Analysis of the Economic, Social, and Technological Environment of the Mobile Payment (M-Payment) System in Algeria: A Strategic Approach Using the SWOT Model

تحليل البيئة الاقتصادية والاجتماعية والتكنولوجية لنظام الدفع عبر الهاتف المحمول في الجزائر: مقاربة استراتيجية باستخدام نموذج SWOT

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Abstract: The study aimed to analyze the economic, social, technological, and legal environment of the mobile payment system in Algeria using the SWOT model. The findings revealed the presence of a promising digital infrastructure and widespread use of smartphones, which represent a key strength. However, the system faces challenges such as weak digital financial literacy and uneven network coverage. The study recommended improving the legal framework, investing in financial education, and expanding collaboration between banks and telecom companies to achieve a comprehensive digital transformation that enhances financial inclusion in Algeria.

Keywords: Mobile Payment; Digital Environment; Financial Inclusion; SWOT Model; Algeria.

ملخص: هدفت هذه الدراسة إلى تحليل البيئة الاقتصادية والاجتماعية والتكنولوجية والقانونية لنظام الدفع عبر الهاتف المحمول في الجزائر، وذلك باستخدام نموذج $SWOT$. وقد أظهرت النتائج وجود بنية تحتية رقمية واعدة وانتشار واسع لاستخدام الهواتف الذكية، ما يُعدّ نقطة قوة أساسية. غير أن النظام يواجه في المقابل عدة تحديات، من بينها ضعف الثقافة المالية الرقمية وعدم تجانس تغطية الشبكات. وأوصت الدراسة بضرورة تحسين الإطار القانوني، والاستثمار في التثقيف المالي، وتعزيز التعاون بين البنوك وشركات الاتصالات، بهدف تحقيق تحول رقمي شامل يُسهم في تعزيز الشمول المالي في الجزائر.

كلمات مفتاحية: الدفع عبر الهاتف المحمول.، البيئة الرقمية.، الشمول المالي.، نموذج $SWOT$.، الجزائر.

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1. INTRODUCTION

The world is currently witnessing a profound transformation in financial transaction patterns, driven by the rapid development of digital technologies and the widespread use of smartphones. This transformation has given rise to new payment methods, most notably mobile payment (M-Payment), which combines speed, convenience, and accessibility to broad social segments, including individuals excluded from the traditional banking system.

In the Algerian context, this technology has gradually emerged as a practical and effective alternative to cash payments, particularly in light of government initiatives aimed at strengthening financial inclusion, developing digital infrastructure, and promoting e-commerce. Nevertheless, the system still faces several challenges, such as weak technological infrastructure, limited financial literacy, the absence of a comprehensive legal framework, and uneven levels of innovation. These factors raise fundamental questions about the readiness of the Algerian market to adopt and further develop this digital transformation.

1.1. Research Problem:

Based on the above, this study addresses the following research problem:

To what extent do the economic, social, technological, and legal environments influence the adoption and development of the mobile payment system in Algeria? Furthermore, what are the strengths, weaknesses, opportunities, and threats surrounding this system?

1.2. Research Hypotheses:

This study is guided by the following hypotheses:

- Economic factors have a direct impact on the pace of adoption of mobile payment in Algeria;
- The absence of an integrated legal framework is one of the major challenges hindering the development of this service;
- The availability of digital infrastructure and technological innovation constitutes a fundamental pillar for the successful implementation of mobile payment.

1.3. Research Objectives:

The objectives of this study are to:

- Provide a comprehensive analysis of the internal and external environment of mobile payment in Algeria using the SWOT model;
- Examine the factors influencing the adoption of this system from economic, social, technological, and legal perspectives;

- Highlight the challenges faced by stakeholders in the sector, particularly banks, telecommunications companies, and consumers.

1.4. Significance of the Study:

The significance of this study lies in:

- Its contribution to understanding the dynamics of financial digital transformation in a developing country such as Algeria;
- Providing a scientific reference to assist policymakers in formulating appropriate financial and digital strategies;
- Contributing to the academic debate on the transition towards a cashless economy in developing countries.

1.5. Research Methodology:

This study adopts a descriptive-analytical approach by analyzing the general environment of mobile payment in Algeria using the SWOT model, in addition to reviewing the relevant literature and previous studies. Qualitative analysis tools will also be employed to evaluate the economic, social, technological, and legal dimensions influencing this system.

1.6. Previous Studies:

- **Study by (Khelloufi, 2021):**

This study, entitled "Analysis of the Competitive Environment of the Mobile Telecommunication Services Industry in Algeria Using Porter's Five Forces Model and the PESTEL Framework (2004–2019)", examined the state of the mobile telecommunication services industry in Algeria by analyzing the factors influencing its competitive environment. The study applied Porter's Five Forces model to assess the level of competition within the industry, in addition to the PESTEL framework to capture the political, economic, social, technological, environmental, and legal variables shaping the sector. The findings indicated that the Algerian market is characterized by a medium to high degree of competition and is witnessing significant development due to openness to investment and the expansion of modern technologies. The study emphasized the importance of strengthening the regulatory environment to support the sector's competitiveness in the future.

- **Study by (Mesmous & Bouraoui, 2023):**

This study, entitled "Information and Communication Technology in Algeria as a Catalyst for the Development of Financial Transactions through the Use of Electronic Payment Methods", explored the role of electronic financial transactions in supporting e-commerce in Algeria. It highlighted that stimulating this sector requires the availability of advanced payment tools compatible with the digital

environment, as well as a well-structured legislative framework. The study also referred to government efforts in building the necessary infrastructure to strengthen these transactions. The results concluded that the development of e-commerce in Algeria is highly dependent on the progress of electronic payment systems, particularly with the growing reliance on bank cards and the Internet by fixed and mobile phone users.

- **Study by (Abdelrahim, 2010):**

This study, entitled "Evaluation of Electronic Payment Methods and the Future of Traditional Payment Instruments in Their Presence", discussed the emergence of electronic payment methods as a response to technological development and as a means to overcome the limitations of traditional payment systems. The study emphasized the crucial role played by banks in disseminating these methods by attracting customers and encouraging them to adopt them. It also shed light on the ongoing debate regarding the possibility of electronic payment methods replacing traditional ones, in light of the growing digitization of financial transactions and the gradual abandonment of paper-based financial instruments such as checks and promissory notes, in favor of electronic orders through the Internet.

- **Study by (Kouachi & Gadi, 2022):**

This study, entitled "Toward a Diagnosis of the State of E-Commerce in Algeria: E-Commerce as a Driver for the Use of Bank Cards and Electronic Payment Services", analyzed the current situation of e-commerce in Algeria and its relationship with the development of modern payment services. It reviewed the concept and significance of e-commerce, along with the digital and legal infrastructure in Algeria. The study highlighted the pivotal role of bank cards and electronic payment services in enabling this form of transactions. The findings concluded that the absence of widespread use of bank cards constitutes a major barrier to the development of e-commerce in the country.

2. Theoretical Framework of the Study

2.1. General Concepts of Financial Technology (FinTech):

2.1.1. The Concept of Financial Technology:

Financial technology refers to a set of modern technological innovations applied in the financial services sector. These innovations include digital programs used in banking operations such as customer transactions, money transfers, currency exchange, interest and profit calculations, as well as the estimation of

potential investment returns and other financial services (Lazhary & Hadjaj, 2018, p. 164).

In this context, the Financial Stability Board defines financial technology as innovations in the financial field driven by technology, enabling the creation of new business models or applications that have a tangible impact on financial institutions. Financial innovations encompass various aspects of finance, such as retail and wholesale payments, securities infrastructure, investment management, insurance, credit provision, and capital raising (Benia & Aliouche, 2018, p. 39).

2.1.2. Characteristics of Financial Technology (FinTech):

The main characteristics of financial technology can be summarized as follows (Ben Alqama & Saïhi, 2018, pp. 92-93):

- Accessibility for all users: achieved by continuously enhancing capabilities through partnerships or redesigning products tailored to low-income customers;
- Flexibility and affordability: by offering multiple options for payments of goods and services;
- Customer-oriented design: focusing on user needs by creating simple and user-friendly products;
- Speed: enabling transactions to be completed within minutes through the use of big data and algorithms;
- Data or mobile-driven policies: improving the quality of products and services offered to customers, while allowing businesses to make better decisions and seize opportunities.

2.1.3. Main Sectors of Financial Technology:

Startups provide a wide range of services for both the private and public sectors. The main FinTech sectors include (Fintech Report in the Middle East and North Africa, 2017, p. 3):

- Payments sector: the most advanced segment, where startups offer bill payment services, online and mobile payment solutions, digital wallets, and other related services;
- Lending sector: including companies that provide crowdfunding services, peer-to-peer lending, loan comparison platforms, and money circulation systems;
- Additionally, these companies offer services such as global money transfers, insurance management, insurance solutions, and blockchain-based services, including cryptocurrencies.

2.2. A Conceptual Approach to Mobile Payment (M-Payment):

2.2.1. The Emergence and Development of Mobile Banking Services Online: (rahmani & honarinand, 2012, pp. 38-39)

The American Bank was the first to use SMS-based banking services in 1999. In the same year, postal offices adopted the same technology to track the location of customer letters. Since then, under the Klein Cohen Act, several U.S. organizations and government agencies began using these services to reduce the costs of Internet and mobile phone services.

In 1999, the introduction of web-based systems to the business world contributed to reducing IT costs and developing new methods for utilizing innovations, while also minimizing monitoring services.

Traditionally, customers had to physically visit the bank to complete their transactions. With the emergence of online banking, however, they were able to perform operations such as bill payments and deposit account management from home or the office with ease. One of the main limitations of this electronic banking model was the need for a computer and Internet access, which ultimately led to the introduction of mobile banking services as a model where customers required only a mobile phone.

The development of mobile banking services evolved as follows:

- Introduction of General Packet Radio Service (GPRS) in late 1999 and its full deployment in 2000;
- Provision of personalized mobile services for offices;
- Introduction of mobile payment services in 2000;
- Launch of third-generation (3G) mobile phones in late 2001.

The emergence of mobile banking services from the late 1990s can be summarized in five main stages:

- First stage: Performing simple banking operations such as bill payments and SMS exchanges between banks and customers;
- Second stage: Adding deposit account management and expanded mobile banking services;
- Third stage: Utilizing mobile networks and other media (e.g., Internet and landline phones) for banking, culminating in the advent of smartphones;
- Fourth stage: Continuous development, with the introduction of phones such as Android devices, enabling Internet access via mobile phones and integration with banking operating systems;

- Fifth stage: The onset of a major development phase, with the adoption of technologies such as RFID chips for mobile payments and the integration of banking networks with systems such as Visa and MasterCard.

2.2.2. The Concept of Mobile Payment (M-Payment):

Mobile payment refers to a process in which at least one stage of the transaction is carried out using a mobile device, such as a mobile phone or any other wireless device capable of securely processing a financial transaction through a mobile network or via various wireless technologies (Antonio & al, 2010, p. 7).

It can also be defined as the use of a mobile device to execute a payment transaction, in which funds are provided and transferred from the payer to the payee either through an intermediary or directly without one.

2.2.3. Characteristics of Mobile Payment:

Mobile payment is considered a new payment method that competes with bank cards and checks. For it to be widely adopted and used, mobile payment must acquire specific technical characteristics that ensure its compatibility with consumer needs. The main features include (Laetitia, 2013, p. 285) :

- Ubiquity: The service should enable merchants to allow customers to carry out their transactions anytime and anywhere, granting consumers access to the offered services without spatial or temporal restrictions.
- Personalization: Since users have different tastes, preferences, and expectations, applications are customized according to user profiles. They provide the core function of "payment" along with several additional services.
- Flexibility: Users should be able to make purchases via their mobile phones at their convenience, without being constrained by device type or merchant. This feature resembles interoperability, which allows freedom of choice regarding the medium and payment method.
- Wide Reach: The wireless network enables each user to connect with a large number of partners, accelerating the adoption and diffusion of mobile payment through extensive network effects.

2.2.4. Advantages of Mobile Banking Services:

Mobile banking services provide a wide range of benefits, the most prominent of which are (shaikh, 2017, pp. 16-17):

- Facilitating various transactions anytime and anywhere;
- Easy payment of utility bills;
- The ability to download banking applications on smartphones to perform financial operations;
- Quick verification of bank account information;

- Access to check services through banks' online platforms;
- Provision of customer support 24/7;
- Facilitating accessibility for people with special needs and disabilities;
- Freedom from time and geographical constraints;
- Reducing costs associated with traditional banking services.

3. The Technological Situation of the Mobile Payment (M-Payment) System in Algeria

3.1. Technologies Used :

The choice of technology is a pivotal element in the success of any digital business model. Several technologies are employed in mobile payment (M-Payment) systems and in enabling communication between mobile devices and banking or commercial systems. The following are the most prominent technologies:

Table 1. Comparison of Mobile Payment (M-Payment) Technologies

Technology	Description	Advantages	Limitations
QR Code Technology	Uses a Quick Response (QR) code scanned by the phone's camera to complete the payment.	• Easy to use; • Does not require direct contact; • Low cost.	• Requires displaying the code (paper or digital); • Depends on the quality of the phone camera.
NFC (Near Field Communication) Technology	Enables payment by bringing the phone close to an NFC-compatible receiver.	• Fast and secure transactions; • User-friendly experience without the need to open an app.	• Not available on all phones; • Requires terminals supporting NFC.
BLE (Bluetooth Low Energy) Technology	Relies on low-energy Bluetooth to establish communication between the phone and the payment point.	• Low power consumption; • Wider coverage range compared to NFC.	• Less common in payment systems; • Requires prior setup and technical compatibility.
SMS Technology	Payment is made by sending a text message to the service provider containing transaction details.	• Available on all types of phones; • Does not require an internet connection.	• Lower security; • Slower transaction execution; • Depends on mobile network availability.

USSD Technology	Based on sending short commands via the mobile network (e.g., #123*) to perform financial transactions.	• Does not require a smartphone or internet; • Widely available, especially in developing countries.	• Primitive text-based interface; • Limited functions and poor user experience.

Source: Prepared by the Researcher based on literature review, field data, or technical reports.

In the Algerian case, the QR Code Technology has been adopted, a choice that is considered strategic for several reasons. This technology is characterized by:

- Relatively low cost, making it suitable for both banks and users;
- Ease of use, contributing to the simplification of the payment process;
- Security, in line with international data protection standards;
- Compatibility with most smartphones, which facilitates its wide adoption by users.

However, despite these advantages, relying solely on this technology without allowing the integration of alternative ones represents a real challenge to innovation and modernization efforts, whether by financial institutions or technology providers. Such technological closure may hinder competitiveness among actors and limit consumer options, which could negatively affect the pace of digital solution adoption.

3.2. Billing Models:

The choice of a billing model is one of the fundamental elements determining the success of any digital business model, particularly in the context of mobile payment (M-Payment). Billing methods vary according to markets and user needs, as each model provides specific advantages that align with the requirements of both individuals and businesses. In this regard, several billing models have been developed based on different payment technologies. These models vary in collection mechanisms and tools used, thereby offering users greater flexibility in selecting the option most suitable for them.

Table 2. Comparison of Billing Models in the Mobile Payment (M-Payment) System

Technology	Description	Advantages	Limitations
Mobile Billing (La facture mobile)	The invoice is sent to the user via mobile phone, either through a dedicated application or an SMS. The user then	• Easy to use and straightforward; • Does not require complex technologies	• May be limited in its scope of use (depends on mobile service providers);

	pays the outstanding amount at a later time.	or constant internet connectivity; • Flexible for users without bank accounts.	• Users may face issues in areas with poor network coverage.
Partner Account Billing (La facture sur compte partenaire)	In this model, the amount due is deducted from the user's account but through an account associated with a financial or commercial partner (such as mobile operators or electronic payment platforms).	• Strengthens collaboration among different companies within the payment ecosystem; • Facilitates payments in cases where users face difficulties with direct payment.	• May be limited to the scope of available partners; • Requires partnership agreements with multiple companies, which can increase administrative complexity.
Direct Debit or CIB Card (Le débit direct ou par carte CIB)	The amount is deducted directly from the user's bank account using the Algerian payment card (CIB) or through the direct banking system.	• Very fast and highly secure; • Ensures sufficient funds are available in the account before executing the payment; • Considered one of the most secure methods of electronic payment.	• Requires users to have a bank account and valid card access; • Some users may face difficulties using digital banking systems.
Electronic Wallet (Le porte-monnaie électronique)	A balance is loaded into an electronic wallet on the mobile phone, which can then be used for financial transactions or payments for services.	• Easy and fast for executing payments online or in physical stores; • Allows users to store money digitally without needing a physical bank card; • Flexible and can be used for various types of transactions.	• Users need to set up an electronic wallet and perform prior top-ups; • Users may face difficulties accessing this service in areas lacking sufficient technological infrastructure.

Source: Prepared by the Researcher based on literature review, field data, or technical reports.

In the Algerian case, the direct debit model or the use of the CIB card (Algerian Interbank Payment Card) has been adopted as the primary means of mobile payment. This option was chosen based on regulatory requirements established by the Bank of Algeria. It represents part of the broader efforts to modernize the financial and banking system in Algeria and to promote financial inclusion by facilitating access to modern payment instruments. The selection of this method is rooted in several key factors, including:

- **Financial Regulations:**

The Bank of Algeria has established a regulatory framework requiring financial institutions and banks to provide citizens with a secure and reliable means of conducting digital payments. Within this context, the CIB card was adopted as the principal instrument for direct debit from bank accounts. This step supports the digital transformation of the financial sector and fosters the adoption of modern technologies in daily transactions.

- **Financial Inclusion:**

The direct debit model through the CIB card is one of the most significant tools contributing to financial inclusion. Individuals holding a bank account and a CIB card are able to make payments easily and securely via mobile phones, thereby encouraging wider use of digital banking services in the Algerian market.

- **Access to the Target Population:**

Any individual possessing a bank account and a CIB card is eligible to use this mobile payment method. This indicates that this segment of the population constitutes the main foundation of the system in Algeria. Consequently, the service enables a large portion of citizens to carry out their payments electronically without relying on cash or traditional instruments.

- **Expansion and Outreach:**

While the CIB card remains the core instrument for mobile payments, the Algerian financial system is working to develop additional technological solutions to extend the reach of this service to as many users as possible, particularly in remote or less developed regions. Thus, this approach facilitates broader access to banking services for individuals who already hold bank accounts.

- **Security and Protection:**

The direct debit model through the CIB card offers a high level of security, as executing banking transactions requires user authentication through the payment card, thereby reducing the risk of fraud or unauthorized transactions. Furthermore, the system relies on modern encryption technologies to safeguard users' personal and financial data.

3.3. The General Situation of the Mobile Phone Market in Algeria :

By the end of 2024, the number of mobile phone service subscribers in Algeria reached 53.454.905 reflecting the widespread adoption of these services across the country and underscoring the importance of this sector in the nation's digital and communication infrastructure.

3.3.1. Distribution of Subscribers by Technology:

The distribution of subscribers by technology type is presented in the following table:

Table 3. Distribution of Subscribers by Technology (2024)

Technology Type	GSM	3G/4G
Total Subscribers	2.825.470	50.629.435
Subscriber Share	5,29%	94,71%

Source: Compiled by the researcher based on (Regulatory Authority for Post and Electronic Communications (ARPCE), 2025)

The data indicate that the vast majority of subscribers rely on 3G and 4G technologies (94,71%), compared to a very small proportion still using traditional GSM technology (5,29%). This shift reflects the rapid development of the digital infrastructure, the growing demand for high-speed Internet services, and the success of investments aimed at upgrading networks and expanding coverage.

3.3.2. Distribution of Subscribers by Type of Subscription:

The following table illustrates how subscribers are distributed between prepaid and postpaid plans:

Table 4. Distribution of Subscribers by Type of Subscription (2024)

Subscription Type	Prepaid	Postpaid
Total Subscribers	51.033.362	2.421.543
Subscriber Share	94,44%	5,56%

Source: Compiled by the researcher based on (Regulatory Authority for Post and Electronic Communications (ARPCE), 2025)

The data clearly show that the prepaid system dominates the Algerian mobile market with (94,44%) of total subscribers, while postpaid subscriptions account for only (5,56%). This is largely due to the characteristics of the local market, where most consumers prefer the flexibility of prepaid services and seek to avoid the monthly commitments associated with postpaid plans.

Overall, these indicators point to a relatively mature market in terms of subscriber numbers, with a clear dominance of modern technologies and prepaid subscriptions. However, they also highlight the need to continue improving service

quality, expanding coverage—particularly in remote areas—and promoting postpaid offers through additional incentives to attract new user segments.

3.4. The General Situation of the Internet Market in Algeria:

In recent years, the Internet market in Algeria has experienced significant expansion. By the end of 2024, the total number of Internet subscribers (fixed and mobile combined) reached (56,54 million), reflecting the growing reliance on digital services and Internet access across all segments of society.

3.4.1. Total Fixed Internet Subscribers:

The table below shows the distribution of fixed Internet subscribers by technology:

Table 5. Distribution of Fixed Internet Subscribers by Technology (2024)

Subscriber Type	Number of Subscribers
ADSL Subscribers	2.626.479
Fixed 4G LTE Subscribers	1.801.686
Fiber Optic FTTH Subscribers	1.474.219
LS Subscribers (Leased Lines)	3.816
Total Fixed Internet Subscribers	**5.906.200**

Source: Compiled by the researcher based on (Regulatory Authority for Post and Electronic Communications (ARPCE), 2025)

The data reveal that ADSL technology remains the most widely used fixed Internet service (44,5%), followed by fixed 4G LTE (30,5%), and fiber optic FTTH (25%). This indicates a gradual shift toward faster and more efficient technologies. Meanwhile, LS services via leased lines remain marginal, reflecting their limited use in specific sectors or for particular needs.

3.4.2. Total Mobile Internet Subscribers:

Mobile Internet, which accounts for the largest share of the Algerian Internet market, is distributed as follows:

Table 6. Distribution of Active Mobile Internet Subscribers (3G/4G) (2024)

Subscriber Type	Number of Subscribers
Active 3G Mobile Internet Subscribers	4.201.613
Active 4G Mobile Internet Subscribers	46.427.822
Total 3G/4G Mobile Internet Subscribers	**50.629.435**

Source: Compiled by the researcher based on (Regulatory Authority for Post and Electronic Communications (ARPCE), 2025)

The figures show that the majority of mobile Internet users in Algeria rely on 4G technology (91,7%), while 3G users account for only (8,3%). This reflects the

successful expansion of 4G networks and the strong preference of users for faster and more reliable browsing and modern applications.

In sum, the Algerian Internet market is undergoing a rapid transition toward 4G and fiber optic technologies, while older systems such as ADSL and 3G persist but are gradually declining. With the total number of Internet subscribers reaching (56,54 million), Algeria is experiencing substantial growth in digital connectivity, driven by rising demand for Internet services in education, e-commerce, and administrative services.

4. The Legal and Financial Framework for Mobile Payment (M-Payment) Services in Algeria:

The legal and financial framework for mobile payment (M-Payment) services in Algeria encompasses the regulatory and legislative dimensions that govern the mobile payment environment. It should be noted that the information presented here is based on a comprehensive review of official regulatory reports and related sources (Bank of Algeria, 2022), as no individual references were specified in the original data.

the Bank of Algeria has established a legal framework designed to regulate mobile payment services by aligning with standards related to payment instruments. This reflects the authorities' commitment to developing the country's digital financial infrastructure. In addition, regulations have been imposed to ensure interoperability (i.e., the ability to conduct transactions across different banks and service providers such as the Bank of Algeria and Algeria Post), which facilitates the use of this service across multiple financial institutions.

The relevant authorities have also introduced strict standards to guarantee transaction security and customer data protection, including the mandatory use of ISO 20022 standards and EMV QR Code technology. These measures reinforce trust in the system, as security and data protection are critical factors that can determine the success or failure of adopting such technologies in the local market.

Despite these regulatory advancements, some limitations may hinder the widespread adoption of mobile payment solutions. The most notable of these is the absence of detailed implementing legislation governing the operations of Payment Service Providers (PSPs), which creates ambiguity in defining responsibilities among different stakeholders. Furthermore, the role of mobile network operators remains insufficiently defined in current laws, even though they represent a decisive factor in the success of this system, particularly given the widespread use of mobile phones and the large user base in Algeria. Technological innovation is another

factor influencing the effectiveness of this model. While Algeria provides an advanced legal framework, the limited innovation capacity of some banks may restrict the expansion of more advanced solutions such as Near Field Communication (NFC) payments or more sophisticated digital payment applications. These obstacles may limit the ability of Algerian banks to keep pace with global developments in electronic payments, potentially leaving the national system less competitive compared to modern payment systems in other countries.

5. Social Factors Influencing the Adoption of Mobile Payment:

The level of education plays a fundamental role in the adoption of digital technologies, including mobile payment services. Populations with higher educational attainment are generally better able to understand, use, and trust these modern technological tools. Education also strengthens the basic digital skills necessary to interact effectively with mobile payment applications. The illiteracy rate in Algeria decreased to (7,40%) of the population in 2022 (National Office for Literacy and Adult Education in Algeria, 2025), which is a positive indicator for the adoption of modern technologies. This suggests that the overwhelming majority of the population possesses basic literacy skills, thereby facilitating interaction with mobile payment services and increasing the likelihood of acceptance. Nevertheless, this relatively low illiteracy rate also represents an opportunity that Algerian authorities should capitalize on by planning comprehensive financial literacy campaigns. Such initiatives would aim to promote financial inclusion among different segments of society, especially those who remain hesitant or lack the essential digital financial skills required to benefit from mobile payment services.

6. Economic Indicators Related to Electronic Payments:

6.1. Online Payment Activity:

Online payment activity in Algeria has witnessed significant growth in recent years, as clearly shown in the table below:

Table 7. Evolution of the Number and Value of Online Payment Transactions in Algeria (2022–2024)

Year	Total Number of Transactions	Total Amount (DZD)
2022	9.048.125	18.151.104.423,96
2023	15.351.354	32.196.672.024,03
2024	19.594.482	51.945.560.351,45

Source: Compiled by the researcher based on (GIE Monétique, 2025)

The remarkable increase in both the number of transactions and total amounts from 2022 to 2024 highlights the growing reliance on e-commerce and online payments. This expansion reflects improved user confidence in electronic payment

systems and advances in the infrastructure supporting online transactions. It also indicates a more technologically prepared environment to support the growth of e-commerce, representing a strategic opportunity in both technological and social dimensions for expanding online commercial activities in Algeria.

6.2. ATM Withdrawal Activity (GAB):

The following tables present the evolution of cash withdrawal operations and the number of ATMs in service:

Table 8. Evolution of the Number and Value of ATM Withdrawals (2022–2024)

Year	Total Number of Withdrawals	Total Amount Withdrawn (DZD)
2022	128.035.361	2.182.896.695.000
2023	174.415.895	3.262.245.367.500
2024	197.323.075	3.691.600.492.000

Source: Compiled by the researcher based on (GIE Monétique, 2025)

Table 9. Number of Operating ATMs in Algeria (2022–2024)

Year	Total Number of Operating ATMs
2022	3.658
2023	3.848
2024	3.942

Source: Compiled by the researcher based on (GIE Monétique, 2025)

Despite the substantial growth in electronic payments, the rising number of cash withdrawals shows that cash remains dominant in daily life. This reflects a challenge for the full digital transition of Algerian society, underscoring the need for stronger incentives to encourage consumers to shift from cash-based transactions to electronic means.

6.3. Electronic Payment Terminal (TPE) Activity:

Table 10. Evolution of the Number and Value of TPE Transactions (2022–2024)

Year	Total Number of Transactions	Total Amount (DZD)
2022	2.712.848	19.343.056.538,17
2023	3.997.165	31.518.739.249,37
2024	5.579.708	44.563.958.073,88

Source: Compiled by the researcher based on (GIE Monétique, 2025)

Table 11. Number of Operating Electronic Payment Terminals (2022–2024)

Year	Total Number of Terminals
2022	46.263
2023	53.191

2024	68.140

Source: Compiled by the researcher based on (GIE Monétique, 2025)

The steady rise in both the number and value of transactions through TPEs indicates significant improvement in the adoption of this technology. This demonstrates that an increasing number of businesses and merchants accept electronic payments, which enhances financial access, fosters financial inclusion, and contributes to strengthening digital culture. It also represents a strategic step towards a cashless economy.

6.4. Mobile Payment (M-Payment) Activity:

Table 12. Mobile Payment and Transfer Transactions (2023–2024)

Year	Total Payment Transactions	Total Payment Amount (DZD)	Total Transfer Transactions	Total Transfer Amount (DZD)
2023	39.283.478	27.855.521.037,78	17.841.108	241.073.627.614,25
2024	58.465.858	43.590.424.114,00	36.236.137	503.679.854.885,90

Source: Compiled by the researcher based on (GIE Monétique, 2025)

The rapid growth in both payment and transfer transactions via mobile phones demonstrates a substantial increase in Algerians' reliance on mobile payment solutions. This technological shift is a major strength for the financial system, especially in areas lacking access to traditional bank branches, as it promotes financial inclusion and provides innovative, accessible financial solutions.

6.5. Number of Bank Cards in Circulation:

By the end of 2024, the total number of cards in circulation reached 19.844.903.

Table 13. Evolution of Bank Cards and Postal "Gold Cards" in Algeria (2023–2024)

Year	Personal Bank Cards	Business Bank Cards	Gold Cards
2023	3.834.219	187.984	12.487.304
2024	4.021.237	217.784	15.605.882

Source: Compiled by the researcher based on (GIE Monétique, 2025)

The growth in the number of bank cards in Algeria highlights a notable improvement in the use of formal financial services. This represents an opportunity to further promote a culture of digital financial transactions and support the transition towards a cashless economy. Moreover, the strong growth in Gold Cards indicates rising trust among individuals in electronic banking services.

7. SWOT Analysis of Mobile Payment (M-Payment) Adoption in Algeria:

With the increasing use of smartphones and internet services, the mobile payment (M-Payment) sector in Algeria has witnessed remarkable growth, driven by digital trends and government initiatives aimed at modernizing the financial system. However, this transformation faces a set of technical, social, and regulatory challenges.

The following table presents a SWOT analysis that highlights the main strengths, weaknesses, opportunities, and threats related to the adoption of this system in the Algerian context:

Table 14. SWOT Analysis of Mobile Payment (M-Payment) Adoption in Algeria

Strengths	**Weaknesses**
1. High mobile phone penetration, providing a large user base that can benefit from mobile payment services.	1. Weak digital financial literacy: a large part of the population still lacks awareness of how to use mobile payment services.
2. Increasing use of high-speed internet, supporting the spread of digital payment applications and enhancing their reliability.	2. Low penetration of point-of-sale (POS) terminals: despite growth, electronic payment devices remain limited, restricting the practical expansion of mobile payments.
3. Government support and official regulation: establishment of a national body for the development of mobile financial services and the enactment of the 2018 E-commerce Law provide a favorable legal framework for M-Payment.	3. Unequal quality of internet services: disparities in coverage and speed between urban and rural areas hinder smooth use of financial applications.
4. Adoption of new digital banking services: the launch of applications such as BaridiMob, Wimpay, and Banxy reflects the involvement of financial institutions in digital transformation.	4. Complexity of some digital banking procedures: certain applications require complicated steps or manual confirmations, limiting ease of use.
Opportunities	**Threats**
1. Rapid growth of e-commerce: the expansion of online sales platforms represents an opportunity to integrate M-Payment with the digital commerce ecosystem.	1. Cybersecurity concerns: the rise of potential cyberattacks raises user fears about the protection of their financial data.

2. Partnerships between banks and telecom operators: growing cooperation between financial and telecom actors helps provide unified and seamless payment solutions.	2. Unregulated competition: entry of foreign applications or unlicensed solutions may hinder the development of the regulated local market.
3. Rising demand for cashless payment solutions: following the pandemic, the demand for contactless transactions has increased, opening the way for wider adoption of M-Payment systems.	3. Legislative inconsistencies between sectors: legal gaps in linking the banking sector with telecommunications may impede effective coordination.
4. Global trend towards Fintech: the acceleration of innovation in digital payment solutions could help Algeria import successful models and adapt them locally.	4. Resistance of certain social groups to digital change: some groups, especially the elderly or residents of inland regions, still prefer traditional transactions.

Source: Prepared by the Researcher

8. Conclusion:

Amid the rapid digital transformations taking place worldwide, mobile payment (M-Payment) systems represent one of the fundamental pillars for building an integrated and inclusive digital economy. This study sought to analyze the economic, social, technological, and legal environment surrounding the adoption of this service in Algeria, using a strategic approach based on the SWOT model. The aim was to identify the key factors influencing its adoption, determine its strengths and weaknesses, and explore future opportunities and challenges.

The findings reveal that Algeria possesses promising conditions for the widespread adoption of the mobile payment system, most notably:

- The widespread penetration of mobile phones;
- The rapid growth in the number of internet users (particularly 4G);
- Institutional support through the legal and regulatory framework;
- The launch of digital banking applications that bring financial services closer to citizens.

On the other hand, the study highlighted several structural challenges, such as:

- Weak digital financial literacy among a significant portion of the population;
- Geographic disparities in network coverage and internet service quality;
- Low density of point-of-sale (POS) terminals;
- Certain legal and technical constraints hindering innovation and integration between banking and technological stakeholders.

Moreover, statistical data for the period 2022–2024 revealed a significant increase in the volume of electronic financial transactions, particularly mobile

payments and transfers, reflecting growing user confidence and a fertile ground for expanding these services.

Based on these findings, the study concludes that the success of the mobile payment system in Algeria depends on the extent of coordination between regulatory authorities, financial institutions, and telecommunications companies, in addition to the need for investment in financial literacy and the expansion of technological infrastructure. Such efforts are essential to achieving an effective and inclusive digital transformation that supports economic growth and enhances financial and social inclusion

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