700 branches, compared to 1,671 branches in 2020, indicating an increase of 29 branches in 2021.

Table (03): Number of Active Bank Branches in Algeria

| | 2017 | 2018 | 2019 | 2020 | 2021 |
|--------------------------------|------|------|------|------|------|
| Banks | 1501 | 1525 | 1551 | 1575 | 1603 |
| Public Banks | 1142 | 1155 | 1172 | 1185 | 1202 |
| Private Banks | 359 | 370 | 379 | 390 | 401 |
| Financial Institutions | 94 | 92 | 91 | 96 | 97 |
| Public Financial Institutions | 77 | 76 | 75 | 79 | 79 |
| Private Financial Institutions | 17 | 16 | 16 | 17 | 18 |
| Total | 1595 | 1617 | 1642 | 1671 | 1700 |

Source :Prepared by researchers based on reports bank of algeria (bank of algeria, 2024)

Ownership of a bank account by every adult is considered the first step towards broader financial inclusion, and it is among the goals of the Global Financial Inclusion Indicators governed by national authorities and credit organizations. The following table illustrates account ownership in financial institutions as a percentage of adults aged 25 years and above in Algeria.

Table 4: Account Ownership in Financial Institutions as a Percentage of Adults Aged 25 Years and Above in Algeria

| Years | 2011 | 2014 | 2017 |
|------------|------|------|------|
| Percentage | 39.7 | 57 | 49 |

Source :(Hassan, 2023).

We notice fluctuations in the percentage of adults holding accounts in financial institutions above the age of 25 in Algeria. In 2014, it rose to 57%, then declined to 49% by 2017. This increase was due to public authorities mandating university students to open postal accounts, and also workers to open bank accounts to absorb excess liquidity and formalize the economy.

3. The role of digital banking services in enhancing financial inclusion in Algeria:

Digital banking services are a means to lift people out of poverty, with financial inclusion providing opportunities for more individuals to start their own ventures and earn a steady income. Institutions operating in this field not only offer financial opportunities but also educate people on credit management and business development. Digital banking services enhance financial inclusion by extending their services nationwide.

A. Development of digital bank cards in Algeria: The use of cards has been standardized nationwide (from interbank cards to Algeria Post's gold card). Table 02 illustrates the evolution of the number of cards in circulation and digital banking transactions in Algeria.

Table (05): Evolution of the number of issued cards and transactions completed in Algeria.

| Years | 2019 | 2020 | 2021 |
|---|----------|----------|----------|
| Number of circulating cards | 9287330 | 9444226 | 10712133 |
| Number of transactions completed with bank cards | 11893133 | 59166254 | 85806600 |

Source :Prepared by researchers based on the ALGERIA PRESS SERVICE.2021 (ALGÉRIE PRESSE SERVICE, 2024)

Based on the table data, it is evident that the number of digital cards in circulation has seen a significant increase during the current period, rising by approximately 15% from 2019 to 2021. This reflects efforts to expand the use of bank cards in Algeria, making them accessible to all customers and achieving financial inclusion. However, this number remains relatively low compared to rates achieved in this field by more developed countries. Additionally, the number of digital banking transactions completed with these cards has grown substantially during the same period, increasing by more than seven times in 2021.

B. Development of ATMs in Algeria: The network of ATMs for banknotes within Algeria's postal institution and various active banks in the Algerian financial and banking system has experienced significant expansion during the current period, as indicated by data in Table 03:

Table (06): Development of ATMs in Algeria

| Years | 2019 | 2020 | 2021 |
|---|-----------|------------|------------|
| Number of ATMs (Automated Teller Machines) | 1621 | 3030 | 3053 |
| Total number of withdrawal transactions | 9 929 652 | 58 428 933 | 87 722 789 |

Source :Prepared by researchers based on the annual reports giemonetique (giemonetique, 2024)

Based on the table data, we observe a tangible increase of approximately 90% in the number of ATMs for banknotes in Algeria by the end of 2021. This reflects efforts aimed at facilitating customer withdrawals and transfers, as well as ensuring liquidity access for all individuals in the country. Moreover, the total number of transactions performed at ATMs has seen a significant rise during the same period, increasing by about 10 times compared to recent years.

C. Development of Digital Payment Terminals in Algeria: Digital payment terminals distributed across various merchants and economic entities have experienced significant growth in recent years, as indicated by Table 04.

Table (07): Development of Digital Payment Terminals in Algeria

| Years | 2019 | 2020 | 2021 |
|---|---------|---------|-----------|
| Number of digital payment endpoints | 23762 | 33945 | 37561 |
| Total number of payment transactions | 274 624 | 711 777 | 2 150 529 |

Source :Prepared by researchers based on the annual reports giemonetique (giemonetique, 2024)

Based on the table, it is evident that the number of digital payment terminals in Algeria has increased during the study period, reaching over 37,000 terminals by the end of 2021. This has enabled holders of electronic payment cards in Algeria to electronically settle their purchases and services provided by merchants equipped with these devices. This development has contributed to

reducing the risks associated with cash transactions and ensuring convenient access to services for individuals.

D. Internet Banking in Algeria: Table 05 illustrates the evolution of online payment activity in Algeria over recent years.

Table (08): Evolution of Online Payment Activity in Algeria

| Years | 2019 | 2020 | 2021 |
|-------------------------------------|-------------|-------------|-------------|
| Telephone and Communications | 141 552 | 4 210 284 | 1 353 969 |
| Insurance | 8 342 | 4 845 | 8 372 |
| Electricity and Water | 38 806 | 85 676 | 120 841 |
| Administrative Services | 2 432 | 68 395 | 155 640 |
| Sale of Goods | 0 | 235 | 13 468 |
| Other Services | 5 056 | 213 175 | 457 726 |

Source :Prepared by researchers based on the annual reports giemonetique (giemonetique, 2024)

Through the data provided in the table, we observe that online payment activity in Algeria has seen significant development across various available services in recent years. Many customers have resorted to conducting their financial transactions online during this period, especially for paying various bills.

It is noteworthy, however, that despite Algerian financial and banking institutions offering some financial services online, they often struggle with internet coverage issues and frequent disruptions. This negatively impacts customer and economic operator interest in electronic payment methods in Algeria.

4. Challenges of Financial Inclusion in Algeria:

The challenges facing financial inclusion vary between advanced and developing countries, and even among different demographic groups within the same country and region. Globally, only 62% of adults have access to basic financial services such as having a bank account or a mobile money account. Similarly, small and medium-sized enterprises face challenges in accessing credit, limiting their ability to grow and thrive. Algeria ranks 141st globally in achieving financial inclusion according to the World Bank's Financial Inclusion Database, placing it low globally and moderately among Arab countries. This is attributed to the challenges facing financial inclusion in Algerian banks, including: (Kardousi & Brahmia, 2022)

- Lack of development in financial sector infrastructure.
- Weak competitiveness among financial and banking institutions.
- Slow development of non-banking financial institutions.
- Poor telecommunications technology.

- Lack of trust in financial institutions.

Conclusion:

In conclusion, the focus on financial inclusion has become a pressing necessity by facilitating access to banking services for citizens and bringing them closer to these services. Recent years have witnessed a significant spread of digital banking transactions across all banks and financial institutions, especially after the COVID-19 pandemic. The objective was to save effort and time, gain new customers, and expand geographical coverage by introducing new payment systems. There has been a noticeable increase in the use of these systems by customers in Algeria, reflecting efforts by the government to promote modern means and systems nationwide. This underscores the drive to enhance the role of digital banking services in achieving financial inclusion in Algeria.

This leads to the rejection of the null hypothesis (H0), which states that digital banking services cannot contribute to promoting financial inclusion in Algeria. Consequently, the study supports the alternative hypothesis (H1), which suggests that digital banking services can contribute to enhancing financial inclusion in Algeria.

As a general outcome of this study, all forms of digital banking services, including mobile payments, cards, and others, indeed contribute to enhancing financial inclusion in Algeria. They assist customers in accessing financing with ease, anytime and anywhere. However, their adoption in Algeria remains relatively low compared to other countries due to various reasons, including concerns over digital transaction security and others.

Based on the above findings, the following recommendations are proposed:

- Develop low-cost digital financial services by innovating products and services that cater to the actual needs of current and prospective customers, moving away from traditional methods, and closing the gap between men and women in using financial services and products.
- Focus on human resources in banks and provide training that simplifies transactions.
- Learn from successful international experiences in promoting and expanding financial inclusion.
- Public authorities should continuously enhance information and communication technology with the latest technologies to keep pace with modern technology, ensure data and information security, and achieve necessary efficiency in data transfer.
- Accelerate the implementation of modern payment system upgrades and digital payment methods to capitalize on their advantages and fill the gap in this field.

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