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The State of Financial Technology Services in Algeria: An Analytical Study of Electronic Payment Systems (2016–2023)

واقع خدمات التكنولوجيا المالية في الجزائر:
دراسة تحليلية لأنظمة الدفع الإلكتروني للفترة 2016-2023

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Abstract:

This study examines the current state of financial technology services in Algeria, with a particular focus on electronic payment systems. Using a descriptive-analytical approach, it analyzes online payments, automated teller machines (ATMs), electronic payment terminals (EPT), and mobile payment services.

The results show a continuous growth in electronic payment activities during the period 2016–2023, with a significant acceleration during the COVID-19 pandemic. However, adoption remains relatively limited compared to other countries, due to a weak innovation ecosystem, a limited number of active FinTech firms, and low digital payment awareness, highlighting the need to strengthen digital infrastructure, regulatory frameworks, and awareness initiatives.

Keywords: Financial Technology (FinTech), Electronic Payment, Automated Teller Machines (ATMs), Mobile Payment, Algeria, Digital Infrastructure.

Jel Classification Codes: G21, G23, O33, L86.

المخلص:

تهدف هذه الدراسة إلى إبراز واقع خدمات التكنولوجيا المالية في الجزائر، مع التركيز على أنظمة الدفع الإلكتروني، من خلال تحليل الدفع عبر الإنترنت، أجهزة الصراف الآلي، محطات الدفع الإلكتروني، والدفع عبر الهاتف المحمول، بالاعتماد على المنهج الوصفي التحليلي.

توصلت الدراسة إلى أن الجزائر شهدت نموًا متواصلًا في خدمات الدفع الإلكتروني خلال الفترة 2016–2023، مع تسارع ملحوظ خلال جائحة كوفيد-19. غير أن مستوى الانتشار لا يزال محدودًا مقارنة بدول أخرى، بسبب ضعف البيئة الحاضنة للابتكار، قلة الشركات الناشئة، وضعف ثقافة الدفع الرقمي، مما يستدعي تعزيز البنية التحتية الرقمية، الإطار التنظيمي، وبرامج التوعية.

الكلمات المفتاحية: التكنولوجيا المالية، الدفع الإلكتروني، أجهزة الصراف الآلي، الدفع عبر الهاتف المحمول، الجزائر، البنية التحتية الرقمية.

تصنيف JEL: G21، G23، O33، L86.

1. INTRODUCTION

The digital revolution and the rapid advancement of information and communication technologies have brought about profound transformations in the nature of financial services and the mechanisms through which they are delivered. These developments have given rise to a new model of services known as financial technology (FinTech), which is based on leveraging technological innovation to provide financial solutions that are faster, more flexible, and more efficient. FinTech has become one of the key pillars of modernizing financial and banking systems, particularly in light of the

growing reliance on electronic means to conduct transactions and reduce the use of traditional cash-based operations.

Financial technology, especially electronic payment systems, has contributed significantly to reshaping the functional structure of the financial sector by diversifying payment channels, simplifying procedures, and enhancing transaction security. As a result, it has attracted increasing attention from governments and financial institutions worldwide. These systems have also become a strategic tool for keeping pace with digital transformation and improving the performance of monetary

systems, particularly in economies seeking to modernize their financial infrastructure and reduce excessive dependence on cash liquidity.

Within this context, electronic payment systems have emerged as one of the most prominent applications of financial technology, as they represent a critical link between technological advancement and daily economic activity at both the individual and institutional levels. These systems encompass a wide range of tools, including online payments, automated teller machines (ATMs), point-of-sale (POS) terminals, and mobile payment solutions. The degree of adoption and development of these tools varies across countries depending on the regulatory environment, digital infrastructure, and level of technological awareness.

Examining the state and development of financial technology services is particularly important in developing countries, as they are undergoing transitional phases in their financial systems where technical and regulatory challenges intersect with the requirements of modernization and digitalization. In this regard, this study seeks to address the issue of financial technology in Algeria by focusing on electronic payment systems as one of the core components of financial digital transformation.

Research Problem

In light of the global digital transformations witnessed in the financial sector and Algeria's efforts to modernize its banking system and adopt electronic payment instruments, a key issue arises regarding the nature and scope of this transformation and the extent to which it aligns with the requirements of the digital era. Accordingly, the research problem of this study can be formulated as follows:

What is the current state and development of financial technology services in Algeria, particularly electronic payment systems, within the context of financial digital transformation?

Research Questions

- What is meant by financial technology, and what are its main applications in the field of electronic payment systems?
- What types and forms of electronic payment systems are adopted in Algeria?
- How have electronic payment services evolved in Algeria during the period (2016–2023)?
- What are the economic, technical, and regulatory factors influencing the adoption and development of electronic payment systems in Algeria?

Research Hypotheses

- Financial technology represents a set of innovative digital financial services and products, and its applications in Algeria include online payments, mobile payments, and automated teller machines (ATMs).
- Algeria relies on several electronic payment systems, including online payment systems and automated teller machines.
- Electronic payment services in Algeria have experienced continuous growth in terms of both the number and value of transactions.
- The adoption of electronic payment systems is influenced by factors such as digital infrastructure and the spread of internet access and smartphones.

Significance of the Study

The significance of this study lies in highlighting the role of financial technology and electronic payment systems in modernizing the Algerian financial sector and enhancing the efficiency of digital

transactions. It also provides a scientific reference that can support policymakers and financial institutions in developing digital infrastructure and increasing the adoption of electronic solutions.

Objectives of the Study

- To present the current state of financial technology applications and electronic payment systems in Algeria.
- To analyze the development of electronic payment services in Algeria during the period (2016–2023) in terms of the number and value of transactions.
- To identify the factors influencing the adoption and development of electronic payment systems.

2. Concept of Financial Technology

2.1 Definition of FinTech

International and national organizations have provided various definitions of financial technology (FinTech) to enhance understanding and clarify its significance in the financial and economic sectors. Among these definitions:

- The Financial Stability Board (FSB) defines FinTech as: “ Technology-enabled innovation in financial services that can create new business models, applications, processes, or products with a tangible impact on markets, financial institutions, and the delivery of financial services ” (FSB, 2017, p. 7; Andresen, 2017, p. 1).
- According to the FinTech report by Wamda Lab, FinTech is described as: “Products and services that rely on technology to improve the quality of traditional financial services; this technology is faster, cheaper, easier, and accessible to a larger number of individuals” (FinTech Report, 2016, p. 7).

- As per the Bali FinTech Agenda report, FinTech is defined as: “ Technological developments that have the potential to transform the provision of financial services, thereby stimulating the development of new business models, applications, processes, and products ” (IMF, 2018, p. 12).

2.2 FinTech Services

The services provided by financial technology (FinTech) can be summarized as follows (Ghani, 2022):

- **Payment Services:** These include the most active and flexible banking activities enabled by FinTech for a wide range of users and clients. They offer diverse payment methods such as mobile payments, cross-border transfers, and management of payment flows for e-commerce, among others.
- **Retail Banking Services:** These refer to simple banking services directed at individuals via the Internet, without any physical presence of a branch, and at low cost. They also include solutions for personal budgeting and a variety of tools for managing individual finances.
- **Financing and Investment Services:** FinTech attracts individuals’ savings by offering simplified financial products and platforms for crowdfunding, loans, or equity investment for businesses and financial institutions. It also provides online financial advisory services for individuals.
- **Banking Services Based on Big Data:** FinTech offers solutions targeted at the banking sector through the collection and analysis of large datasets, which improve customer relationship management and enhance understanding of consumer behavior, savings patterns, and financial

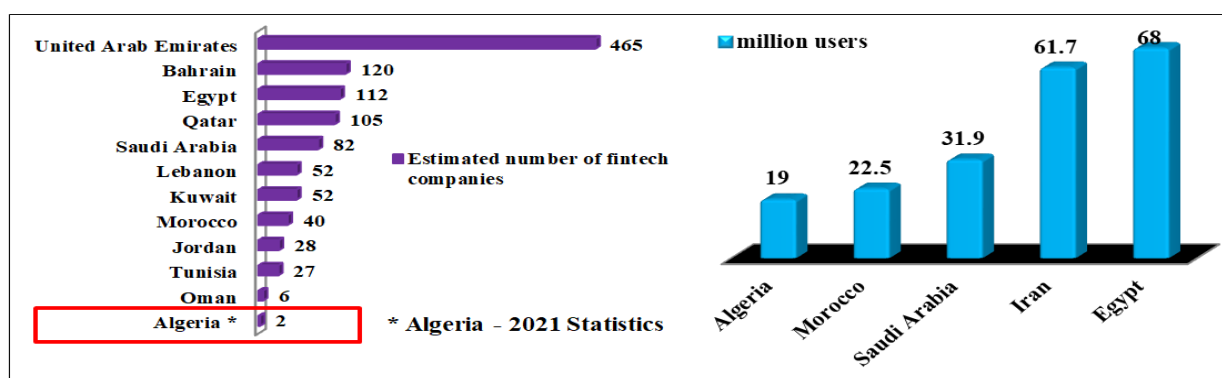
resilience.

- **Services for Banks and Financial Institutions:** FinTech provides multiple solutions to improve corporate management. These include blockchain-based technologies for banks that enhance transaction recording, information processing, risk management, and tax administration, among other applications.

3. Development of Financial Technology Services in Algeria

Every strategy aimed at developing the financial sector relies fundamentally on financial technology, which constitutes a key enabler of such strategies and a crucial driver for the expansion and dissemination of financial services. An analysis of the status of fintech companies in Algeria reveals a significant lag compared to countries in the Middle East and North Africa, which have made substantial progress in this field in line with the global digital transformation, as illustrated in the following figure.

Figure (1): Distribution of Financial Technology Markets in the Middle East and North Africa by Market Size and Number of Companies, 2022



Source: Prepared by the authors based on: (The fintech times, 2023, pp. 34-35; Ramadan, 2022; Kame, 2022)

It is evident that Algeria is among the most attractive markets for financial technology in the Middle East and North Africa, ranking fifth with 19 million users of non-banking financial applications in the

region. This indicates that Algeria possesses a strategically promising market through which it seeks to support companies providing non-banking fintech services. However, despite this potential, Algeria still

lags significantly in the actual integration of finance and technology, as reflected in the number of fintech companies.

While some countries with smaller populations and territories host more than 400 fintech companies, Algeria has only two officially recognized firms, including Esref Pay, which is the only Algerian company operating in online commercial activities (Startup in Algeria). This demonstrates that the spread of fintech companies in Algeria is very limited compared to the leading countries. This lag can be attributed to the absence of a supportive ecosystem for establishing such companies, as well as the lack of regulatory sandboxes that allow fintech firms and traditional financial institutions to test innovations in real-world conditions. Consequently, fintech activity in Algeria is largely confined to designing solutions and software for banks and Algérie Poste.

For context, Egypt ranks first in the region with 68 million users, followed by Iran with 61 million, Saudi Arabia with 31 million, and Morocco with approximately 22 million users of non-banking financial applications.

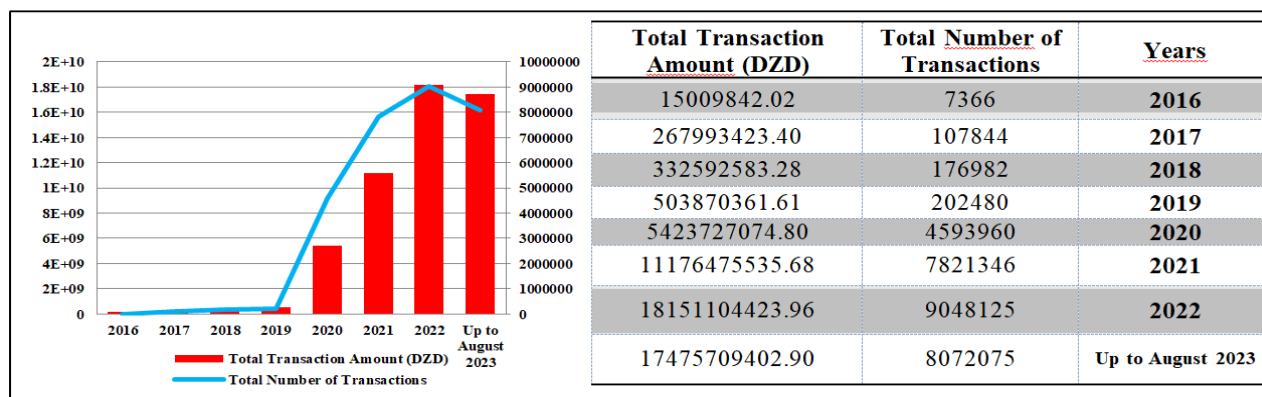
It should be noted that Algeria has legislation regarding cybercrime and information security (ITU, 2017, p. 54).

Growth in the number of fintech companies is expected, particularly following the establishment of a ministry dedicated to small and medium-sized enterprises, startups, and the knowledge economy. This ministry aims to create a legal, regulatory, and operational framework for startups by developing a roadmap to support and finance such enterprises, enabling them to play a significant role in the national economy (Agence de presse algérienne, 2020).

4. Online Payment Service in Algeria

This service was officially launched in Algeria on October 4, 2016, through interbank payment cards (CIB), allowing cardholders to pay bills and services online via authorized commercial websites. The launch coincided with the introduction of the website bitakati.dz, an electronic portal dedicated to cardholders and merchants, providing information on how to enroll in the service offered by their banks (GIE Monitique). According to the GIE Monétique website, there are currently 379 online merchants participating in the interbank electronic payment system. Since the launch of online payment, approximately 30,030,178 transactions have been processed, amounting to more than 35 billion Algerian dinars, distributed and illustrated in the following table and figure.

Figure (2): Volume of Online Payment Services in Algeria (2016–August 2023)



Source: Prepared by the authors based on: (GIE Monitique)

Overall, as noted above, the positive and continuous growth in online transactions in Algeria during the study period (2016–August 2023) is clearly evident. During the early years of the service’s launch, between 2016 and 2019, growth was relatively stable and somewhat lower compared to the subsequent years. A significant surge in both transaction value and volume was observed from 2020 to August 2023. In 2021, the total transaction value exceeded 11.17 billion Algerian dinars for approximately 7.82 million transactions, representing a 106% increase in value compared to 2020, accompanied by over 70% growth in the total number of online transactions for the same period.

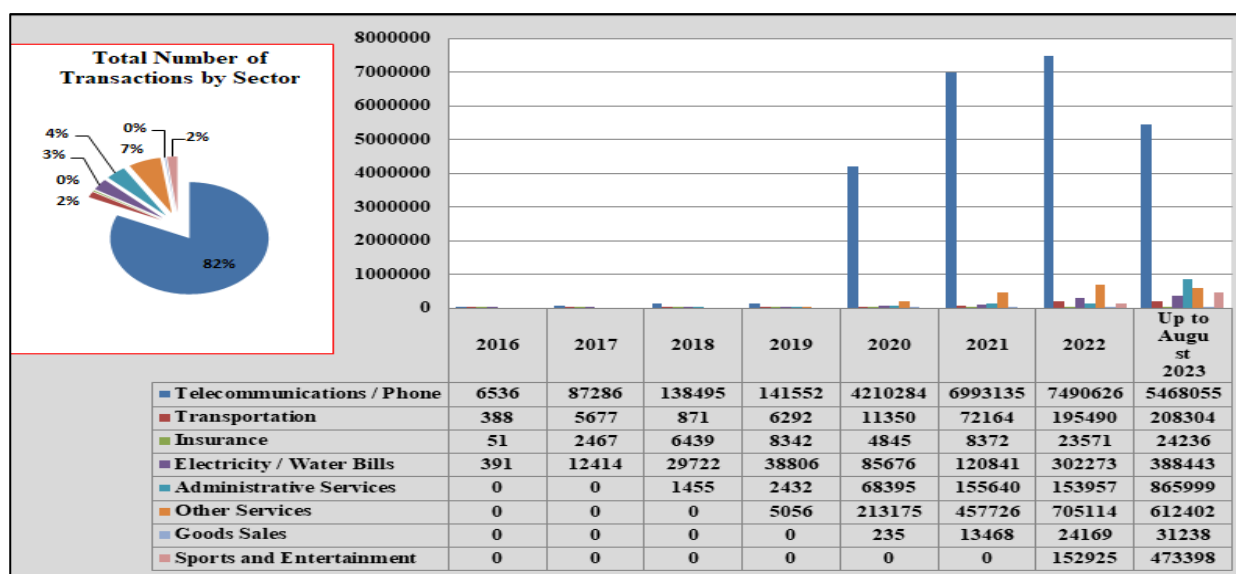
This growth continued in 2022, albeit at a slower pace, with the total transaction value reaching around 18.15 billion Algerian dinars across more than 9.04 million

transactions, reflecting growth rates of 62% and 15% in value and volume, respectively, compared to 2021.

The fluctuation in the growth of online transactions, both in value and number, can be attributed to several factors, the most notable being the global COVID-19 pandemic. The crisis had a positive impact on the growth of the fintech sector in Algeria through “payment solutions,” which experienced significant recovery due to the health crisis’s local and global repercussions, as individuals increasingly preferred to conduct their transactions online. This trend also encouraged an increase in the number of payment cards (to be discussed later).

It is worth noting that online payment services in Algeria have so far been limited to service-oriented economic activities and have not yet covered all economic sectors, as illustrated in the figure below.

Figure (3): Number of Online Payment Transactions by Sector in Algeria (2016–August 2023)



Source: Prepared by the authors based on: (GIE Monitique; GIE Monitique)

Based on the statistics and the figure above, online payment transactions in Algeria have so far been largely limited to the

settlement of telecommunications and internet bills, including mobile top-ups. This trend became particularly evident during the

COVID-19 pandemic, with these transactions accounting for the lion's share—82%—of the total number of transactions in this sector, representing over 24.53 million transactions.

It is also noteworthy that the sports and entertainment sector appeared for the first time in 2022 among the sectors benefiting from online payment services in Algeria. This is likely due to the sale of sports event tickets through the online platform *tadkirati.mjs.gov.dz* (électronique Tariq News), which is the first of its kind for purchasing match tickets online during the 2023 Africa Cup of Nations qualifiers.

Several factors indicate the continued growth of online payment services in Algeria in the future. Among these is the significant increase in online transaction volumes during the first months of 2023, with the total transaction value exceeding 17.47 billion Algerian Dinars across approximately 8.07 million transactions. This represents more than half of the total online transaction volume recorded for the entire year of 2022, reflecting a growing reliance by both individuals and businesses on online payments for their transactions.

The COVID-19 pandemic also contributed to this trend by encouraging citizens to shop and request various services online to facilitate daily life. Supporting evidence can be seen in the increase in the number of internet users in Algeria, which reached 27.28 million in 2022, corresponding to a penetration rate of 60.6% of the total population—an increase of 1.8 million users, or 7.3%, between 2021 and 2022. This surpasses the average internet penetration rates in leading African countries such as Kenya and Nigeria (42% and 51%, respectively) and exceeds the global growth

rate, which has stagnated at around 4%. This indicates that Algeria is on the path to joining the ranks of countries with advanced internet penetration (Kemp, 2022; Digital , 2022, pp. 22-23; Anis Ababsia, 2022, p. 3), which will inevitably lead to a further rise in online payments, especially as citizens become increasingly accustomed to online consumption and shopping.

Furthermore, the presence of local platforms such as Ouedkniss among the most visited websites in Algeria highlights the significant role of this trend, particularly for locally available products.

5. ATM Withdrawal Service in Algeria **(Automated Teller Machines – ATMs)**

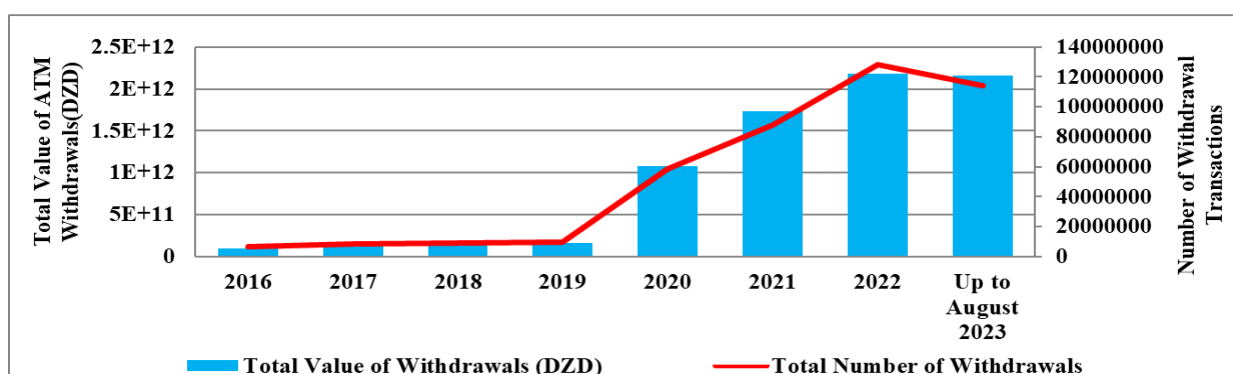
The first use of automated teller machines (ATMs) in Algeria dates back to 1975, when two ATMs were installed, operating for a very short period of time (Lazreg Mohammed, 2016, p. 31). The sector has since witnessed significant expansion and development over the last two decades compared to its early days.

To analyze the activity of this service in Algeria, two main aspects will be addressed. The first relates to the analysis of ATM withdrawal transactions, while the second focuses on the analysis of the volume of electronic payment cards, as follows:

5.1. ATM Withdrawal Transactions **Activity**

As of August 2023, Algeria has more than 3,700 ATMs, representing an increase of over 3.5%. This growth is considered relatively encouraging compared to the full year of 2022 (GIE Monitique; bank of algeria, 2022). The figure below illustrates the continuous growth in ATM withdrawals in Algeria, both in terms of transaction volume and value.

Figure (4): ATM Withdrawal Activity in Algeria (2016–August 2023)



Source: Prepared by the authors based on: (GIE Monitique)

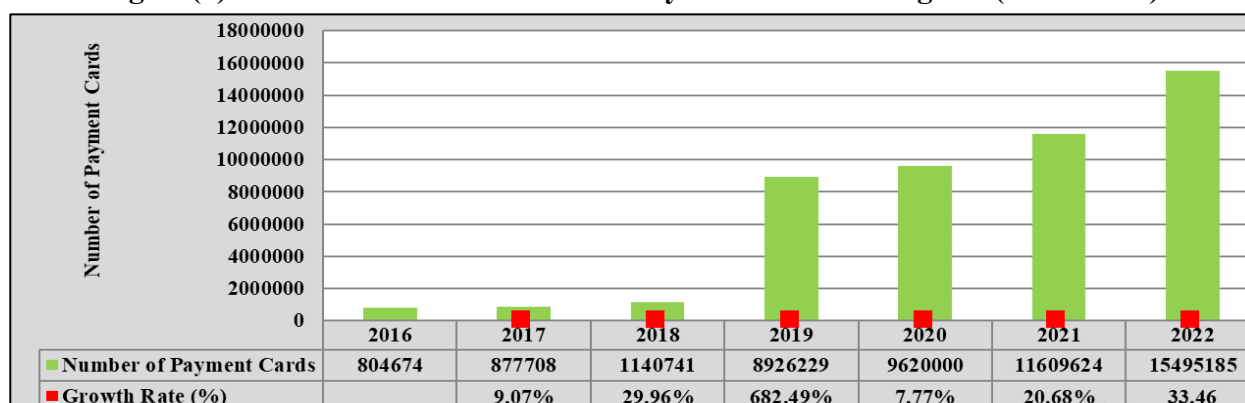
ATM withdrawal activity, as illustrated in the figure above, experienced a significant surge in 2020. The total value of withdrawals reached approximately 1.07 trillion Algerian Dinars, reflecting a growth rate of 554%, accompanied by over 48 million withdrawal transactions, representing a growth rate exceeding 488% compared to 2019. This growth continued throughout 2021 and 2022 up to August 2023, albeit at a slower pace than in 2020. By August 2023, the total value of ATM withdrawals reached around 2.15 trillion Algerian Dinars across approximately 114 million transactions. These figures indicate a substantial increase in ATM

withdrawal activity in Algeria when compared to the full year of 2022.

5.2. Development of Payment Cards Issued by Banks and Algérie Poste

Statistics indicate that approximately 11 million Algerians, or around 23% of the population, possess a payment or credit card. This rate is similar to that of other North African countries, but somewhat lower than in more advanced African nations such as Kenya and Nigeria, where electronic payment coverage ranges between 35% and 45%, respectively. Naturally, these rates are significantly higher in other parts of the world (Anis Ababsia, 2022, p. 11).

Figure(5): Evolution of the Number of Payment Cards in Algeria (2016–2022)



Source: Prepared by the authors based on: (Ibeghouchene Saadia, 2022, p. 559; GIE Monitique)

As illustrated in the figure above, the number of payment cards continued to grow steadily over the period (2016–2022),

increasing from 804.6 thousand cards in 2016 to 11.6 million cards by the end of 2021. It can be observed that the number of payment

cards in circulation in Algeria remained very low during the initial years from 2016 to 2018 compared to the subsequent years of the study. However, a significant surge occurred in 2019, with a growth rate exceeding 680%, as the number of cards reached 8.9 million—an increase of approximately 7.7 million cards compared to 2018. This positive growth trend continued and peaked in 2022, recording a growth rate of 33.46%, as the number of payment cards rose from 11.6 million in 2021 to 15.4 million in 2022. This increase is mainly attributed to the agreement signed between the Interbank Monetary Group (GIE Monétique) and Algeria Post, which enabled the expansion of cardholders to more than 15 million cards.

According to the latest annual report of the Interbank Monetary Group for 2022, interbank payment cards in Algeria are distributed among commercial banks, accounting for approximately 2.8 million cards, representing 24% of the total cards in circulation, compared to 8.9 million “Golden Cards” issued by Algeria Post, representing 76%. About 90% of the total cards in circulation benefit from online payment services. Moreover, all circulating cards represent nearly 40% of the total number of

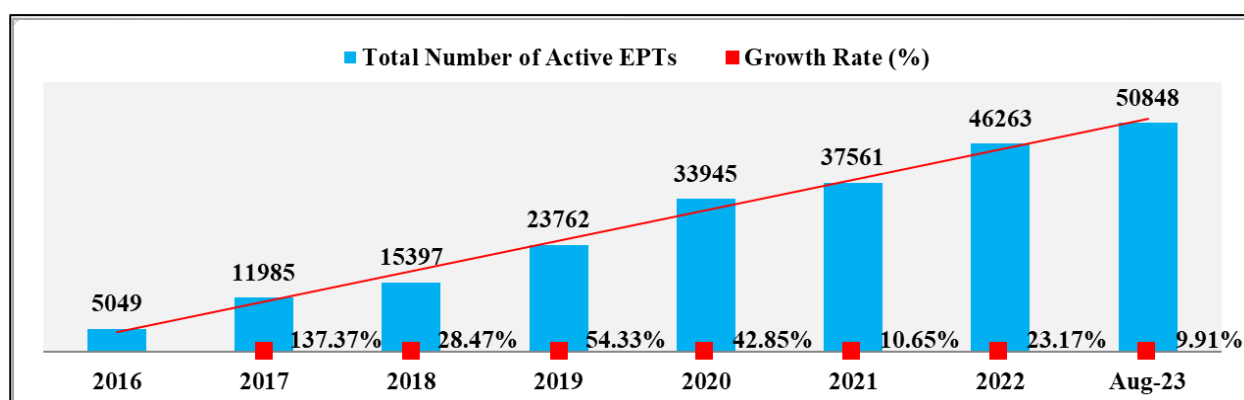
current accounts held at banks and Algeria Post, which amount to approximately 29.13 million accounts. The total number of bank cards is expected to exceed 16 million by 2024, including 13 million Golden Cards (Algérie Presse Service, 2022).

It can therefore be concluded that the development observed in Algeria’s monetary activity—both in terms of the volume of ATM withdrawal transactions and the number of payment cards—results from the efforts of Algerian authorities and relevant institutions to modernize the banking sector through the adoption of an efficient electronic payment system, particularly under the conditions imposed by the COVID-19 health crisis, which significantly accelerated the pace of this positive growth.

6. Electronic Payment Terminal (EPT) Services in Algeria

Electronic Payment Terminals (EPTs) in Algeria have experienced a noticeable development from 2016 to August 2023. The figure below clearly illustrates the positive and continuous growth trend in the number of electronic payment terminals deployed across the country, reflecting the increasing adoption of this payment infrastructure.

Figure(6): Total Number of Active Electronic Payment Terminals in Algeria (2016–August 2023)



Source: Prepared by the authors based on: (GIE Monétique)

As clearly shown in the figure above, the year 2017 recorded the highest growth rate, exceeding 137%, in the total number of active electronic payment terminals in Algeria. The number of terminals increased from approximately 5,000 units in 2016 to nearly 12,000 units in 2017. This positive growth trend continued until August 2023, reaching around 51,000 active terminals, representing a growth rate of approximately 10% compared to the full year 2022, equivalent to about 4,500 newly deployed electronic payment terminals between January and August 2023.

Overall, the sustained and positive growth in the total number of active electronic payment terminals can be attributed to the launch of the project aimed at generalizing the use of electronic payment terminals among economic operators, which was introduced under the Finance Law of 2018, specifically Article 111. This article obliges merchants to make electronic payment methods available to consumers upon request, allowing them to pay for their purchases using electronic payment cards. Any failure to comply with this obligation is subject to a financial penalty of fifty thousand Algerian dinars (DZD 50,000) (Loi n° 11-17, pp. 46-47).

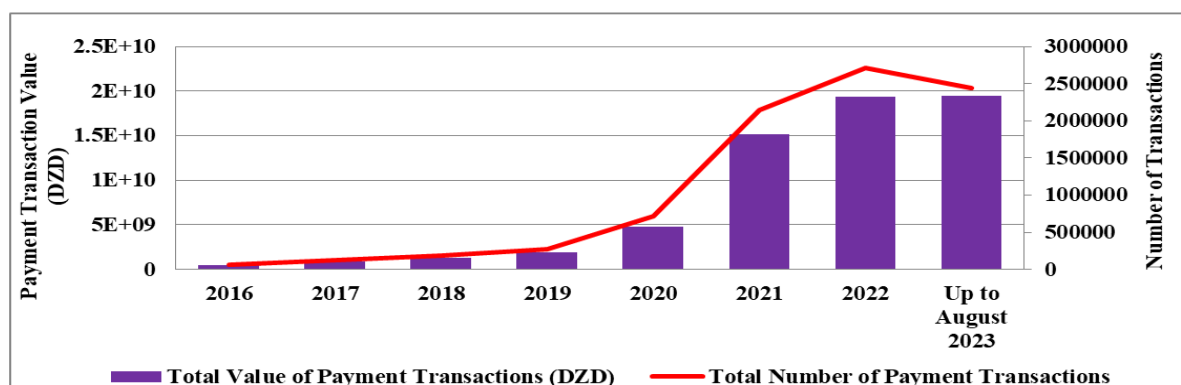
It should be noted, however, that the implementation of this project was delayed

for several years due to the limited production capacity of electronic payment terminals by the National Company of Electronic Industries, the sole manufacturer of such devices in Algeria. In addition, merchants faced difficulties related to weak internet connectivity, which hindered effective usage. The process also suffered from stagnation due to insufficient awareness campaigns and institutional support. Moreover, electronic payment culture remains weak among a large segment of Algerian consumers, mainly due to a lack of trust and limited technological familiarity. This situation highlights the need for further efforts to expand internet coverage and enhance public awareness before enforcing mandatory adoption of electronic payment systems (Belkacem, 2022).

According to the Finance Law of 2022, Article 168 granted merchants an additional deadline to comply with the generalization of electronic payment terminals, setting June 30, 2022, as the final deadline (Loi n° 21-16, p. 64).

During the study period (2016–August 2023), the volume of transactions conducted through electronic payment terminals in Algeria, in terms of both value and number, experienced continuous growth, as illustrated in the figure below.

Figure (7): Transaction Volume via Active Electronic Payment Terminals in Algeria (2016–August 2023)



Source: Prepared by the authors based on: (GIE Monétique)

Statistics, as shown in the figure above, indicate that 2020 and 2021 witnessed a significant surge in the volume of transactions through electronic payment terminals (EPTs) in Algeria. The growth rate in terms of transaction numbers reached 159% and 202%, respectively. The number of transactions increased from approximately 712,000 in 2020 to over 2 million in 2021, reaching more than 2.4 million by August 2023, compared to around 2.8 million for the full year of 2022, marking the highest number of EPT transactions recorded during the study period.

This increase in transaction volume was accompanied by a corresponding growth in transaction value, which rose by 147% and 220% in 2020 and 2021, respectively. The total value of transactions conducted via EPTs reached approximately 19.3 billion Algerian Dinars in 2022, compared to 15.4 billion DZD in 2021, representing an increase of roughly 4.2 billion DZD. Statistics also indicate that this growth continued in 2023, with the transaction value reaching around 19.4 billion DZD for over 1.2 million transactions by August 2023, compared to the full year of 2022.

These increases in both transaction value and volume can be attributed to several factors. Notably, as part of the preventive measures adopted by Algerian authorities

during the COVID-19 pandemic—particularly those aimed at generalizing and facilitating the use of electronic payment methods—Algérie Poste provided EPT devices free of charge to authorized merchants and economic operators at the end of March 2020 for a full two-month period (Agence de presse algérienne, 2020).

7. Mobile Payment Service in Algeria « M-Paiement »

The mobile payment service was recently launched in Algeria in early 2020 by the Interbank Monetary Group (GIE Monétique), allowing consumers to pay for their purchases directly via mobile phones. This service uses a dedicated smartphone application developed by the Group, which is linked to the interbank network to facilitate transactions that are debited either from interbank payment cards (CIB) or Algeria Post's Golden Card (EDAHABIA) (Sadika, 2022, p. 803).

The following section presents an overview of the main mobile payment services currently available in Algeria:

7.1. Mobile Payment Service « BARID PAY »

On August 22, 2020, Algeria Post launched a new mobile payment service called “Barid Pay”, representing a significant technological leap in the field of electronic payments in Algeria (Agence de presse

algérienne, 2022). This service provides a new, highly secure, and user-friendly method of mobile payment based on two-dimensional barcode scanning technology, specifically the Quick Response (QR) Code assigned to merchants.

This type of payment is conducted contactless—without the use of a Golden Card or cash. Transactions are performed

through the Baridimob mobile application, enabling Algeria Post customers to securely transfer funds from their account to the merchant's account. This method helps reduce cash flow problems and liquidity shortages in Algeria (Algérie poste).

Users can access this service by following a series of steps, which are presented in the table below:

Table (1): Procedure for Using the “Barid Pay” Payment Service

For Customers	For Merchants
• Opening the Baridimob mobile application on the smartphone. • Selecting the “Barid Pay” service. • Scanning the merchant’s Quick Response (QR) code. • If the QR code contains a predefined amount, no payment amount needs to be entered; otherwise, the customer must manually enter the purchase amount in the designated field and then select Continue. • Entering the confidential code sent to the customer via SMS to initiate the transaction. • Confirming the transaction by entering the verification code received via text message. • Upon completion, a message stating “Payment successfully completed” is displayed. Simultaneously, a payment notification appears on the customer’s mobile phone, and the merchant receives an SMS confirming the successful transaction.	• Possession of a commercial CCP account and a Golden Card. • Ownership of an active mobile phone number to receive payment notifications. • Ensuring that the mobile phone is always available to display and verify customer payments in real time. • Submission of an application file to the provincial directorate of Algeria Post, including the following documents: ◦ A copy of the commercial register. ◦ A copy of the tax identification card. ◦ A copy of the national identity card (C.I.N) of the manager or an authorized representative. ◦ A cancelled postal check. Note: Merchants can benefit from two types of Quick Response (QR) codes: - Fixed-amount QR code: the fixed amount determined by the merchant is encoded directly into the QR code. - Open-amount QR code: no predefined amount is embedded; in this case, the customer enters the payment amount during the transaction.

Source: Prepared by the authors based on: (Algérie poste)

7.2. Mobile Payment Service «Wimpay BNA»

With the aim of developing electronic banking services and diversifying distribution channels that contribute to accelerating financial inclusion, the National Bank of Algeria (BNA) launched a new mobile electronic payment service on March

18, 2021, under the name «Wimpay BNA» This service is based on Quick Response (QR) code scanning technology and is intended for individual customers, professionals, and enterprises. It can be used via mobile phones 24 hours a day, 7 days a week, from anywhere, including outside Algeria, to request, receive, and transfer

funds from one application user's account to another (Algérie Presse Service, 2021; BNA).

The service offers BNA customers a wide range of features, including payments via QR codes, fund transfers between Wimpay BNA application users, requesting money from other users of the service, budget management, balance inquiries, and access to transaction histories. It also enables users to pay for purchases and utility bills (such as Sonelgaz, SEAAL, and the National Agency for Housing Development and Improvement – AADL, among others).

For businesses, the application allows the acceptance of QR code-based payments in exchange for services rendered, balance monitoring, management of vendors and points of sale, and the display of their operational activities (Ministère des Finances, 2021; BNA).

7.3. Mobile Payment Service «M-pay»

Within the framework of the national digitalization policy, Al Baraka Bank Algeria announced the enhancement of its remote banking services by launching the first smart mobile payment application in Algeria, “M-Pay,” in partnership with Smart Solution & Innovation, a leading company specializing in the development of banking payment solutions. This application enables merchants and customers to receive and make payments for purchases quickly and efficiently, without the need to use cash or bank cards. Payment transactions are carried out through the generation of a Quick Response (QR) code by the merchant, which is sent to the customer's mobile phone to complete the transaction (Baraka Bank).

The main advantage of this solution for both merchants and customers lies in the dematerialization of payment transactions. It also allows for the elimination of issues

related to counterfeit and worn banknotes, as well as small coin shortages. Additional benefits include contactless payments, real-time monitoring of commercial activities, tracking and reviewing previous purchases, and ensuring full confidentiality of sales data. The application has been approved by the Interbank Automatic Clearing and Payment Company (SATIM) and the Interbank Monetary Group, and it complies with international security standards, notably PCI-DSS. To request the “M-Pay” payment service, merchants are required to complete a bank application form to obtain a user account, while customers can access the service by downloading the M-Pay application on their mobile phones and entering their bank card details (Baraka Bank).

The mobile payment services “Barid Pay,” “Wimpay BNA,” and “M-Pay,” considered major qualitative advances in the field of financial technology, aim to promote electronic commerce, absorb funds circulating in the informal market, and reduce the persistent pressure on post offices and banks—particularly in light of the liquidity crisis faced by Algeria. These services also gained importance during the COVID-19 pandemic, as they rely on remote transactions. Moreover, they are fast, user-friendly, low-cost, and offer a high level of security.

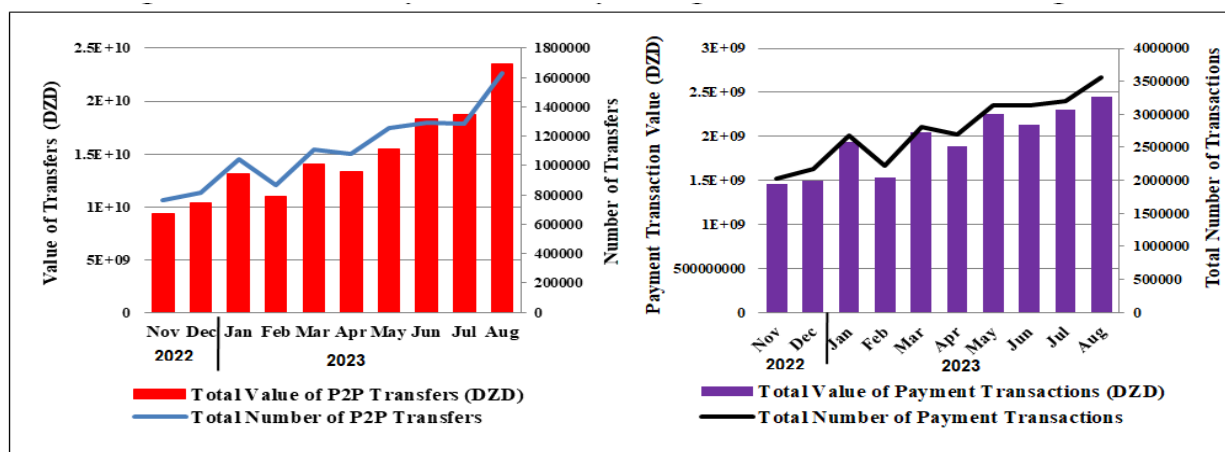
Despite Algeria's ongoing efforts to develop digital payment infrastructure and keep pace with technological advancements in the financial sector, these services have not yet achieved widespread adoption among merchants and customers. This limited uptake can be attributed to a lack of awareness among users, persistent distrust in financial technologies, and a strong preference for cash-based transactions.

Consequently, their contribution to alleviating the cash liquidity crisis in Algeria remains limited.

It is worth noting that mobile payment services officially became operational in Algeria starting in 2022, according to the Interbank Monetary Group. This

implementation was carried out in several phases and is currently limited to Phase One, which allows transactions only within the same financial institution (customer-to-customer within the same bank) (GIE Monétique), as illustrated in the figure below.

Figure(8): Mobile Payment Activity in Algeria (November 2022–August 2023)



Source: Prepared by the authors based on: (GIE Monétique)

As illustrated in the above chart, mobile payment activity has experienced significant growth. In 2022 alone, over 4 million mobile payment transactions were conducted, amounting to a total value of 2.95 billion Algerian dinars, during November and December. In contrast, mobile payments in the first half of 2023 exceeded approximately 16.6 million transactions, totaling 11.7 billion Algerian dinars. Furthermore, financial transfers via mobile during the same period reached 6.6 million transactions, equivalent to more than 85 billion Algerian dinars.

Although electronic payment services have not yet been widely adopted within the Algerian society, it is evident that the electronic payment system in Algeria has witnessed continuous and notable development, particularly due to their ease of use and low transaction fees. Among the latest fintech innovations available in the

country is mobile payment, especially considering that Algeria had approximately 49 million subscribers to 3G and 4G mobile networks in the first quarter of 2023 (ARCPE, 2023, p. 2). Nevertheless, electronic payment services may face challenges in Algeria, such as limited technology adoption and low public awareness of these services. Therefore, awareness campaigns and educational initiatives on the benefits and usage of electronic payment services could be necessary to increase adoption in the future.

8. Conclusion

The study revealed that the fintech sector in Algeria has witnessed notable development in recent years, particularly in the field of electronic payment systems, despite relative delays compared to other countries in the Middle East and North Africa. Internet payment services, ATMs, electronic payment terminals, and mobile

payment solutions all demonstrated continuous growth in transaction volumes and values during the period 2016–2023, with a significant acceleration observed during the COVID-19 pandemic due to changes in consumer behavior favoring remote payments and reduced cash usage.

The study also highlighted that the adoption of electronic payment services in Algeria remains relatively limited in terms of the number of active companies, with data indicating only two officially recognized firms, compared to dozens of companies in smaller markets elsewhere. This reflects challenges related to the enabling environment, the absence of regulatory sandboxes, and weak local innovation.

Furthermore, technical, economic, and regulatory factors play a central role in the adoption of these services, including digital infrastructure, internet and smartphone penetration, supportive legal and regulatory frameworks, and government incentives for financial institutions and startups. However, significant barriers persist, such as a low culture of electronic payments among citizens, limited trust in technology among merchants, and insufficient awareness and training on the use of electronic payment devices.

The study confirms that Algeria possesses substantial potential to develop its fintech sector and electronic payment systems but requires a comprehensive strategy integrating digital infrastructure, supportive legislation, awareness campaigns, and local innovation to fully leverage this vital sector.

Key Findings:

- Despite relative delays, Algeria represents a promising market for electronic payment technologies, making investment in this

sector strategically worthwhile in the long term.

- The development of digital transactions is directly linked to economic, technical, and regulatory factors, emphasizing the critical role of government support and private initiatives.
- The COVID-19 pandemic acted as a catalyst for the adoption of digital services, underscoring the importance of technology in enhancing resilience during future crises.
- The limited number of active companies highlights the need to create a stimulating financial innovation environment, including legal facilitation, business incubators, and financing for startups.

Recommendations:

- **Enhance digital infrastructure:** Improve internet networks and expand coverage to facilitate access to electronic payment services for all regions and population groups.
- **Increase awareness and sensitization campaigns:** educate citizens and merchants about the benefits and security of electronic payments, with a focus on modern usage methods such as mobile payments and Electronic Payment Terminals.
- **Develop the regulatory framework:** Establish supportive laws and regulations for fintech startups and create regulatory sandboxes to test financial innovations in a safe environment.
- **Support government and private initiatives:** Provide electronic payment devices, facilitate mobile payment adoption, and fund SMEs involved in digital financial services.
- **Regularly monitor performance:** Track transaction volumes, values, and service quality to identify strengths and

weaknesses and guide future policy decisions based on accurate data.

- **Encourage collaboration between banks and fintech companies:** Foster

9. Bibliography List:

- Startup in Algeria. (n.d.). ESREF Pay nouvelle solution de paiement en Algérie. Retrieved 10 15, 2023, from <https://www.startupinalgeria.com/paiement-en-ligne-algerie-esref-pay/>
- The fintech times. (2023). fintech the middle east & africa report. Aconomic development rhrough prosperity with Fintech.
- (2022). Digital 2022 Algeria: the essential to the latest connected behaviours. we are social & Kepios.
- Agence de presse algérienne. (2020). La Poste algérienne fournit gratuitement aux commerçants et aux opérateurs économiques des dispositifs de paiement électronique. Consulté le 10 20, 2023, sur <https://www.aps.dz/ar/economie/85817-2020-03-31-11-11-45>
- Agence de presse algérienne. (2020). Une feuille de route a été élaborée pour soutenir et financer les entreprises émergentes en Algérie. Retrieved 10 15, 2023, from <https://www.aps.dz/ar/economie/83236-2020-02-04-11-57-36>
- Agence de presse algérienne. (2022). La Poste algérienne lance un nouveau service de paiement mobile pour les achats. Consulté le 10 23, 2023, sur <https://www.aps.dz/ar/sante-science-technologie/91345-2020-08-22-14-58-12>
- Algérie poste. (s.d.). Service Paiment Mobile Barid pay. Consulté le 10 23, 2023, sur https://www.poste.dz/services/corporate/Bari_di_pay_cor
- Algérie Presse Service. (2021). La BNA lance la première application de paiement mobile. Récupéré sur <https://www.aps.dz/economie/119378-la-bna-lance-la-premiere-application-de-paiement-mobile>

innovation, develop new applications, and enhance the user experience in line with global standards.

2DBNA%22%2C,autre%20utilisateur%20de%20

- Algérie Presse Service. (2022). E-Paiement: hausse de 20% du nombre des cartes interbancaires en 2021. Retrieved 10 19, 2023, from <https://www.aps.dz/economie/135098-e-paiement-hausse-de-20-du-nombre-des-cartes-interbancaires-en-2021>
- :~:text=Le%20nombre%20de%20cartes%20i nterbancaires%20%C3%A9mises%20au%20 31%20d%C3%A9cembre%202021,%25%2C %20selon%20le%20GIE%20Mon%C3%A9ti que.
- Andresen, S. (2017). Regulatory and supervisory issues from FinTech. Cambridge Centre for Alternative Finance.
- Anis Ababsia, Y. A. (2022). Analyse de l'activité numérique en Algérie – Étude analytique du Rapport numérique algérien 2022. 3.
- ARCPE. (2023). Observatoire du marché de la téléphonie mobile en Algérie. Autorité de régulation des communications postales et électroniques.
- bank of algeria. (2022). Nombre de DAB et GAB. Consulté le 10 01, 2023, sur <https://www.bank-of-algeria.dz/nombre-dab-gab/>
- Baraka Bank. (s.d.). la banque algérienne Al Baraka, lance la première application de paiement mobile en Algérie, M-Pay. Consulté le 10 24, 2023, sur <https://www.albaraka-bank.dz/%D8%A8%D9%86%D9%83-%D8%A7%D9%84%D8%A8%D8%B1%D9%83%D8%A9-%D8%A7%D9%84%D8%AC%D8%B2%D8%A7%D8%A6%D8%B1%D9%8A-%D9%8A%D8%B7%D9%84%D9%82-%D8%A7%D9%88%D9%84-%D8%AA%D8%B7%D8%A8%D9%8A%D9%82-%D9%81%D9%8A-%D8%A7/?lang=ar>

- Belkacem, H. (2022). Selon un récent rapport de la Banque mondiale, l'Algérie se classe deuxième au Maghreb en matière de généralisation des paiements électroniques avec 26 %. Retrieved from Echourouk Online: <https://www.echouroukonline.com/%D8%A7%D9%84%D8%AC%D8%B2%D8%A7%D8%A6%D8%B1-%D8%A7%D9%84%D8%AB%D8%A7%D9%86%D9%8A%D8%A9-%D9%85%D8%BA%D8%A7%D8%B1%D8%A8%D9%8A%D8%A7-%D9%81%D9%8A-%D8%AA%D8%B9%D9%85%D9%8A%D9%85-%D8%A7%D9%84%D8%AF%D9%81>
- BNA. (n.d.). paiement sans contact WIMPAY-BNA. Retrieved 10 24, 2023, from Banque Nationale d'Algérie: <https://www.bna.dz/ar/wimpay-bna/>
- Digital . (2022). Digital 2022 Algeria: the essential to the latest connected behaviours. social & Kepios.
- électronique Tariq News. (n.d.). Les billets pour le match Algérie-Ouganda sont désormais disponibles à l'achat en ligne sur la plateforme. Retrieved 10 17, 2023, from <https://www.tariqnews.dz/2022/05/30/%d8%a8%d9%8a%d8%b9-%d8%aa%d8%b0%d8%a7%d9%83%d8%b1-%d9%85%d8%a8%d8%a7>
- FinTech Report. (2016). FinTech in the Middle East and North Africa, Financial Services Sector Trends. Wamda and PayFort,.
- FSB. (2017). Financial Stability Implications from FinTech, Supervisory and Regulatory Issues that Merit Authorities' Attention. Financial Stability Board.
- Ghani, M. A. (2022). Innovation in financial technology and its role in developing the performance of financial institutions through the financial inclusion system: A study of a sample of Algerian financial institutions. 32-33. Faculty of Economic, Commercial and Management Sciences, Ahmed Draya University, Adrar, Algeria.
- GIE Monétique. (n.d.). Activité paiement par Mobile. Retrieved 10 25, 2023, from <https://giemonetique.dz/activite-paiement-par-mobile/>
- GIE Monétique. (n.d.). Activité paiement sur TPE. Retrieved 10 19, 2023, from <https://giemonetique.dz/activite-paiement-sur-tpe/>
- GIE Monétique. (n.d.). Activité Paiement sur Internet. Retrieved 10 15, 2023, from <https://giemonetique.dz/qui-sommes-nous/activite-paiement-sur-internet/>
- GIE Monétique. (n.d.). Activité Retrait sur ATM. Retrieved 10 18, 2023, from <https://giemonetique.dz/activite-retrait-sur-atm/>
- GIE Monétique. (n.d.). Carte en Circulation,. Retrieved 10 19, 2023, from <https://giemonetique.dz/cartes/>
- GIE Monétique. (n.d.). Lancement du Paiement sur Internet par Carte CIB. Retrieved 10 15, 2023, from <https://giemonetique.dz/article/lancement-du-paiement-sur-internet-par-carte-cib>
- Ibeghouche Saadia, M. A. (2022). Adoption et utilisation des paiements électroniques en Algérie: étude empirique de la période (2016-2022). *Revue de l'économie financière & des affaires*, 6(3), 559.
- IMF. (2018). The Bali Fintech Agenda. IMF Policy Paper. Washington DC: International Monetary Fund.
- ITU. (2017). Global Cybersecurity Index (GCI). Geneva, Switzerland.
- Kame, L. (2022). Number of fintech startups in Africa as of 2021 by country. (Statista) Retrieved 10 15, 2023, from <https://www.statista.com/statistics/1252512/number-of-fintech-startups-in-africa-by-country/>
- Kemp, S. (2022). Digital 2022: Algeria Data Reportal. Retrieved 10 18, 2023, from <https://datareportal.com/reports/digital-2022-algeria>
- Lazreg Mohammed, G. D. (2016). Un essai d'analyse sur l'utilisation de la carte électronique de retrait et de paiement

interbancaire (CIB) en Algérie. Journal of economic & financial research(6), 31.

- Loi n° 11-17. (du 8 Rabi' al-Thani 1439 AH, correspondant au 27 décembre 2017). portant loi de finances pour l'année 2018. (76), 46-47. Journal officiel.
- Loi n° 21-16. (de 25 Jumada al-Ula 1443 AH, correspondant au 30 décembre 2021). portant loi de finances pour l'année 2022. (100), 64.
- Ministère des Finances. (2021). Le ministre des Finances, M. Aymen Benabderrahmane, préside la cérémonie de lancement du service « WIMPAY-BNA ». Consulté le 10 24, 2023, sur <https://www.mf.gov.dz/index.php/ar/activites-ar/676-wimpay-bna>

A7%D9%84%D8%B3%DB%8C%D8%AF %20%D8%A3%DB%8C%D9%85%D9%86, %D9%85%D B%8C%D9%84%D9%88

- Ramadan, T. (2022). L'Égypte représente 14 % des entreprises de technologies financières non bancaires au Moyen-Orient et en Afrique du Nord. Retrieved 10 13, 2023, from <https://almalnews.com/%d8%a7%d9%84%d9%88%d8%b2%d8%b1%d8%a7%d8%a1-%d9%85%d8%b5%d8%b1-%d8%aa%d8%b3%d8%aa%d8%ad%d9%88%d8%b0-%d8%b9%d9%84%d9%89-14-%d9%85%d9%86-%d8%b4%d8%b1%d9%83%d8%a7%d8%aa-%d8%a7%d9%84/>
- Sadika, B. (2022). Les Moyens de Paiement Electronique en Algérie : Etat des lieux et Perspectives Electronic Payment Means in Algeria: Status and Perspectives. Revue Etudes Economiques, 16(2602-7925), 803.