

**RESEARCH ARTICLE**

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**Electronic Payment as a Strategic Approach to Enhancing Financial Stability amid the Repercussions of the COVID-19 Pandemic**

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**Abstract:**

This study aims to highlight the role of electronic payment in enhancing the financial stability of Algerian economic institutions during the COVID-19 pandemic, by analyzing the extent to which these institutions relied on electronic payment methods as a strategic option to mitigate the severity of financial distress resulting from health restrictions and the decline in economic activity. The study adopted the descriptive-analytical approach, based on theoretical literature and previous studies, while tracking the development of the electronic payment system in Algeria during the pandemic period. The results showed that the COVID-19 pandemic constituted a catalyst for accelerating the adoption of electronic payment in Algeria, despite the limited availability of its means and their weak development compared to international standards. Nevertheless, electronic payment contributed to supporting the continuity of economic institutions' activities by facilitating the marketing of products and services and improving the remote collection of financial

dues, which helped mitigate the effects of financial distress. The study concludes with the necessity of developing the infrastructure and regulatory framework of electronic payment systems in a way that enhances their effectiveness and sustainability in the future.

**Keywords:** Electronic payment, financial stability, economic institutions, COVID-19, Algeria.

**Introduction:**

The global economy has witnessed profound structural transformations in recent years, represented by the gradual transition from traditional economic models to the digital economy, driven by the rapid development of financial technology (FinTech) and the expansion of the use of electronic payment systems. These systems have become among the fundamental indicators for measuring the efficiency of economic systems and their level of development, due to their pivotal role in improving the efficiency of financial transactions, enhancing financial inclusion,

and supporting the continuity of economic activities.

In this context, Algeria found itself required to keep pace with these transformations by modernizing its financial and banking infrastructure and encouraging the adoption of electronic payment methods and mechanisms in various daily financial and commercial transactions. However, the pace of this transformation remained relatively limited until the emergence of the COVID-19 pandemic, which imposed strict health restrictions and led to widespread economic disruptions that were directly reflected in the financial situation of national economic institutions, many of which faced cases of financial distress and significant losses as a result of declining demand and the disruption of traditional distribution channels.

In the face of these unprecedented challenges, Algerian economic institutions turned to adopting electronic payment systems and intensifying their use as a strategic option that allows the continuity of economic activity, expands access to customers without temporal or spatial constraints, and contributes to facilitating financial and commercial transactions while reducing risks associated with cash dealings. Accordingly, electronic payment emerged as one of the digital solutions capable of mitigating the severity of financial distress and supporting the economic recovery of institutions during the pandemic

period, in addition to its role in enhancing financial inclusion.

Based on the foregoing, the research problem revolves around the following question: To what extent did the adoption of electronic payment systems contribute to supporting the financial recovery of Algerian economic institutions and mitigating the severity of financial distress they faced during the COVID-19 pandemic?

#### **Research Questions:**

This research seeks to answer a set of main questions, as follows:

1. What is the level of adoption of electronic payment methods in Algeria, and what are the main characteristics of their actual use?
2. What are the main factors that contributed to accelerating the activation of electronic payment in Algeria during the COVID-19 pandemic period?
3. To what extent did electronic payment contribute to supporting the recovery of Algerian economic institutions from the financial distress crisis during the spread of the COVID-19 pandemic?

#### **Research Hypotheses:**

Based on the previous questions, the research proceeds from the following hypotheses as initial answers subject to testing and analysis:

1. Reliance on traditional payment methods remains predominant in Algeria due to the limited level of

awareness and financial culture among individuals, in addition to constraints related to infrastructure and technical capabilities, which makes it difficult to completely dispense with traditional payment methods in the short term.

2. The precautionary measures imposed by the Algerian public authorities to confront the COVID-19 pandemic, such as lockdowns and restrictions on movement, contributed to accelerating the shift of individuals and institutions toward using electronic payment methods to meet their daily needs.
3. The reliance of Algerian economic institutions on providing their services through digital platforms, supported by electronic payment options, contributed to improving the collection of financial dues and increasing turnover during the pandemic period, which was positively reflected in their ability to overcome the financial distress crisis.

### **Methodology of the Study:**

This study relied on the descriptive-analytical approach, with the aim of describing and analyzing the reality of the electronic payment system in Algeria and its developments during the COVID-19 pandemic period. The statistical approach was also employed to study the repercussions of the health crisis on the financial situation of national economic institutions and to analyze the effectiveness of

electronic payment in supporting their recovery from the financial distress crisis.

### **Objectives of the Study:**

This research aims to achieve a set of objectives, the most prominent of which are:

- Identifying the most important modern technologies adopted in the field of electronic payment in Algeria.
- Analyzing the extent to which individuals and institutions have turned toward using electronic payment methods during the COVID-19 pandemic period.
- Highlighting the role played by electronic payment systems in helping distressed national economic institutions overcome the financial distress crisis and achieve a degree of financial stability.

## **2. Theoretical Aspect of the Study:**

### **2.1. Electronic Payment Systems in Algeria: A Conceptual and Regulatory Approach**

The rapid development in information and communication technology has produced new patterns in the settlement of financial transactions, among the most prominent of which are electronic payment systems, which have become one of the basic components of the contemporary digital economy.

#### **2.1.1. Concept of Electronic Payment:**

Electronic payment is defined as the electronic means used as a substitute for traditional payment methods, representing a monetary value loaded on a card with digital memory or

on the main memory of the institution carrying out the electronic exchange process (Ben Amiyou, 2005, p. 14).

Electronic payment refers to making payment in exchange for purchasing a good or service via the Internet, or transferring funds between banks and customers, or settling obligations and monetary dues in a legal digital manner characterized by security, confidentiality, and speed in settling transactions, using several electronic mechanisms such as electronic money, electronic checks, and electronic payment cards (Hawalf, 2015, p. 21).

### **2.1.2. Electronic Payment in Algerian Legislation:**

Initially, the Algerian legislator addressed payment instruments in general, including traditional payment methods, through the Law on Money and Credit No. 03/11, as amended and supplemented, without specifically addressing modern electronic payment methods in detail. Article 69 of the aforementioned law states: "Payment instruments are considered all tools that enable any person to transfer funds regardless of the medium or technical method used" (Law No. 11/03, 2003).

Subsequently, the Algerian legislator established the legal framework for electronic commerce and regulated dealings therein through the issuance of Law No. 18/05 relating to electronic commerce, which includes the general principles of electronic commerce, precisely defines terms, and explains the basic

concepts of transactions through electronic websites. In particular, Article 06 defines electronic commerce as "the activity by which an electronic supplier proposes or ensures the provision of goods or services remotely to an electronic consumer through electronic communications," and defines the electronic payment instrument as "any payment instrument authorized in accordance with the applicable legislation that enables its holder to make payment nearby or remotely through an electronic system."

The Algerian legislator emphasized the obligation to pay using authorized electronic payment instruments through dedicated platforms connected to electronic payment terminals via the public telecommunications operator's network, managed and operated by banks accredited by the Bank of Algeria and Algeria Post, with the aim of providing maximum protection (Law No. 05/18, 2018).

### **2.1.3 Management of Electronic Payment in Algeria:**

In light of global technological development, especially in the field of electronic payment, which is considered an indicator of economic development and efficiency, Algeria has given great importance to this field to enhance financial inclusion and advance the national economy by urgently modernizing banks' electronic financial services. In this context, Algeria launched the "e-Algeria (2008–2013)" project as a first step toward adopting modern technology, through the establishment of the

electronic clearing system, digitization of government sectors, and transition toward effective e-administration (Amara & Abbas, 2022, p. 62). To activate this transformation, it was necessary to establish a specialized body in information technologies to support the bank modernization program and enhance the secure use of electronic payment methods, through issuing bank cards of various types and providing automated teller machines and electronic payment terminals in commercial outlets. Accordingly, the Company for Automated Cash and Interbank Relations (SATIM) was established on March 25, 1995, at the initiative of the Association of Banks and Financial Institutions, with the participation of seven Algerian banks and the CNMA insurance institution, to become the sole entity managing electronic payment by local and international cards between banks in Algeria (Bessiri, 2019, pp. 62–63).

In view of the effective role played by SATIM in supporting the establishment and development of electronic payment products, the following were achieved:

- The installation of the first automated teller machine in 1997.
- The registration of the first payment operation using an electronic payment terminal in 2005 (Soltani, 2022, pp. 216–217).
- The connection of more than 1,350 automated teller machines.

- The connection of approximately 40,000 electronic payment terminals (TPE) to its servers, which is in fact a very low number compared to the number of active traders registered with the National Center of the Commercial Register, estimated at about 2,224,713 traders, representing a rate of 1.8% (Le portail du CNRC, 2022).
- More than 184 licensed e-commerce websites authorized by GIE Monétique on its platform.
- The distribution of more than 2,162,100 CIB bank cards (SATIM, 2022).

#### **2.1.4. Electronic Payment Products Available in Algeria:**

Algeria has witnessed noticeable progress in recent years with regard to financial technology and the spread of a culture of using modern electronic payment methods. However, the development of these methods has remained limited and has not reached the level of global developments. Accordingly, the electronic payment tools and mechanisms available in Algeria can be limited to the following:

- **CIB Interbank Card:** A magnetic plastic card issued by banks to their customers, containing the cardholder's data and validity period, and used as a substitute for cash to pay for goods and services through electronic devices or

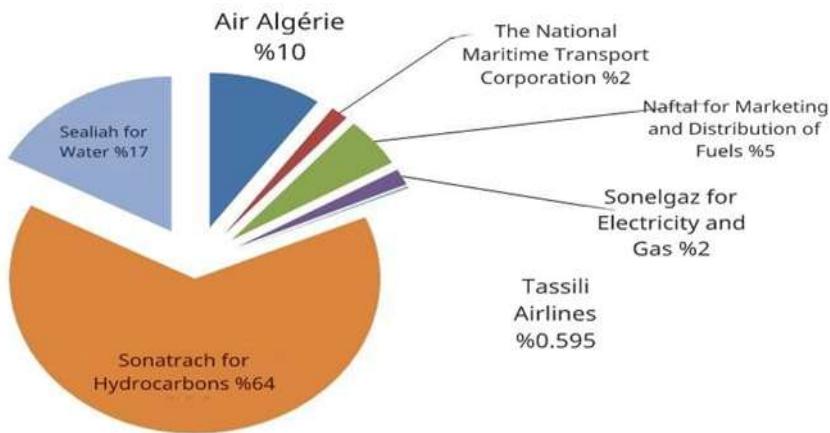
- via electronic websites (Mati, 2022, p. 13).
- **Payment via Electronic Payment Terminals (TPE):** A digital electronic device used to carry out payment operations using payment cards, whereby the amount is directly debited from the buyer's account and transferred to the merchant's account after deducting bank commissions. This device is available in shops and commercial spaces (SATIM, 2022).
- **Bank Automated Teller Machines and Algeria Post Automated Dispensers:** Electronic devices that allow the automatic execution of several financial operations, in addition to monitoring bank or postal accounts and checking balances at any time throughout the week across the entire national territory (Algeria Post, 2022).
- **Remote Payment via the Internet:** Internet payment enables individuals to purchase goods and services or pay bills through websites using electronic payment cards (Mihoub, 2005, p. 162).

**Third: The Role of Electronic Payment in the Recovery of Algerian Economic Institutions from the Financial Distress Crisis in Light of the COVID-19 Crisis:**

**1. Financial Distress of National Companies during the Coronavirus Pandemic:**  
The rapid spread of the COVID-19 pandemic

in Algeria since the first recorded case on February 25, 2020, led the government to take urgent precautionary measures which, despite their necessity at the time, resulted in significant negative effects manifested in serious damage to the national economy, considerable financial losses, and the distress of many private sector institutions, especially small and start-up enterprises. In addition, national companies faced a financial crisis due to lockdowns, restrictions on the movement of people, and the suspension of transportation (Executive Decree No. 20-70, 2020). Consequently, a significant decline in their activity was recorded, accompanied by an increase in their debts resulting from citizens' reluctance to settle their debts. Overall, they incurred financial losses exceeding 879 million euros during the first half of 2020 (France 24, 2020). The energy sector bore the largest share of financial losses, recording losses of 188 million euros as a result of declining oil prices and the collapse of hydrocarbon prices, followed by the transport sector, whose losses exceeded 135 million euros during the same period (Euronews, 2020). The following figure illustrates the volume of losses recorded by the most important national economic institutions affected by the COVID-19 crisis:

**Figure 1:** Financial losses recorded by the most important national economic institutions affected by the COVID-19 crisis during the first half of 2020.



**Source:** Prepared by the researcher, based on the following electronic websites:

- **Algerian Press Agency (APS):** [aps.dz: aps.dz/ar/algeria/89784-2020-07-18-16-09-41](http://aps.dz/ar/algeria/89784-2020-07-18-16-09-41), accessed on 06/06/2022 at 19:30.
- **Algerian Radio:** [radioalgerie.dz/news/ar/article/20201016/197413.html](http://radioalgerie.dz/news/ar/article/20201016/197413.html), accessed on 06/06/2022 at 22:15.

Sonelgaz Group recorded a decrease in its turnover amounting to 6.5 billion Algerian dinars (Zemmouch, S., 2020). This was due to the preventive and precautionary measures imposed by the government on individuals and institutions, such as reducing the workforce to 50%, restricting movement, and imposing lockdowns. These measures led to partial paralysis of institutions and forced them to operate at a minimum level of activity, which caused a decline in electricity consumption by 10% during the first months of the pandemic spread (Atrous, 2021, p. 395). In addition, the debts of customers of the Algerian Water Company “SEAAL” amounted to approximately 66 billion dinars (Al-Mehwar Daily Newspaper, 2022), as a result of citizens’ reluctance to settle their dues for water, electricity, and gas consumption during that

difficult period, which led to the two institutions “Sonelgaz for Electricity and Gas Distribution” and “SEAAL for Water” falling into financial distress.

On the other hand, Air Algérie incurred financial losses estimated at 38 billion DZD during the first half of 2020 (Algerian Radio, 2020). During the same period, losses of the National Maritime Transport Company reached about 6 billion DZD, while the crisis caused losses to Naftal estimated at 20 billion DZD (Algerian Press Agency, 2020). Tassili Airlines also recorded a loss of 595 million DZD, and finally, losses of Sonatrach in hydrocarbons amounted to approximately 247 billion DZD (Bougra, 2020).

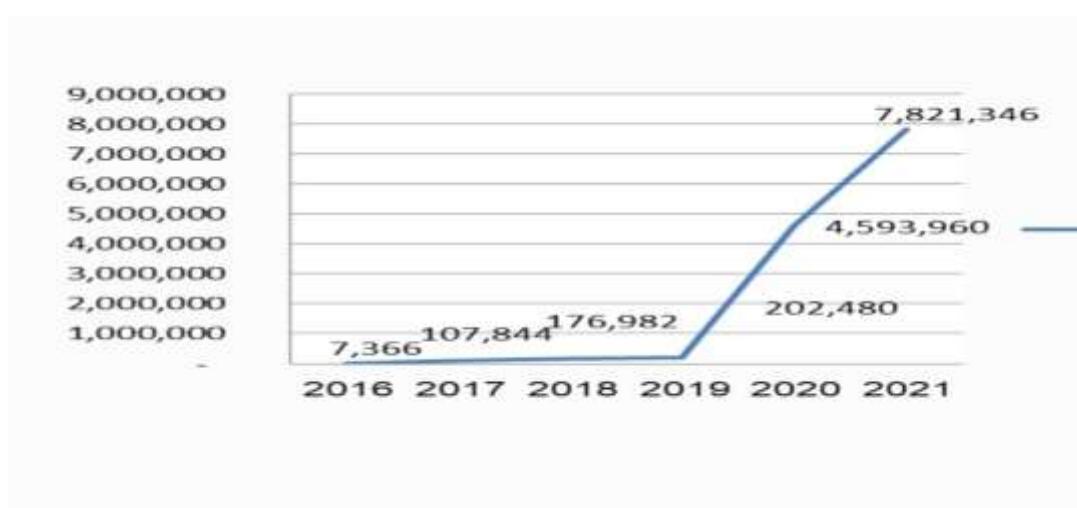
## 2. Electronic Payment for Goods and Services as a Mechanism for Recovery from

## **the Financial Distress Crisis during the COVID-19 Pandemic:**

The aggravation of the effects of the COVID-19 pandemic and lockdown measures led to the emergence of an urgent need for individuals and national institutions to adopt electronic payment methods. Individuals resorted to them to facilitate the purchase of goods and services without movement or physical contact, in order to avoid infection with the virus. National institutions such as SEAAL and Sonelgaz also considered electronic payment a solution to

overcome the financial distress crisis, and therefore adopted information and communication technology policies by creating websites and smart applications that allow the provision of services and the completion of electronic payment operations with ease (Mati, 2022, p. 19). Through the figure below, we can observe the development of electronic payment usage in Algeria before and after the COVID-19 pandemic for the period (January 2016 – December 2021).

**Figure 2: Development of electronic payment usage in Algeria before and after the emergence of the COVID-19 pandemic for the period January 2016 – December 2021.**



**Source:** Prepared by the researcher, based on the website:

<https://giemonetique.dz/ar/qui-sommes-nous/activite-paiement-sur-internet>, accessed on

10/06/2022 at 10:00.

Electronic payment has witnessed a qualitative leap since 2020, as the number of transactions increased from about 4,593,960 transactions in 2020 to 7,821,346 transactions in 2021, achieving growth of approximately 170%.

This increase is attributed to the repercussions of the health crisis and lockdown measures, which strengthened the orientation toward digitization. Economic institutions considered electronic payment an appropriate solution for

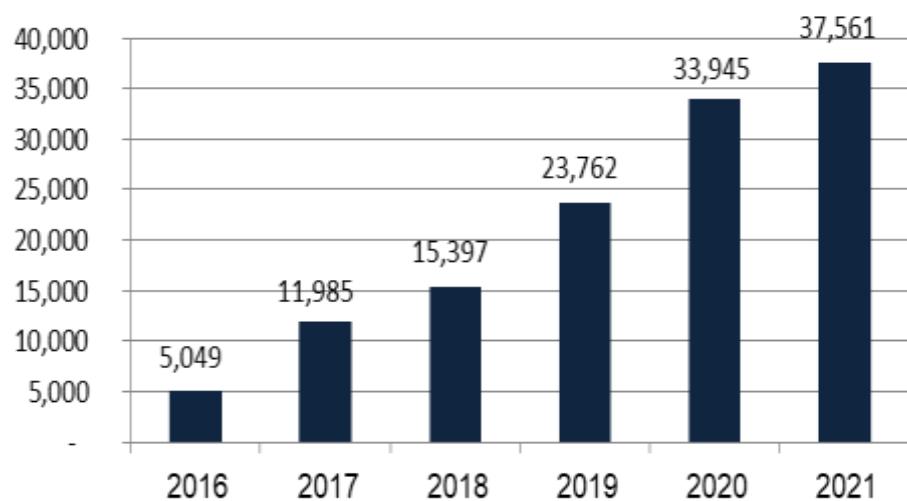
recovery from financial distress, and therefore worked on developing modern digital mechanisms and encouraging individuals to use them, which contributed to the revival of electronic transactions.

Algeria Post is considered one of the most prominent initiatives that contributed to promoting financial technology and enhancing financial inclusion during the COVID-19 pandemic. It played a pivotal role in generalizing electronic payment methods and spreading the culture of digital transactions, especially among citizens who do not deal with banks, through the issuance of the Gold Card, which provided multiple services such as withdrawal and electronic payment, balance inquiry, and cash withdrawal through automated teller machines and post offices

(Algeria Post, 2022, p. 4). Algeria Post carried out the following:

- Merchants and economic operators were encouraged to adopt electronic payment terminals (TPE) by granting them free of charge for two months, in order to enable holders of bank cards and the Gold Card to pay for purchases and services and recharge mobile credit, with the aim of limiting the risks of virus transmission through paper money and reducing travel to post offices (Mati, 2022, p. 65). The figure below shows the total number of electronic payment transactions through electronic payment terminals in service for the period 2016–2021

**Figure 3:** Total number of electronic payment terminals in service for the period 2016–2021.

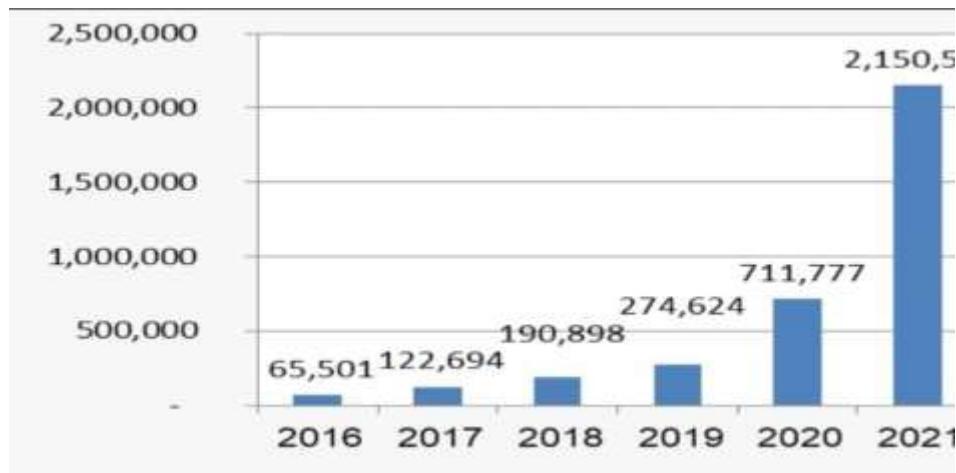


**Source:** Prepared by the researcher, based on the website

<https://giemonetique.dz/ar/activite-paiement-sur-tpe/>, accessed on 09/06/2022 at 18:00.

The following figure shows the development of electronic payment transactions through electronic payment terminals for the same period 2016–2021:

**Figure 4:** Development of electronic payment transactions through electronic payment terminals for the period 2016–2021.



**Source:** Prepared by the researcher, based on the website <https://giemonetique.dz/ar/activite-paiement-sur-tpe/>, accessed on 09/06/2022 at 18:00.

Electronic payment transactions through electronic payment terminals have witnessed a gradual increase since 2016, followed by a significant jump in 2020 coinciding with the COVID-19 pandemic, with the number of transactions rising noticeably compared to 2019. This strong growth continued in 2021, exceeding two million transactions, despite the limited number of electronic payment terminals at the national level, reflecting the growing tendency of individuals to adopt modern payment methods and technologies. (GIE Monétique, 2022).

- **The "Baridi Web" online portal:** A website dedicated to Algeria Post customers holding the Gold Card, allowing them to benefit from multiple financial services online, such as

managing postal current accounts and the Gold Card, transferring money, paying electricity and water bills, renewing internet subscriptions, purchasing travel tickets, and topping up mobile phone credit, through the website: <https://baridiweb.poste.dz> (Algérie Poste, 2022).

- **The mobile application "Baridi Mob":** A self-payment service launched by Algeria Post through a free application for smartphones and tablets on Google Play and Apple Store. It provides users access to a wide range of financial and cash services, including the new payment service "Baridi Pay," based on QR code

scanning technology. (Algérie Poste, 2022).

In this context, Algerian banks have sought to keep pace with global developments in financial technology by converting traditional payment methods into electronic alternatives such as bank cards and remote banking services, thereby promoting financial inclusion and encouraging account holders to use electronic payments, benefiting national institutions like SIAL, Sonelgaz, and Algérie Telecom. For example, the National Bank of Algeria (BNA) launched the mobile application **WIMPAY**, which allows payment for purchases, bill settlement, checking balances, and transferring money quickly, safely, and at any time throughout the week. (National Bank of Algeria, 2022).

### 3. Development of online electronic payment transactions in Algeria during the COVID-19 pandemic:

Thanks to the efforts of Algeria Post and Algerian banks in modernizing their devices and financial services, individuals can easily perform electronic payment transactions, such as paying bills, topping up mobile phone credit, and renewing internet subscriptions. This helped national institutions affected by the COVID-19 crisis overcome the financial difficulties. The most prominent of these institutions include: Sonelgaz for electricity and gas, SIAL for water, Algérie Telecom, and Air Algérie.

The following table shows the development of electronic payment transactions before and after the pandemic:

**Table 1: Development of electronic payment transactions in Algeria from 2016 to May 2022**

Academic Year	Communications / Phone	Transport	Insurance	Water & Electricity Bills	Administrative / Other Services	Goods Sales	Annual Total
2016	6,536	388	51	391	0	0	7,366
2017	87,286	5,677	2,467	12,414	0	0	107,844
2018	138,495	871	6,439	29,722	1,455	0	176,982
2019	141,552	6,292	8,342	38,806	7,488	0	202,480
2020	4,210,284	11,350	4,845	85,676	281,570	235	4,593,960
2021	6,993,135	72,164	8,372	120,841	613,366	13,468	7,821,346
May 2022	2,967,531	67,126	7,345	99,360	213,902	9,014	3,364,278
<b>Total</b>	<b>14,544,819</b>	<b>163,868</b>	<b>37,861</b>	<b>387,210</b>	<b>1,117,781</b>	<b>22,717</b>	<b>16,274,256</b>

**Source:** Based on the website <https://giemonetique.dz/ar/qui-sommes-nous/activite-paiement-sur-internet>, accessed on 10/06/2022 at 10:00.

From the table above, the following observations can be made:

- Online electronic payment transactions in Algeria are limited to a few sectors, mainly communications, transport, insurance, water, electricity, gas, and some e-commerce services for products.
- Electronic payments did not achieve wide adoption in Algeria during 2016–2019, with only 7,366 transactions in 2016, gradually increasing over the following years, reaching 202,480 transactions in 2019, i.e., before the COVID-19 pandemic.
- Electronic payment transactions experienced a significant jump in 2020, exceeding 4.5 million transactions due to the COVID-19 pandemic and preventive measures, which encouraged individuals to adopt electronic payments to meet their needs. With banks and economic institutions providing services through online portals and mobile applications, the number of transactions rose to over 7.5 million in 2021, representing a 170.25% increase.
- The communications sector recorded the highest number of online electronic payment transactions by May 2022, totaling around 14,544,819 transactions, including bill payments, credit top-ups, internet subscription

renewals, and electricity and water bill payments. This helped the service-providing economic institutions recover from financial distress during the first half of 2020. However, when comparing this number to the total mobile network subscribers (47,671,484) and fixed and mobile internet subscribers (46,973,896), the adoption rate of electronic payments remains relatively limited. (Postal and Electronic Communications Regulatory Authority, 2022).

- The goods sales sector recorded the lowest number of online electronic payment transactions, totaling only 22,717 transactions during 2016–May 2022, due to individuals' preference for shopping through social media platforms, which flourished during the lockdown, especially with store closures and movement restrictions, prompting merchants to adopt network marketing with home delivery and cash-on-delivery payments.

### **Conclusion:**

After examining electronic payments in Algeria and studying their contribution to helping national institutions overcome financial distress during the COVID-19 crisis, the following conclusions were reached:

- The Algerian legislator attempted to regulate e-commerce and electronic payment methods through Law 18/05

related to e-commerce. However, this law is insufficient, as it does not provide clear provisions to define and regulate each electronic payment method individually, nor does it offer maximum protection for users of these methods.

- Electronic payments in Algeria suffer from low adoption due to the dominance of traditional payment methods, which is attributed to low financial awareness among citizens and limited state capabilities to develop financial technology, hindering the growth and generalization of electronic payments.
- The emergence and spread of COVID-19 activated electronic payments in Algeria, as preventive measures and fear of infection prompted customers to adopt electronic payments to meet their needs, leading to a significant increase in the number of transactions, particularly online payments, which experienced a qualitative leap during this period.
- Despite the activation of electronic payments and increased customer adoption during COVID-19, this type of payment remains weak in terms of transaction volume and development of used methods, and does not reach global developments in the field, such as contactless payments and digital

currencies, which remain largely inaccessible to the average Algerian citizen.

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