

THE REALITY OF ELECTRONIC PAYMENT METHODS IN COMMERCIAL BANKS IN ALGERIA, A CASE STUDY CNEP BANK

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Abstract:

The study investigates the efficacy of electronic payment methods within commercial banks in Algeria, focusing on CNEP bank as a case study. With a sample size of 89 customers, our goal is to evaluate the impact of electronic payment methods on enhancing banking operations. Utilizing the SPSS statistical program, we analyze the data and test hypotheses to gain insights into the effectiveness of these methods.

The study found significant differences in the views on that There is an effect of ATM, online banking ,mobile banking transactions on the performance of commercial bank for the whole study sample.

key words: *E-payment; Automated Teller Machine; Contactless payments .*

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Introduction:

In the new digital world and with the modernization of artificial intelligence applications, it has become necessary for companies to implement fast and easy-to-use electronic payment systems to provide customers with a new experience. These systems support a variety of payment options, giving them the flexibility to choose their preferred payment method. As the latest innovation in financial technology (FINTECH), electronic payment systems work on electronic settlement of financial transactions at any time and place. Financial institutions are developing and providing these systems with a strong focus on the security and confidentiality of transactions, with full compliance with legal requirements and e-commerce rules, which has made electronic payment systems harmoniously and strongly integrated with information and communications technology, improving all electronic buying and selling processes.

With the onset of the COVID-19 pandemic, Algeria, like other countries around the world, has witnessed significant and continuous progress in electronic payment methods, and their widespread adoption and use has become an absolute necessity. These methods facilitate digital financial transfers for the purchase of goods and services, and leverage technology to transfer data and complete financial transactions securely. Examples include credit cards, online bank transfers, digital wallets such as Amazon Pay, mobile payment solutions such as Apple Pay, and cryptocurrencies. These innovations enhance and simplify e-commerce operations.

CNEP Bank is considered one of the public commercial banks in Algeria that has kept pace with technological development in the field of electronic payment, especially after the Corona pandemic, as the bank has updated electronic payment methods by increasing the number of automated teller machines, issuing credit cards, and allocating a digital platform to facilitate banking operations, or what is known as E Banking service.

1.Research problem:

What is the reality of the Electronic Payment Methods in Algeria?.

2. Research hypotheses:

The following hypotheses was put to test in order to answer the study's problem and subsidiary questions:

H₀₁: There is an effect of ATM transactions on the performance of commercial banks due to the gender variable.

H₀₂: There is an impact of online banking transactions on the performance of commercial banks in Algeria due to the age variable.

H₀₃: There is an impact of mobile banking transactions on the performance of commercial banks in Algeria due to the function variable.

SECTION I: THEORETICAL FRAMEWORK

First Requirement: E payment

"Electronic payment refers to the rapid and automated transfer of funds from a buyer to a seller through financial institutions, aiming to minimize costs"(2019 ، عباسية).

An electronic payment (e-payment) is a financial transaction carried out digitally, allowing money to be transferred via the internet or other digital means. This contemporary payment approach includes various technologies like credit and debit cards, mobile payment applications, digital wallets, online banking, and cryptocurrencies, providing a secure, quick, and convenient substitute for conventional cash or check-based transactions.

Second Requirement: E payment methods

An electronic payment method facilitates financial transactions or payments for goods and services using digital means, eliminating the need for cheques or cash. Also known as an electronic payment system or online payment system, this approach streamlines the process of transferring funds electronically.(Subas & Gopal Ravi, 2019). The electronic payment system consists of a set of linked elements, tools, and means of payment that facilitate the exchange of services and goods via websites (Mahmoud & Mohammad , 2021, p. 1145), We can divide the electronic payment system as follows:

Paragraph1:Credit Cards

A credit card is a financial instrument provided by a bank, functioning as a form of loan with a revolving credit line accessible through your card account. This loan has a maximum limit, referred to as the credit limit, and, like traditional loans, it incurs interest. Credit cards are the most widely used payment method for transactions (Meredith & Liza , 2024). Some key advantages of credit cards include:

- They offer easy and quick functionality for making online transactions from anywhere.
- They are straightforward to obtain and use, as customers do not need to purchase additional software or hardware.
- The authentication process for cardholders is simple, requiring only the name, credit card number, and expiry date.

Paragraph 2:Debit Card

A debit card is a payment card that pulls funds straight from your checking account. Known also as "check cards" or "bank cards," these cards can be used to buy goods, services, or withdraw cash from ATMs, helping to reduce the need for carrying cash, though they might incur fees (Fontinelle, 2023).

Paragraph3: E-wallets

"The key difference between a debit card and a credit card lies in the immediate deduction of money from the user's bank account during a transaction, as debit cards are directly connected to the account ".(Fontinelle, 2023).

Paragraph3: E-wallets

E-wallets are software applications that securely store data needed for the wallet owner to make payments online or at retail locations using specialized devices. This is likely the most comprehensive definition of e-wallets, or electronic wallets, available (Dutta, 2022).

. An e-wallet functions like a prepaid account, allowing users to store multiple debit cards, credit cards, and other payment methods securely without re-entering credentials for each transaction. The adoption of electronic wallets is growing daily.

Paragraph 4: Smart Card

A smart card is a payment card that contains an embedded microprocessor or memory chip to securely store and process data. These cards serve various purposes, including financial transactions, identification, authentication, and data storage. The chip allows the smart card to perform advanced functions like encryption and secure data exchange, providing greater security compared to traditional magnetic stripe cards. Smart cards are commonly used in sectors such as banking, healthcare, telecommunications, and transportation. (<https://razorpay.com/>, 2022).

Paragraph 5: Online banking

Online banking enables financial transactions over the Internet and is referred to as Internet banking or web banking. It allows customers to perform almost every functions available at a physical branch, including deposits, transfers, and bills payments. Almost every banking institution offers online banking which can be accessed through computer or software (Frankenfield, 2023). Customers can easily make purchases through their bank accounts. They need to provide their net banking ID and PIN to complete the transactions.

Paragraph 6: Mobile Payment

Mobile payment technology helps users to make purchases, and access various services. To use this technology, the user simply downloads the mobile payment application and connects it to their account. This allows them to add money to their digital wallet and make transactions on their account. When a user selects the application to make a payment on an e-commerce site, the application receives the payment request and must approve it before completing the transaction (Pihlajamäki).

Third Requirement: Electronic payment properties

1-Global Acceptance: Electronic payments stand out with their international status as they are recognized and accepted in all countries. They are used to solve the problems that users worldwide face in the digital field.

2-Using of Electronic Money: Payments are made with electronic money that represents their value, in a digital store or in a central system that manages the exchange process.

3-Remote Transaction Settlement: This system facilitates the transportation of electronic goods between different parties. Payments are processed over the Internet through electronic data exchange that enables wireless communication. Payment orders are given based on electronic data that enables direct communication between the parties. (طبيبي ، 2019).

Fourth Requirement : Contactless payments

Contactless smart chip technology is based on (Alliance, 2006):

1-A secure microcontroller.

2-Internal memory.

3-A small antenna embedded in the device that communicates with a reader through a contactless radio frequency (RF) interface.

This technology is utilized to enhance speed, convenience, and security across various applications. It is employed in fast and secure transactions for transit fare cards and in safeguarding personal information.

SECTION II: PRACTICAL FRAMEWORK

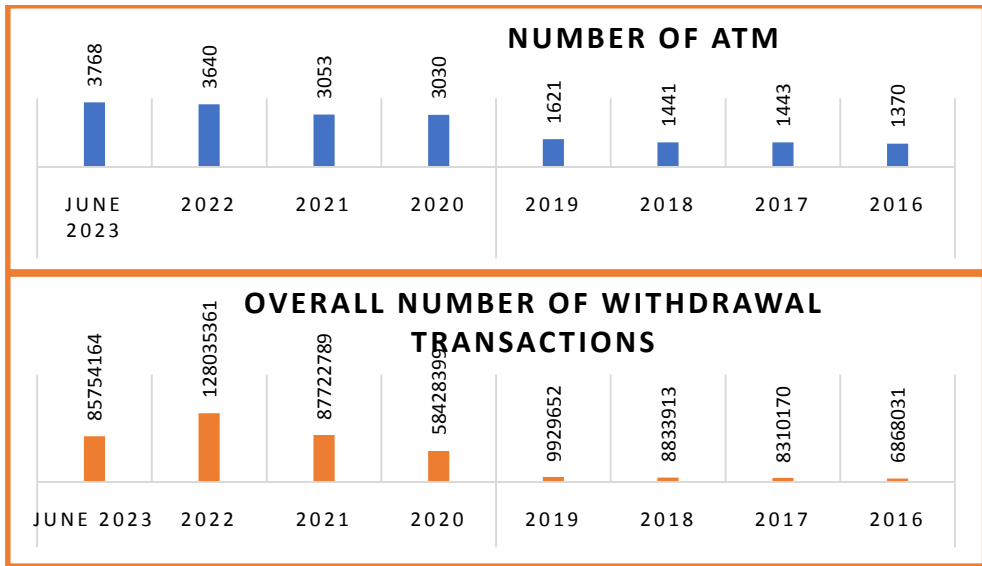
First Requirement: The reality of digital payments in Algeria

Modernization of e.payments systems increases access to finance and financial services while also promoting greater transparency and efficiency. So it is necessary to identify the reality by highlighting its infrastructure, as well as providing an overview of Algeria's electronic payment activity before and after Corona pandemic (<https://giemonetique.dz>, 2023).

Paragraph 1: Automated teller machine (ATM):

The following table shows the activities carried out with the (ATM) machines in Algeria before and after Corona.

Fig.1. Transactions using (ATM) in Algeria.



Source: Prepared by researchers

Through the fig1, and comparison between the two periods: the period before the corona pandemic and the period after the pandemic, we observe a significant development in the withdrawal activity in the automated cash machine, as it witnessed a qualitative leap from 1370 before corona to 3768 in the first six months of 2023, which explains that financial institutions in Algeria relied a lot on the provision and modernization of electronic payment methods, especially the development of automated exchange and its programs.

As for compared between the two periods, the period before the corona pandemic and the recovery period from the corona pandemic, we note a significant increase in withdrawals starting from 2020 until the first six months of 2023, and due to the increase in electronic transactions and ketonic trade to reduce the spread of the corona virus.

Paragraph 2 :The development of electronic payment operations according to sectors

The electronic payment system was launched in Algeria in October 2016. CIB or GOLD interbank card holders can pay bills and services via the Internet on approved websites, Electronic payment services have been provided through the municipalities to major billers such as Air Algérie, mobile and fixed line operators, electricity

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and gas distribution company, companies water distribution and insurance companies, and intends to circulate it in the future to all service customers , At the end of June 2023, the number of merchants participating in the online payment system reached 370, and this service enables holders of CIB cards as well as Algeria Post Gold cards to pay online in addition to a group of remote services.

The following table shows the development of the electronic payment system in Algeria from 2016 to June 2023.

Table 1.The development of the electronic payment system in Algeria from 2016 to 2023.

Period	BEFOR COVID19				AFTER COVID19			
Years	2016	2017	2018	2019	2020	2021	2022	2023
Telecom	6536	87286	138495	141552	4210284	6993153	7490626	657 957
Transport	388	5677	871	6292	11350	72164	195490	25345
Insurance	51	2467	6439	8342	4845	8372	23571	1263
Bills	391	12414	29722	38806	85676	120841	302273	49671
Admin/ service	0	0	1455	2 432	68395	155640	153957	1584
Other Service	0	0	0	5056	213175	457726	705 114	77 167
Sale of property	0	0	0	0	235	13468	24169	4 108
Sport and Leisure	0	0	0	0	0	0	152925	82 734

Number payment	7366	107844	176982	202480	4593960	7821346	9048125	899 829
Amount in dz	15 009 842,02	267 993 423,40	332 592 583,28	503 870 361,61	5 423 727 074,80	11 176 475 535,68	8 151 104 423,96	2 019 118 891,23

Source : Prepared by researchers

The increase in commercial and administrative transactions in all sectors between the period before Corona and the period after Corona and the increase of 379 web merchants involved in the electronic payment system, which pushes the contribution to the increase and modernization of the electronic system, and these numbers remain weak compared to Arab and foreign countries.

Second Requirement:Method and data

Paragraph1:Reability test

Structure	N of items	Crounbach's Alpha Coefficients
AXIS1	06	0.88
AXIS2	06	0.84
AXIS3	04	0.78
TOTAL	16	0.86

Table 2.Reability test

Source: Prepared by researchers based on the outputs of SPSS 25.

This study used SPSS 25.0 to analyze the data from 89 samples. Internal consistency tests were conducted based on the criteria of whether the coefficient of internal consistency was greater than 0.7 and whether the coefficient of internal consistency would increase after the deletion of a question item. The test results are described in

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Table1. Crounbach's Alpha test yielded 0.881 for axis1, 0.84 for axis2, and 0.78 for axis3, The Cronbach's α values of all variables are above 0.70 indicating that the variables have good internal consistency, This indicates that the variables have good composite reliability.

Paragraph 2 :Characteristics of a sample

The survey includes general information about the study sample, by counting the frequencies and percentages of the descriptive variables represented in: gender, age, educational level, and Function.

The table shows the general characteristics of the sample included in the study, and the results were as follows :

Table 3. General characteristics of the sample

Variable	Segments	Frequency	Percentage
Gender	Male	27	30.3
	Female	62	69.7
Age	From 18 to 28 years	27	30.3
	From 29 to 39 years	07	7.9
	From 40 to 50 years	26	29.2
	Over 50 years	29	32.6
Educational level	Primary	00	00
	Middle	4	4.5
	Secondary	38	42.7
	University	47	52.8
Function	Employee	58	65.2
	Student	8	9.00
	Business	7	7.9
	Unemployed	16	18.0
Total		89	100

Source: Prepared by researchers based on the outputs of SPSS 25.

Paragraph3:Test for normal distribution

Before performing any test on the data that was dumped in the spss program, we make sure that the data follows a normal distribution, in order to follow the method of tests (parametric and non-parametric), and the Kolmogorv-Smirnov test is performed at a

significant level of 5%. To conduct the tests, the following hypotheses were formulated :

- Null hypothesis : The data are normally distributed.
- Alternative hypothesis : The data are not normally distributed.

The following table shows the test results :

Table 4. Test for Normality

	Kolmogorv – Smirnov		
	Statistic	Dll	Sig
Axis1	0,389	89	0,000
Axis2	0,287	89	0,000
Axis3	0,319	89	0,000

Source: Prepared by researcher using the SPSS program.

We note from the previous table that the significance level in all tests is less than 0.05, and therefore we accept the hypothesis, that the data does not follow a normal distribution, thus nonparametric tests can be performed.

Paragraph4:Test hypothesis study

H₁ : There is an effect of ATM transactions on the performance of Cnep bank due to the gender variable.

To test these hypotheses, the Mann-Whitney test was used, which is usually used to compare two independent groups, whose data are in an arranged form, and it is also a non-parametric test for the variables (gender) in order to determine the significance of the differences for each variable.

Table 5. Test Mann –Whitney

(P.value)	Test Z	Mean rank	
		Female	Male
0,216	-1,236	39,91	47,22

Source: Prepared by researchers using the SPSS program.

The table shows that Z, whose value is estimated at -1,236 is not statistically significant at a significance level of 0.216, which is greater than 0.05. Rejecting the alternative hypothesis Accepting the null hypothesis that there are no statistically significant differences between the sample members regarding There is an effect of ATM

transactions on the performance of commercial banks due to the gender variable. This means that the results of the study are stable and not affected or differed as a result of the gender variable.

H₂ : There is an impact of online banking transactions on the performance of Cnep bank in Algeria due to the variable age.

To test this hypothesis, the Wallis-Kruskall test was used, which is usually used to compare independent groups whose data are monotonous, and it is also a non-parametric test for the variable (age) in order to determine the significance of the differences for each variable.

Table 6. Wallis–Kruskall test.

(p.value)	Test Khi -deux	Mean rank			
		Over 50 Years	From 40 to 50 Years	From 29 to 39 Years	From 18 to 28 Years
0.001	15,996	45,53	59,33	42,50	31,28

Source: Prepared by researchers using the SPSS program.

Is noted from the results of this test that the P.value is equal to 0.001 which is less than level of 5%. Thus, we accept the alternative hypothesis that there are statistically significant differences between sample individuals regarding there is an impact of online banking transactions on the performance of Cnep bank in Algeria due to the variable age.

That is, this means that the degree of approval in this field was among the sample members of the working age group and more mobile in practicing their profession in addition to their participation in political and associational work, because the majority of the sample are working and elderly executives who are interested in the results of the level of improvement and renewal of electronic payment methods within the institution.

H₃ : There is an impact of mobile banking transactions on the performance of Cnep bank in Algeria due to the fancement variable.

To test this hypothesis, the Wallis-Kruskall test was used, which is usually used to compare independent groups whose data are monotonous, and it is also a non-parametric test for the variables (fancement) in order to determine the significance of the differences for each variable.

Table 7. Wallis–Kruskall test.

(p.value)	Test Khi - deux	Mean rank			
		Employee	Student	Business	Unemployed
0,756	1,189	42,72	45,57	37,19	46,64

Source: Prepared by researchers using the SPSS program.

It is noted from the results of this test that the P.value is equal to 0.756, which is greater than the 5% level of significance. Therefore, we reject the alternative hypothesis and accept the null hypothesis, saying that there are no statistically significant differences between the sample members regarding There is an impact of mobile banking transactions on the performance of bank in Algeria due to the fancement variable.

This means that the results of the study are stable and not affected or differed as a result of the profession variable.

Conclusion:

CNEP Bank is a financial institution that accepts deposits and offers checking and savings account services. It provides business, personal, and mortgage loans, and offers basic financial products like certificates of deposit (CDs). Additionally, the bank may serve as a payment agent through credit cards and wire transfers.

This study has reached the following results:

- The corona pandemic crisis has created awareness among customers of the importance of modern electronic payment methods,

which are no longer a choice. They were forced to deal with it under curfews.

- The use of electronic means of payment contributes to the application of social distancing measures and to avoid mixing with people.

- Electronic payment is considered an effective tool in absorbing the crisis of scarcity of liquidity. Waiting queues and overcrowding inside bank and at ATMs are the main reasons for this.

- Electronic payment methods generally contribute to attracting the cash mass that is outside the wheel of development.

- The use of an electronic payment card, especially gold, in the process of withdrawing money still dominates the electronic payment process, and most electronic payment processes are limited to paying services such as gas, electricity, water bills, and the weakness of the electronic purchase process due to the lack of e-commerce adoption.

Based on the previous results, it is possible to confirm the hypothesis that we started from:

The study founds significant differences in the views on the There is an effect of ATM, online banking, mobile banking transactions on the performance of Cnep bank of all sample of study.

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