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AN ANALYTICAL STUDY OF E-COMMERCE IN ALGERIA: BETWEEN REALITY AND ASPIRATIONS

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ABSTRACT

This study examines the efforts exerted by the Algerian authorities in developing the infrastructure for e-commerce as well as the advancements in electronic payment systems that have contributed to the widespread adoption of this form of commerce. The study aims to identify the endeavours undertaken by Algeria in the development of e-commerce and electronic payment methods, in addition to diagnosing the current state of this commerce and the factors enabling its development. The findings of this study indicate that Algeria has made significant progress in terms of e-commerce infrastructure, the development of electronic payment methods, and their increased dissemination. However, these efforts are deemed insufficient, as Algeria still ranks relatively low at the global level in the field of e-commerce.

KEYWORDS

E-Commerce, Electronic Payment Methods, Infrastructure, Algeria

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Introduction.

The world has witnessed significant advancements in the field of information and communication technologies, which has been accompanied by a transformation in the commercial domain through the emergence of e-commerce. E-commerce differs in its regulations, norms, and characteristics from traditional commerce. The advent of e-commerce was a direct result of the communications revolution and the advent of the internet, which has rendered the world a small village, eliminating spatial and geographical barriers between countries. The internet and the emergence of electronic payment methods have facilitated the increased proliferation of e-commerce, which fundamentally relies on advanced electronic payment methods that have supplanted paper currency in completing and settling transactions between commercial parties. Consequently, various countries around the world have hastened to adopt e-commerce and strive to create an enabling environment for its development, given the advantages it brings to national economies.

Algeria cannot deviate from this general trend in the context of economic globalisation, which necessitates keeping pace with the changes occurring at the international level. Thus, it has become imperative for Algeria to attempt to provide an appropriate environment for the evolution of e-commerce and to expand its use, which can only be achieved through the development of electronic payment methods, as they constitute the central pillar for the establishment of this form of commerce.

Research Problem:

On the basis of the above, the research problem is crystallised and may be articulated in the following central question:

What efforts have been exerted by Algeria to develop e-commerce? How have these efforts contributed to the increased proliferation of e-commerce?

Subquestions:

- What is meant by e-commerce, and what are the prerequisites for its success?
- Does Algeria possess an environment conducive to e-commerce?
- What is the current state of e-commerce and electronic payments in Algeria?
- What measures can facilitate the development of e-commerce in Algeria?

Research Hypotheses:

- E-commerce encompasses all transactions conducted via electronic means, which necessarily require the existence of a secure and advanced electronic payment system.
- Algeria has made considerable efforts in developing electronic payment methods and providing the infrastructure necessary for the adoption of e-commerce.
- E-commerce in Algeria is experiencing increasing proliferation as a result of the legislative and infrastructural environment and electronic payment systems that have been established.
- The development of e-commerce necessitates further efforts in advancing electronic payment methods that will facilitate the broader dissemination of e-commerce.

Significance of the Study:

The significance of this study is derived from the growing importance that e-commerce has assumed globally, rivalling traditional commerce. Accordingly, this research addresses the efforts made by Algeria to develop e-commerce through the provision of the basic infrastructure necessary for its establishment and the development of payment methods to facilitate the transition from traditional means to electronic payment methods, thereby contributing to the increase in and proliferation of e-commerce.

Research Objectives:

This study seeks to achieve the following objectives:

- To address the concepts related to e-commerce and electronic payment methods, given their fundamental role in establishing this form of commerce.
- To present the efforts exerted by Algeria in the development of e-commerce, whether in terms of the legislative framework or the provision of the basic infrastructure required for this commerce.
- To review Algeria's endeavors in modernising electronic payment methods and systems and their evolving use.
- To present the current state of e-commerce proliferation in Algeria and propose suitable solutions for its further development.

Research Methodology:

To cover all aspects of the topic and address the principal research problem, a descriptive analytical method was adopted, as it is deemed appropriate for the study of such subjects. A conceptual framework related to e-commerce and electronic payment methods was established, and the efforts of Algeria in developing e-commerce and electronic payment systems and their evolution were presented.

Structure of the Study:

The research is organised into three main sections. The first section addresses the conceptual framework of e-commerce and electronic payment methods. The second section discusses Algeria's efforts to develop the infrastructure for e-commerce and electronic payment methods. The third section is devoted to the current state of e-commerce and the factors underpinning its development.

Section One: Conceptual Framework of E-Commerce and Electronic Payment Methods

I. The Scientific Foundation of E-Commerce

1. Definition of e-commerce:

E-commerce has been defined in various ways. It has been described as any commercial transaction between the seller and the buyer in which the internet plays an overall or partial role, such as providing information (via the internet or other commercial networks) relating to a particular good or service for subsequent acquisition, regardless of whether a payment is made electronically, by paper cheque, in cash, or by any other means (Bekhti, 2005, p. 42). It is also defined as the exchange of products and services through an electronic intermediary, namely, the internet. This includes all activities related to the production, distribution, marketing, sale, or delivery of goods and services to the buyer via electronic means (Taha, 2005, p. 319).

The Algerian legislature has defined e-commerce as the activity by which an electronic provider proposes or guarantees the provision of goods and services remotely to an electronic consumer via electronic communications, as stipulated in Article 06 of Law 18/05 dated May 10, 2018, concerning e-commerce.

E-commerce can be considered from several perspectives (Attar, 2003, pp. 2–3):

- **From a communications perspective**, e-commerce involves the transmission of information, services, products, and payments via telephone lines, computer networks, or any electronic means.

- **From a services perspective**, e-commerce is a tool that enables enterprises, consumers, and administrations to reduce the cost of services while improving their quality and increasing delivery speed.

In this context, distinguishing between e-commerce and internet commerce is essential. The latter constitutes a subset of the former and is not synonymous with it. For example, if an order is entered for a client into a computer system, an electronic invoice and a new electronic entry in the journal and ledger are automatically generated. This constitutes e-commerce. If this invoice is subsequently sent to the client via email over the internet, it represents both internet commerce and e-commerce simultaneously.

Similarly, it is possible to differentiate between e-commerce and some related concepts, such as e-business and e-marketing (Al-Najjar, Diab, & Al-Najjar, 2006, pp. 91–92). E-business refers to the utilisation of information technology means, including the internet, for conducting business activities. E-business serves as an overarching concept under which both e-commerce and e-marketing fall. The latter refers to the implementation of all activities associated with the marketing function, such as advertising, sales, distribution of goods and services, and after-sales service electronically through the internet. E-marketing is therefore considered a component of e-commerce.

2. Characteristics of e-commerce:

E-commerce is distinguished by a set of features not found in traditional commerce. Its principal characteristics include the following (Othman & Al-Ashmawi, 2007, pp. 587, 288):

2.1 Elimination of Paper Documents:

Electronic transactions obviate the need for paper documents exchanged in traditional transactions, as all procedures, transactions, and correspondences are conducted electronically without the use of any paper. Thus, the electronic message becomes the sole legal document available to both parties in the event of a dispute.

2.2 Global sales

In the context of e-commerce, both large and small enterprises are able to conduct sales operations across all countries worldwide by utilising the internet.

2.3 Spatial separation

E-commerce enables organisations to manage their commercial transactions from any geographical location, as a company's information hub may be situated anywhere. Indeed, a single company may have multiple locations in various countries to facilitate communication with clients according to their geographical distribution.

2.4 Inability to Identify Contracting Parties

Within the framework of e-commerce, the parties to a transaction do not see one another, and either party may lack all essential information regarding the other, in contrast to traditional commercial transactions.

2.5 Emergence of new products (digital products):

Internet transactions have made it possible to deliver certain products electronically, such as “computer software, music recordings, video films, books, research papers, and reports,” in addition to various services such as consultancy.

Another characteristic of e-commerce is the reduction in the time required for buying and selling goods, unlike traditional commerce, which necessitates significant time to complete a transaction. The following figures illustrate the procedures of traditional commerce from both the buyer's and the seller's perspectives.

3. Types of e-commerce

Several types of e-commerce can be distinguished according to the parties involved in the transaction. Typically, the following categories of e-commerce may be identified (Al-Najjar, Diab, & Al-Najjar, 2006, pp. 96–100):

3.1 Business-to-consumer (B2C) e-commerce:

In this type of e-commerce, individuals purchase directly from the e-commerce website without intermediaries. The customer selects the desired good or service and pays for it directly through the website and an electronic account.

3.2 Business-to-Business (B2B) E-Commerce

This refers to e-commerce transactions conducted between commercial entities. This type of e-commerce is characterised by its high value due to the large volume of transactions occurring within this sector. There are two forms of B2B e-commerce:

- **Vertical B2B Portal:** This portal focuses on a specific category of services across various industries and fields. Verticalnet.com was a pioneer in creating specialised groups or units for specialised services, such as medical care.

- **Horizontal B2B Portal:** These are e-commerce sites that focus on all services related to a particular industry.

3.3 Business-to-government (B2G) e-commerce

This type pertains to transactions between the business sector and government entities, which are not limited to obligatory dealings such as tax payments but also encompass sales and purchases for government agencies. For example, Grainger.com has allocated a section of its portal for the United States government and its agencies, offering them services through this dedicated gateway.

4. The Economic Dimension of E-Commerce

E-commerce creates a conducive environment for increasing and enhancing productive efficiency, thereby generating economic effects in favour of the economies that employ this type of commerce. The enhancement of efficiency and productivity is achieved through the following (El-Sayed, 2006, pp. 201–204):

- E-commerce brings together many suppliers and buyers of raw and intermediate materials on a unified and specified price list, thereby reducing the costs associated with individual purchasing transactions.

- Through the creation of a broad market, e-commerce not only fosters competition but also intensifies it, thereby reinforcing the rule of the market and ensuring that survival is reserved for those who produce best and sell at the most favourable prices. This results in continuous motivation for improvement and development among producers of goods and services.

- E-commerce enables what is referred to as “speed production,” saving the producer time both in the production process and during the contractual processes of buying and selling. The producer is no longer required to travel to the supplier's location, submit purchase orders, arrange insurance policies and shipping, or issue settlement instructions, among other tasks.

- E-commerce provides the producer with access to raw and intermediate materials of the desired specifications at the required time and minimal cost owing to the availability of rapid mechanisms for conducting negotiations and completing transactions. One of the fundamental challenges facing the production process is the regularity of the supply of raw materials essential to production.

- The continuous availability of raw materials allows producers to benefit from the reduction in costs previously incurred for storage, thereby contributing to a reduction in production costs and, consequently, enabling sales at lower, more competitive prices.

- In the context of e-commerce, production is carried out according to the available purchase orders, thereby eliminating the need for storage and its associated costs.

In the marketing domain, the impacts on the adopting institutions and, by extension, on the economy may be summarised as follows:

- Expanding the sales area and attracting new customers worldwide, thereby increasing the institution's external market share.

- Closely monitoring competition, particularly if all competitors utilise these technologies for innovation and development.
- Reducing the overall costs associated with the marketing process.
- To develop the institution's management policies and enhance services, including the shift from traditional invoices and contracts to electronic invoices and contracts.

II. Electronic Payment Methods as Essential Prerequisites for E-Commerce

1. Definition and Characteristics of Electronic Payment Methods:

Specialists have studied and analysed electronic payment methods because of their general importance to the economy and, in particular, their role in the development of e-commerce. Some define electronic payment methods as systems that enable parties engaged in e-commerce to conduct financial exchanges and settle transactions electronically instead of using conventional cash and paper cheques. Through the internet, sellers provide easy, rapid, and secure methods for receiving payments from customers (Al-Taie, 2010, p. 178).

Furthermore, Article 69 of Ordinance 03/11, dated August 26, 2003, which concerns currency and credit, defines electronic payment methods as all tools that enable any person to transfer funds, regardless of the underlying instrument or technical means employed.

Electronic payment methods are also defined under Article 06 of Law 18/05 relating to e-commerce as any authorised payment instrument by the prevailing legislation, which enables its holder to make payments either in proximity or remotely via an electronic system. It is evident from this definition that the Algerian legislature did not confine electronic payment methods solely to bank-issued cards but extended them to include electronic cheques and the Gold Card as well.

Electronic payment methods are characterised by the following features (Barakat & Taibi, 2019, p. 126):

- **International Nature:** Electronic payment is international in scope and is an instrument accepted by all countries. It is used to settle accounts in transactions conducted electronically between users worldwide, particularly as commercial activities expand both regionally and internationally. As such, electronic payment methods facilitate enhanced control over distribution and transportation processes.
- **Use of Electronic Money:** Payments are made using electronic money, which represents a monetary value embedded in a card with digital memory or in the main memory of the institution that oversees the management of the exchange process.
- **Remote Transaction Settlement:** This method is used to settle electronic transactions at a distance, wherein contracts are concluded between parties in different locations, and payments are effected via the internet. Information is exchanged electronically across distances through wireless communication, and payment orders are executed by electronic data that enable direct communication between the contracting parties.

2. Types of Electronic Payment Methods:

There are numerous electronic payment methods, too many to mention in detail here. Therefore, we address those electronic payment methods that are most relevant to e-commerce and its development.

2.1 Electronic Cheque:

An electronic cheque is a certified and secured electronic message sent by the issuer of the cheque to the recipient (the bearer) for the latter to endorse and present it to the bank operating via the internet. The bank then transfers the cheque's monetary value to the bearer's account. Subsequently, it cancels the cheque, returning it electronically to the recipient (the bearer) as proof that the cheque has indeed been processed. The recipient can electronically verify that the amount has been credited to their account (Dahiya, 2019/2020, p. 45).

The concept of the electronic cheque is based on the existence of an intermediary for the completion of settlement, namely, the clearing institution (the bank), with which both the seller and the buyer are registered by opening current accounts with their respective balances, with each party's electronic address being specified and registered in the database of the electronic bank (Farah, 2021, p. 230).

The electronic cheque is processed through the following steps (Dahiya, 2019/2020, p. 45):

- The buyer (cheque issuer) registers with the clearing institution, which is usually a bank, by opening an account and specifying their electronic signature, which is recorded in the database of the clearing institution.
- The seller (cheque bearer) also registers with the same clearing institution, opens an account, and has their electronic signature registered in the database of the clearing institution.
- The cheque issuer prepares the electronic cheque and sends it via the network to the intended recipient (the bearer).

- The recipient (bearer) endorses and presents the cheque to the bank via the internet.
- The bank transfers the cheque's monetary value to the account of the bearer.

2.2 Bank Cards:

Although bank (or payment) cards are diverse and numerous, appearing similar in their physical composition and outwards appearance, they differ in terms of the functions they perform. This functional diversity is attributable to two main factors (Dahiya, 2019/2020, p. 46):

- The technical structure of the cards: A card is merely a document or instrument with no legal value in itself, but it is equipped with a magnetic stripe and information that enables the holder to carry out payment and withdrawal operations. Therefore, the card's form and technical configuration are fundamental to facilitating payment operations and ensuring their ease.
- The multiplicity of issuing entities, which may include financial institutions, banks, and postal institutions.

Bank cards are magnetic plastic cards of specific standard dimensions, containing data and information that may be visible or invisible. They are issued by banks to their customers to settle transactions instead of using paper currency (Al-Shaibai, 2008, p. 36).

The electronic payment process using a bank card involves four parties: the card issuer, the cardholder, the merchant, and the authorised card user (Zayed, 2021, pp. 60–61).

- **The First Party:** The card issuer, who is legally authorised to issue the card to the holder and, on their behalf, pays the merchant the value of the purchases.
- **The second party:** the cardholder, i.e., the person to whom the card is issued or who is entitled to use it and who is obligated to fulfil all obligations arising from the use of the card towards the issuer.
- **The third party:** The merchant, who enters into a contract with the card issuer to provide goods and services that are in demand by cardholding customers.
- **The Fourth Party:** The authorised user of the card; this may be the cardholder himself or herself or another individual. The authorised user may be as follows:
 - An employee of a company that issued the card in its name and authorises the employee to use it for its purposes.
 - The card user may be the actual cardholder who maintains an account with the issuing bank and is responsible for reimbursing the card issuer according to their agreement.
 - The authorised person may not be the cardholder whose name the card was issued but is granted the authority to use it, thereby acting as an agent for the cardholder in any agreement or contract concluded with the merchant, as if the contract were made between the cardholder and the merchant.
 - If the card user concludes a contract with the merchant for their benefit, they are not considered a party to the agreement between the card issuer and the cardholder and, in any case, are not obliged to pay the value of that contract to the card issuer.

Bank cards are divided into several types, which may be outlined as follows:

- **Credit Card:** A credit card is a small, personal plastic card issued by banks or international finance companies and is granted to individuals with ongoing bank accounts. Using this card, the customer may pay for their purchases at commercial establishments accredited by the card-issuing bank, with settlement occurring at a later date.
- **Secured Credit Card:** These are cards that provide the customer with credit guaranteed by their deposits held at the bank. This type of card is available to individuals who are not eligible for traditional credit cards.
- **Prepaid Cards:** These are cards that the holder loads with a specific amount of money. With each transaction, the corresponding value is deducted from the card's balance until the loaded amount is depleted. If the holder wishes to use the card again, they simply recharge it.
- **Optical Cards:** These may be either magnetic or chip-based cards containing three-dimensional holographic images of the cardholder to enhance security, especially for merchants and banks lacking electronic machines.
- **Memory Cards:** Developed in line with technological advancements, these are among the most sophisticated types of cards. They possess the automatic capability for payment and, owing to the embedded microprocessor, provide optimal settlement for transactions at accredited merchants. This type represents the third generation of electronic cards and performs all the functions of the previously mentioned cards. Memory cards are subdivided into three types (Dahiya, 2019/2020, p. 50):
 - **Memory Card:** Stores information and contains a microprocessor.

○ **Smart Card:** Contains a small data-processing microprocessor and serves as a memory device for storing information.

○ **Intelligent Card:** Includes a microprocessor, memory, magnetic stripe, a small display screen, and input keys.

• **Electronic Purse:** Representing the fourth generation of electronic cards, this relies on electronic memory technology. It features a single memory unit equipped with a computational and microprocessor unit in which monetary values are stored. The use of this card is based on a collection process carried out by the card issuer, whereby electronic units are loaded onto the memory of the electronic purse in exchange for the holder depositing the equivalent monetary value into their account. Unlike previous cards, the holder prepays for the electronic units, and payment is effected by transferring these units from the holder's card to the seller's card. This does not impact the bank accounts of either the buyer or seller; instead, the issuer converts and transfers the electronic units into cash via a bank transfer to the seller's account (Dahiya, 2019/2020, p. 50).

3. Success Factors for Electronic Payment Methods:

For electronic payment methods to succeed and achieve greater proliferation and utilisation in settling e-commerce transactions, several conditions must be met. Some researchers identify these as independence, compatibility, security and protection, fees and costs, ease of use, and the extent of their dissemination (Barakat & Taibi, 2021, p. 131).

3.1 Independence:

There must be procedures and methods, including the development of specific programs, to enable both merchants and consumers to use and execute electronic payment transactions independently.

3.2 Compatibility:

Importantly, electronic payment transactions can be executed across various operating systems and different types of accounts, which may require particular systems or devices for electronic payment implementation.

• Security and Protection:

• Security must be ensured in data transmission and transaction execution. If high risks exist for either the buyer or seller in electronic payment operations, this will hinder the widespread adoption of such technologies.

3.3 Fee and Cost Value:

The higher the commission deducted for a particular electronic payment method is, the less likely it is that such methods will see widespread adoption. The same applies to the fees and commissions charged for using electronic payment methods; if they are significant, this will discourage the use of electronic payments, particularly for small and low-cost purchases.

3.4 Ease of Use:

The easier it is to use electronic payment methods, the faster and more widely they will spread.

3.5 Extent of Dissemination:

For an electronic payment method to be successful, it must be utilised by large numbers of both consumers and merchants.

The advantages inherent in electronic payment methods enable them to support e-commerce by expanding their usage. This is primarily due to their capacity to finalise transactions in a short period, without requiring either contractual party to wait for an extended time to complete the deal. Moreover, as previously mentioned, e-commerce allows economic actors to interact regardless of the distance separating them and to transact at any time without the need for paper documents. Accordingly, electronic payment methods facilitate the accomplishment of these tasks by contributing to the following:

• The increased global proliferation of e-commerce is due to the development of software and applications to secure electronic commercial transactions.

• The facilitation of sales and purchases between sellers and buyers on a broad, global scale, as they reduce the distance between the parties involved.

Section Two: Algeria's Efforts to Develop the Infrastructure for E-Commerce and Electronic Payment Methods

I. Infrastructure for E-Commerce in Algeria

1. Enactment of the Legislative Framework for E-Commerce:

In recognition of the importance and benefits of e-commerce, the Algerian authorities enacted Law No. 18/05 of May 10, 2018, about e-commerce. This law specifies the regulations governing this type of commerce and delineates the conditions required for conducting e-commerce activities. These conditions include the necessity for registration in the commercial register or the register of traditional industries and crafts, as well as the requirement to publish an electronic website or page on the internet hosted in Algeria with the extension “.com.dz”. The electronic provider's website must also include mechanisms that enable verification of its authenticity, as stipulated in Article 08 of Law 18/05 relating to e-commerce.

In preparing an enabling environment for e-commerce, the Finance Law of 2018 stipulates that every economic operator, as defined by Law 04/02 establishing the applicable rules for commercial practices (as amended and supplemented), who offers goods or services to consumers, must provide them with an electronic payment method enabling them to pay for their purchases via electronic payment cards upon request. Any violation of this obligation is punishable by a fine of 50,000 DZD (Law No. 17--11, 2017).

2. Fixed and Mobile Telephone Network:

The telephone network is considered a complementary and essential tool for e-commerce, as it facilitates communication between the parties involved in electronic commercial contracts. In this context, Algeria's telephone network, both fixed and mobile, has experienced rapid and significant growth.

2.1 Fixed Telephone Network

Statistics published by the Regulatory Authority for Post and Electronic Communications indicate that the total number of fixed-line subscribers reached 5,758,353 in the first quarter of 2023. Wired fixed-line subscribers are the largest group, with 3,632,521, followed by (4G LTE) subscribers, then fixed-line subscribers (FTTH fibre optic), and finally LS subscribers, as shown in the following table.

Table 1. Number of Fixed Telephone Subscribers as of 31/03/2023

As of 31/03/2023				
Type of Subscription	Wired	4G LTE	FTTH Fibre Optic	LS
Number of Subscribers	3.632.521	1.493.117	617.324	15.391
Total Subscribers	5.758.353			

Source: Fixed Telephone Market Observatory in Algeria (2023), Regulatory Authority for Post and Electronic Communications, p. 01

Among the total number of subscribers, corporate subscriptions account for 455,848 subscribing institutions. Statistics indicate that by the end of the first quarter of 2023, the fixed-line telephone penetration rate had reached 13.04%, while the proportion of households possessing a fixed telephone line amounted to 78.24%, equivalent to 5,758,464 households out of a total of 7,360,000 households. Notably, the average monthly number of minutes per subscriber stood at 15 minutes per month, which demonstrates the limited use of fixed telephony by subscribers. The primary purpose of subscription is to benefit from internet connectivity via the fixed telephone line.

2.2 Mobile Telephone Network

In contrast to fixed-line subscriptions, the number of mobile network subscribers reached 49,308,763 by the end of the first quarter of 2023 across the three licenced operators in Algeria, compared with 49,018,766 subscribers at the end of 2022. The Regulatory Authority reports these figures for Post and Electronic Communications. Consequently, the penetration rate at the end of the first quarter of 2023 was 111.66%.

Table 2. Evolution of the Total Number of Subscribers in Mobile Networks

	Q1 2022	Q2 2022	Q3 2022	Q4 2022	Q1 2023
Mobilis	20,304,274	20,367,866	20,782,507	21,098,772	21,360,265
Djezzy	14,661,938	14,672,436	14,994,977	15,177,875	15,205,574
Ooredoo	12,705,272	12,624,923	12,727,217	12,742,119	12,742,924
Total	47,671,484	47,665,225	48,504,701	49,018,766	49,308,763

Source: Mobile Telephone Market Observatory in Algeria, Regulatory Authority for Post and Electronic Communications, 2023, p. 05

3. Internet Network:

The internet was introduced to Algeria in 1991 by the Algerian UNIX Association in collaboration with the Association of Algerian Scientists (ASA) through a connection with Italy. Initially, internet use in Algeria was facilitated by the sole distributor, the Centre for Scientific and Technical Research on Information (CERIST) (Kouachi & Kaddi, 2022, p. 558).

Following the issuance of Executive Decree No. 98/257 of August 25, 1998, amended by Decree No. 307/2000 of October 14, 2000, which established the conditions and modalities for providing internet services, new public and private internet service providers emerged in Algeria alongside CERIST. The number of licences granted in 2001 reached 65 (Bekhti, The internet in Algeria, 2002, p. 24). Internet usage in Algeria subsequently evolved, and by the first quarter of 2023, the total number of internet subscribers (both fixed and mobile) stood at 50,182,538, of which 4,895,218 were fixed internet subscribers (representing 9.75% of total internet subscriptions) and 45,287,320 were mobile internet subscribers (representing 90.25% of the total internet subscribers in Algeria).

Table 3. Evolution of the Total Number of internet Subscribers in Algeria from 2022–2023

	Q1 2022	Q2 2022	Q3 2022	Q4 2022	Q1 2023
Number of Subscribers (million)	46.97	47.26	48.51	49.45	50.18

Source: internet Market Observatory in Algeria, Regulatory Authority for Post and Electronic Communications, 2023, p. 07

II. Development of the Electronic Payment Network and Methods

To keep pace with developments in payment methods and to further increase the spread of e-commerce, Algeria has undertaken numerous efforts in this regard, as evidenced by the following:

1. Establishment of the electronic payment company:

The Electronic Payment and Automatic Interbank Relations Company (SATIM) was established in 1995 by seven banks: the Savings and Reserve Bank, the Algerian Popular Credit, the National Bank of Algeria, the Algerian Foreign Bank, the Local Development Bank, the Agriculture and Rural Development Bank, and the Al Baraka Bank, in addition to the insurance company CNMA. The company serves as the operator for interbank electronic payments in Algeria for both local and international electronic cards, acting as one of the technical instruments to support banking development and modernisation programs, particularly in the field of enhancing card-based payment methods (<https://www.satim.dz/ar/la-satim>).

Currently, the SATIM consortium comprises 18 members in the interbank electronic payment network, including six public banks and 11 private banks.

SATIM has experienced considerable progress and sustainable growth since its establishment, having connected more than 1,351 ATMs and 40,000 electronic payment terminals to its servers, in addition to more than 274 commercial websites operating on its platform.

The SATIM is responsible for performing the following tasks (<https://www.satim.dz/ar/la-satim>):

- Developing and promoting the use of electronic payment methods.
- Establishing and managing the technical and regulatory platform to ensure full interoperability between all participants in Algeria's electronic banking network.
- Participating in the implementation of interbank rules for managing interbank electronic payment products, primarily through its consultative role.
- Supporting banks in the creation and development of electronic payment products.
- Issuing cheques and cards for payment and cash withdrawals.
- All procedures governing the operation of the electronic payment system, including mastery of technology, process automation, transaction speed, and optimisation of financial flows, are implemented.
- Managing the communications and administration functions of ATMs.
- Allocating interbank withdrawal cards.
- Creating keys for members with their authorisation system.
- Moreover, at the operational level, it provides services such as transaction routing and flow processing, issuance and allocation of MasterCard cards, acquisition of transactions, cash withdrawals at ATMs, and payments at electronic payment terminals.

2. The Reality of Electronic Payment in Algeria

2.1 Development of Electronic Payment in Algeria:

According to official statistics published on the official website of the Interbank Electronic Payment Consortium, 379 web-based merchants in Algeria are currently enrolled in the interbank electronic payment system. Since the inception of internet-based electronic payments, a total of 30,030,178 transactions have been recorded, as shown in the following table.

Table 4. Electronic Payment Transactions for the Period 2016–2023

	2016	2017	2018	2019	2020	2021	2022	2023
Telephone/Telecom	6536	87286	138495	141552	4210284	6993135	7490626	5468055
Transport	388	5677	871	6292	11350	72164	195490	208304
Insurance	51	2467	6439	8342	4845	8372	23571	24236
Bill Issuer	391	12414	29722	34806	85676	120841	302273	388443
Administrative Service	0	0	1455	2432	68395	155640	153957	865999
Services	0	0	0	5056	213175	457726	705114	612402
Goods Sales	0	0	0	0	235	13468	24169	31238
Sports & Entertainment	0	0	0	0	2	0	152925	473398
Total Transactions	7366	107844	176982	202480	4593960	7821346	9048125	8072075

Source: www.giemonetique.dz/ar/qui-sommes-nous/activite-paiement-sur-internet

It is evident from the table above that internet-based payment transactions increased significantly from 2020 onwards, following the integration of Algérie Poste into the Interbank Electronic Payment Consortium and the achievement of interoperability between interbank cards and the Gold Card, which became effective on January 5, 2020. A substantial rise in electronic payment transactions is thus observed, attributed to the services offered by Algérie Poste to citizens through the Gold Card, which enables electronic payments and electronic transfers.

2.2 Development of Cash Withdrawal Activity (Evolution in the Number of ATMs):

There has been remarkable growth in the number of banking ATMs, which stood at 1,370 in 2016 and increased to 3,770 by the end of August 2023. The following table shows the development in the number of interbank ATMs.

Table 5. Evolution in the Number of Interbank ATMs during the 2016–2023 Period

Year	Number of Interbank ATMs	Year	Number of Interbank ATMs
2016	1370	2020	3030
2017	1443	2021	3053
2018	1441	2022	3658
2019	1621	2023	3770

Source: www.giemonetique.dz/ar/activite-retrait-sur-atm, accessed 15/04/2025

From the table above, it is clear that the number of interbank ATMs more than doubled, increasing by over 275% compared with 2016. This substantial growth is attributed primarily to the integration of Algérie Poste into the Interbank Electronic Payment Consortium and the achievement of interoperability between interbank cards and the Gold Card.

This increase in the number of ATMs has led to a continuous rise in the volume of withdrawal transactions conducted via ATMs across the country. The number of withdrawal transactions executed in 2016 was 6,868,031, increasing to 114,062,647 by August 2023, an increase of more than sixteenfold compared with 2016. The following table shows the evolution of withdrawal transactions from 2016--August 2023.

Table 6. Total Number of Withdrawal Transactions during the Period 2016–2023

Year	Number of Withdrawal Transactions	Year	Number of Withdrawal Transactions
2016	6,868,031	2020	58,428,933
2017	8,310,170	2021	87,722,789
2018	8,833,913	2022	128,035,361
2019	9,929,650	2023	114,062,647

Source: www.giemonetique.dz/ar/activite-retrait-sur-atm, accessed 16–17/04/2025

2.3 Payment activity at electronic payment terminals:

Electronic payment terminals (EPTs) experienced continuous growth from 2016 to August 2023. The number of EPTs was 5,049 in 2016 and increased rapidly to reach 50,848 EPTs deployed across the country by the end of August 2023, representing a tenfold increase compared with 2016. The following table illustrates the evolution of electronic payment terminals from 2016 to August 2023.

Table 7. Evolution in the Number of Electronic Payment Terminals during the 2016–2023 Period

Year	Number of Electronic Payment Terminals	Year	Number of Electronic Payment Terminals
2016	5,049	2020	33,945
2017	11,985	2021	37,561
2018	15,397	2022	46,263
2019	23,762	2023	50,848

Source: www.giemonetique.dz/ar/activite-retrait-sur-atm, accessed 19/04/2025

The increase in the number of electronic payment terminals from 2016–2023 was accompanied by an increase in the number of electronic payment transactions, which increased from 65,501 in 2016 to 2,444,375 by the end of August 2023. This growth led to a corresponding increase in the total value of transactions resulting from electronic payments. The following table illustrates the evolution in the number of electronic payment transactions during the period 2016–2023.

Table 8. Number of Electronic Payment Transactions during the 2016–2023 Period

Year	Number of Electronic Payment Transactions	Year	Number of Electronic Payment Transactions
2016	65,501	2020	711,777
2017	122,694	2021	2,150,529
2018	190,898	2022	2,712,848
2019	274,624	2023	2,444,375

Source: www.giemonetique.dz/ar/activite-retrait-sur-atm, accessed 19/04/2025

The table above shows that there has been progress in the number of electronic payment transactions, increasing from 65,501 transactions in 2016 to 2,444,375 transactions by August 2023. Consequently, the total value of transactions rose from 444,508 million DZD in 2016 to 19,343,056 million DZD in 2022, reaching 19,463,261 million DZD by the end of August 2023. This sustained and substantial increase is attributable to the services enabled by the Gold Card issued by Algérie Poste, as well as the necessity imposed by the COVID-19 pandemic for settling transactions electronically.

Section Three – Current State of E-Commerce and the Factors Underpinning Its Development

Having addressed Algeria’s efforts in establishing e-commerce and providing the necessary supporting factors, including modern communication systems, the internet, and electronic payment systems, this section will discuss the current state of e-commerce and the factors enabling its further development.

I. Current State of E-Commerce in Algeria

1. The Situation of E-Commerce in Algeria

E-commerce in Algeria has begun to expand, especially since the issuance of Law No. 18/08 relating to e-commerce and the widespread use of the Gold Card issued by Algérie Poste, which enables electronic payments for goods, purchases, and bills. Furthermore, the Algerian legislature’s requirement for economic operators to provide electronic payment methods to consumers, as stipulated in the 2018 Finance Law, has made it necessary to shift towards settling transactions electronically. Although these transactions may not yet constitute e-commerce in the broadest sense, they represent the initial phase of transitioning towards the expansion of e-commerce activities.

Nevertheless, international statistics show that Algeria occupies a relatively low global ranking in terms of e-commerce adoption. According to the B2C E-Commerce Index Report issued by the United Nations Conference on Trade and Development (UNCTAD), Algeria is ranked low on the global scale, as shown in the table below.

Table 9. Algeria’s Ranking in B2C E-Commerce during the 2016–2021 Period

Year	2016	2017	2018	2019	2020
Algeria’s Global Rank	95	97	111	107	80

Source: UNCTAD Reports for the 2016–2020 Period

The table above shows that Algeria occupies a low position in the global ranking for the proliferation of business-to-consumer (B2C) e-commerce, with its ranking fluctuating over the years. This is due to the country’s inability to keep pace with the developments witnessed in other nations, resulting in Algeria’s position dropping to 111th worldwide in 2018. However, in 2020, Algeria ranked 80th out of 152 countries

covered by the report, a shift attributable to the COVID-19 crisis, which necessitated a move towards e-commerce and the use of electronic payment methods and technologies to fulfil financial commitments.

2. The Most Prominent E-Commerce Websites Active in Algeria:

Numerous commercial websites are operating in Algeria, which is experiencing increasing prosperity due to the growing availability of fixed and mobile internet access, particularly following the launch of third-generation services in 2014 and fourth-generation services in 2016. Notable examples of these websites include the following:

Table 10. The most prominent e-commerce websites in Algeria

Website	Date of Establishment	Field of Activity	Other Notes
Ouedkniss.com	2006	Commercial intermediary between small ad owners and those wishing to buy, sell, or exchange various products and goods	Receives between 100,000 and 120,000 visitors daily, reaching 3 million visitors per month
Echerily.com	05/07/2012	Sale of food products, cleaning supplies, and various cosmetics	Has more than 400 registered customers in its distribution network, with over 100 daily visitors
Nechrifinet.com	February 2010	Markets a range of diverse products such as books, IT equipment, kitchen and home appliances, children's toys, sports and entertainment items, cosmetics	Offers more than 500 products from various brands, guarantees delivery within 72 hours.
Qaydini	2009	Cosmetics, IT equipment, home appliances, women's and children's products	Operates seven days a week, 24 hours a day; payment by postal transfer, bank cheque, cash, or bank cards
Dar Eshihab	—	Books of all types	Provides an electronic catalogue offering precise and detailed information on available books
Souk El Djazair	—	Facilitates transactions between individuals wishing to purchase a particular good online at a specified price	Allows communication between seller and buyer to agree on payment method (cash, bank transfer, or postal account) and shipping method
Made in Algeria	—	Enables Algerian companies to showcase and promote their products (textiles, food products, mechanical parts, etc.)	Aims to help companies promote their products and access export markets

Source: Compiled by the researcher as follows:

- Bouras Boudalia (2021): The Reality of E-Commerce in Algeria, *Al-Bassair Journal for Legal and Economic Studies*, Vol. 01, No. 01, pp. 27–28
- Kouachi Hanan, Kaddi Abdelmajid (2022). Towards Diagnosing the Reality of E-Commerce in Algeria: E-Commerce as an Incentive for the Use of Bank Cards and Electronic Payment Services, *Jadid Al-Iqtisad Journal*, Vol. 13, No. 01, pp. 562–563

III. Factors Underpinning the Development of E-Commerce and Electronic Payment in Algeria

To further develop e-commerce in Algeria and bring it to levels comparable to those seen at the Arab and global scales, it is essential to continue efforts aimed at developing electronic payment methods, thereby facilitating the spread and advancement of e-commerce. This may be achieved through the following measures:

- **Implementing the Principles of the E-Government and Expanding Its Scope:**
 - This involves broadening the use of technological tools in most public administrations while promoting a culture of transition from a traditional paper-based system to one based on electronic transactions.
- **Encouraging the establishment of virtual stores:**
 - By exploiting available electronic payment and transfer methods and working simultaneously to develop these tools, e-commerce concepts can be instigated in the minds of economic actors.
- **Continuing efforts to develop the infrastructure necessary for the spread of e-commerce:**
 - This includes expanding the telecommunications network through the digital construction of data, increasing the use and speed of the internet and striving to make it accessible throughout the country. It also necessitates the availability of electronic payment cards and other tools that facilitate the conclusion and execution of transactions electronically.
- **Providing a regulatory and administrative system for payment operations:**
 - Such a system is among the most important pillars supporting the spread of e-commerce. It facilitates and secures electronic transactions while safeguarding the confidentiality of dealings and the rights and obligations of all parties involved.
- **Ensuring Adequate Information Security:**
 - There must be sufficient trust and confidence among individuals in dealing with electronic platforms. This protection eliminates concerns regarding cyberattacks, especially when credit cards are used to settle transactions.
- **Establishing a Commercial Consortium on the Electronic Network:**
 - This would enable small enterprises, which cannot bear the costs of creating their e-commerce websites, to display and sell their products via such a consortium.
- **Preparing the Necessary Human Resources**
 - This involves training and developing specialists and users to master the management of electronic payment methods and facilitate their use.

Conclusions

On the basis of the discussions presented in this research paper entitled “E-Commerce in Algeria: A Comparison between Reality and Aspirations,” it is evident that e-commerce differs in its regulations and norms from traditional commerce, which has endowed it with features and advantages not present in conventional trade. Moreover, electronic payment methods, through the benefits they offer, contribute to the development and increased dissemination of e-commerce. Additionally, Algeria has made considerable efforts to provide the fundamental infrastructure necessary for the establishment of e-commerce, notably through the expansion of fixed and mobile telephone networks nationwide, achieving satisfactory results in terms of network coverage. The internet network has also undergone significant expansion, with more than 50 million subscribers distributed between fixed and mobile internet services. Furthermore, the Algerian authorities have exerted considerable efforts to develop electronic payment and withdrawal methods and systems at the national level, resulting in a notable increase in the number of ATMs and electronic payment terminals during the period of 2016–2023, which, in turn, has led to a rise in the volume of transactions settled electronically over the same period.

Testing the Hypotheses:

- With respect to the first hypothesis, which states that e-commerce encompasses all transactions conducted via electronic means and requires the existence of an advanced and secure electronic payment system, this hypothesis is deemed correct. The broad concept of e-commerce refers to all transactions carried out electronically, regardless of whether payments are made electronically or by traditional means.
- For the second hypothesis, which posits that Algeria has made efforts to develop electronic payment methods and provide the infrastructure necessary for the adoption of e-commerce, this cannot be considered absolutely correct. The efforts made in providing basic infrastructure, particularly the legislative framework and communication means (telephony, internet), as well as in developing electronic payment methods and

systems, have not significantly contributed to the development of e-commerce, given Algeria's low international rankings.

- Regarding the third hypothesis, which states that e-commerce in Algeria is experiencing increasing proliferation as a result of the legislative and infrastructural environment and electronic payment systems that have been provided, this hypothesis is valid. E-commerce transactions in Algeria have experienced noticeable growth due to the advancement of the basic infrastructure underpinning e-commerce, including the availability of telephone and internet networks, as well as the increase in and development of electronic payment and withdrawal methods, which contributed to an increase in transactions from 2016–2023.

- The fourth hypothesis, which posits that the development of e-commerce requires further efforts in the field of electronic payment methods to facilitate the expansion of e-commerce, is considered correct. It is essential to increase the use of electronic payment methods further and work towards establishing a culture of electronic transactions within society to contribute to the development and broader expansion of e-commerce.

Study Findings:

Several findings have been reached through this research, the most significant of which are as follows:

- Electronic payment methods contribute to the growth and expansion of e-commerce by enabling rapid completion of transactions and offering features not available in traditional payment methods.

- The fixed and mobile telephone networks experienced significant expansion from 2016–2023; however, the fixed-line penetration rate remains low, whereas the mobile penetration rate is exceptionally high.

- Internet usage in Algeria exceeds 50 million subscribers, indicating that many individuals maintain more than one subscription.

- To establish electronic transactions in the field of payment methods, the Electronic Payment Company (SATIM) endeavors to develop the basic infrastructure for using these tools and to provide security systems for electronic payment instruments.

- Electronic payment transactions have increased markedly over the period 2016–2023, rising from 7,366 transactions in 2016 to 8,072,075 in 2023. Nevertheless, transactions related to the sale of goods remain limited, with zero (0) transactions recorded in 2016, increasing to 31,238 transactions in 2023.

- Algeria experienced growth in the number of ATMs and electronic payment terminals from 2016–2023 as a result of state policies aimed at promoting electronic payment tools.

- The significant increases in electronic withdrawal and payment transactions, and consequently the increase in the number of transactions, are due primarily to the integration of Algérie Poste into the Electronic Payment Company, which has allowed the Gold Card to offer numerous withdrawal and payment options and related functionalities.

Despite the achievements in establishing the fundamental infrastructure for e-commerce and the expanded use of electronic payment methods for concluding transactions, internet bandwidth remains weak. Accordingly, authorities should address this issue. It is also necessary to promote the use of electronic transactions through bank cards and to work towards enforcing this through legislation that supports the growth and development of e-commerce.

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