People's Democratic Republic of Algeria

Ministry of Higher Education and Scientific Research

ÉCOLE SUPÉRIEURE DE COMMERCE
Pôle Universitaire de Koléa

Dissertation Submitted in Partial fulfilment of the requirements for the Degree of Master in Financial Sciences and Accounting

Option: Finance and Accounting

Topic:

Financial Inclusion: The Determinants of Access and Usage of Payment Instruments in Algeria

Presented by:

Souhila FATAH

Supervised by:

Mr. Mohamed TOUATI- TLIBA

2020/2021

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بِسْمِ ٱللَّهِ ٱلرَّحْمَٰنِ ٱلرَّحِيمِ

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Abstract

The term financial inclusion includes the access to and use of payment instruments. The main purpose of this study is to examine the determinants of access and usage of payment instruments. For that, we carried out a qualitative study among Algerian citizens. A sample of 266 individuals responded to a questionnaire collected via social media. Exploratory factor analysis (EFA) was conducted to construct measures of financial inclusion and to reveal factors influencing access and usage of payment instruments. We realized a regression analysis which confirmed five (05) variables to have an influence on access and usage of payment instruments, theses are: age, gender, income, security and cost.

Key words: Financial inclusion, Payment instruments, Exploratory factor analysis, Regression analysis, Questionnaire

Résumé

Le terme inclusion financière comprend l'accès aux instruments de paiement et leur utilisation. L'objectif principal de cette étude est d'examiner les déterminants de l'accès et de l'utilisation des instruments de paiement. Pour cela, nous avons réalisé une étude qualitative auprès des citoyens algériens. Un échantillon de 266 personnes a répondu à un questionnaire recueilli sur les réseaux sociaux. L'analyse factorielle exploratoire (AFE) a été effectuée pour établir des mesures de l'inclusion financière et pour révéler les facteurs influant sur l'accès et l'utilisation des instruments de paiement. Nous avons réalisé une analyse de régression qui a confirmé que cinq (05) variables ont une influence sur l'accès et l'utilisation des instruments de paiement : âge, sexe, revenu, sécurité et coût.

Mots clés: Inclusion financière, Instruments de paiement, Analyse factorielle exploratoire, Analyse de régression, Questionnaire

Summary

List of Abbreviations

APAC	Asia Pacific
API	Application Programming Interface
RTGS	Real Time Gross Settlement
ATCI	Algérie Télé-compensation Interbancaire
ATM	Automatic Teller Machine
CBDC	Central Bank Digital Currency
CCP	Postal Cheque Centers
CIB	Carte InterBancaire
CPMI	The committee on Payment and Market Infrastructures
EMS	Electronic Money Systems
EPT	Electronic Payment Terminals
EU	Europe Union
GCC	Gulf Cooperation Council
HCE	Host Card Emulation
IMPS	Immediate Payment Service
LAC	Latin America and the Caribbean
MEA	Middle East and Africa
MENA	Middle East and North Africa
PAFI	Payment Aspects of Financial Inclusion
POS	Point Of Sale
PSP	Payment Systems Platforms
QR	Quick Response
SCT	SEPA Credit Transfer
SDD	SEPA Direct Debit
SEPA	Single Euro Payments Area
SME	Small and Medium Enterprises

List of Figures

List of Tables

List of Annexes

General Introduction

Introduction

Inclusive growth has recently become one of the world's most important policy goals. Governments, development partners, and economists have given attention to inclusion in economic and social life, including wide or universal access to education, health care, social security, clean water and sanitation, and affordable transport and electricity. Financial inclusion is the most recent item to be added explicitly to the social inclusion agenda and promotes the need for access among all segments of society to a range of financial services at affordable cost.

While financial inclusion is a recent term, for many years governments have recognized the need to extend access to financial services. They have sought measures to promote it through public sector banks, agriculture credit programs, and micro and small enterprise credit programs. Despite substantial gains, barriers to complete financial inclusion exist. Globally, in 2017, a significant number of adults did not have access to a bank account. The objective of promoting greater levels of financial inclusion has been embraced by a great many nations across the development spectrum. The World Bank considers financial inclusion as an enabler for at least 7 of the 17 United Nations' sustainable development goals (SDGs). More than 60 countries had implemented or were seeking to implement national strategies for financial inclusion. These strategies were designed to expand opportunities for financial inclusion through policies and regulations that support financial development, the provision of digital financial services and financial literacy whilst being mindful of issues around consumer protection and the stability of the financial sector (World Bank, 2017). "Getting the payment infrastructure right is the first step for getting financial inclusion of the poor" Nandan Nilekani, chairman of Unique Identification Authority of India said while delivering the foundation day lecture at the Institute for Development and Research in Banking Technology in Hyderabad. Payment instruments play a crucial role to the smooth functioning of modern economies and improvement of financial inclusion level as they are employed on a daily basis to transfer funds among various economic agents, such as consumers, merchants and public authorities. Some of those become relics (e.g. checks, cash), some have gained momentum in their adoption (e.g. payments cards, mobile payments) and some are still in the process of being accepted by the consumers (e.g. electronic/mobile wallets or cryptocurrency). Innovations in the payment industry grab attention and create interest from different participants in the payment ecosystem, including consumers. The widespread adoption of technological solutions and different form-factors, such as electronic and mobile

wallets or wearables, has led to changes at a deeper level. The choice of payment instruments becomes dependent not only on the socio-demographic factors (Age,gender,education..) of users but also on their rational and emotional response. In this context, it is essential to understand how certain factors influence payment instruments access and usage. In Algeria, The arrival of Covid-19 have raised awareness of the importance of digital, indeed there was an explosion of global transaction amounts in 2020, strong likely correlation with Covid-19 and the proposal of e-payment by institutions, especially on the Edhahabia card. According to GIE Monétique (Groupement d'Intérêt Economique Monétique) the total number of online transactions in 2020 is of 4 593 960 with a total amount of 5 423 727 074,80 DZD.

This research draws on various qualitative data methods and aims to understand how and why people choose different payment instruments. The data for the research comes from an online survey and data from the Central Bank of Algeria. It consists of providing information on access to services financial and understands the different factors that influence the use of payment instruments (cheques, post card, bank cards) in Algeria. This is better to understand why the species are still the most used payment method by Algerians. Survey results can support policy directions that foster an effective payment landscape and encourage further reflection on these topics.

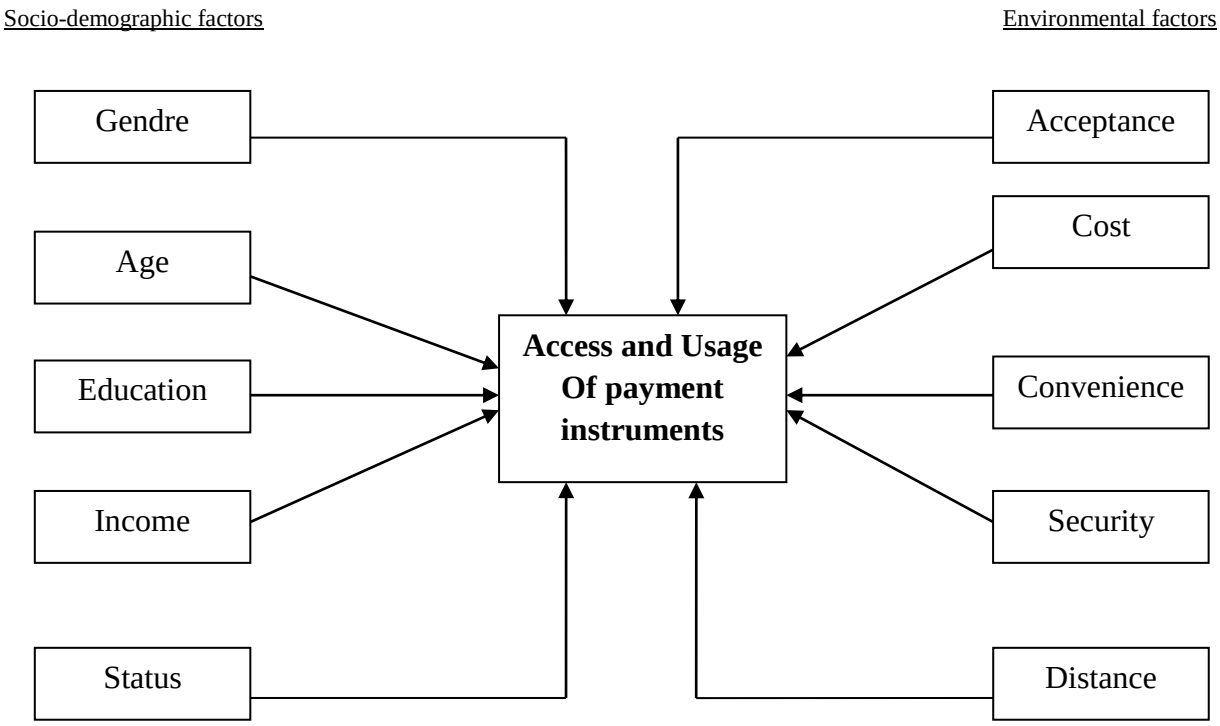
Research question: financial services and particularly payment instruments play an important economic and social role. Therefore, it is aimed to answer the question as follows: **What are the determinants of payment instruments access and usage among Algerians?**

From the central question, we have the following **sub-questions**:

-What are the socio-economic factors influencing access and usage of payment instruments?

-What are the features affecting access and usage of payment instruments?

Research model and hypotheses The theoretical model tested in this study assumes the influence of ten (10) factors from personnel and environmental contexts on access and usage of payment instruments.



Personal context

The behaviour of an individual with regard to the adoption and use of means of payment depends in part on these innate and acquired characteristics. Among the personal factors likely to influence the access and use of payment instruments by Algerians, we have retained for this study: the gender of the individual, his age, his level of education, his profession, income level and religion. Thus, we have formulated five (05) hypotheses for this context:

H1a: There is a significant relationship between gender and payment instruments access and usage.

H1b: There is a positive relationship between age and payment instruments access and usage.

H1c: There is no significant relationship between education and payment instruments access and usage.

H1d: There is a positive and significant relationship between income and payment instruments access and usage.

H1e: There is no significant relationship between profession and payment instruments access and usage.

The environmental context

In addition to personal factors, the usage of payment instruments may be influenced by the environmental conditions. Among the environmental variables likely to influence the usage of payment instruments by Algerians, we selected for this study: the level of security, acceptance, cost, convenience, distance and the pandemic. So we have made five hypotheses (05) for this context:

H2a: There is a significant relationship between security factor and the payment instruments access and usage.

H2b: There is a significant relationship between cost factor and payment instruments access and usage.

H2c: There is no relationship between acceptance factor and payment instruments access and usage.

H2d: There is no significant relationship between convenience and payment instruments access and usage.

H2e: There is no significant relationship between distance and the payment instruments access and usage.

This current study has the following outline. Chapter one, an overview of financial inclusion and payment instruments, in addition to an understanding of the relation between them. Chapter two reviews the previous literature studies and provides a theoretical framework of the determinants of payment instruments access and usage. Chapter three demonstrates an empirical study in Algeria in which it describes the results of the qualitative data analysis and presents limitations and opportunities for further research based on the research findings.

Chapter One:

Basic Concepts of Financial inclusion and Payment instruments

Chapter One: Basic concepts of Financial inclusion and payment instruments

Introduction

This chapter will elaborate in section one more on financial inclusion; its definition, key aspects and development. Section describes the different payment instruments, modernization and new technologies of payment system. Finally, section three reveals the role of payment system in financial inclusion.

Section One: Financial inclusion

1 Definition of financial inclusion

In the literature, financial inclusion (or, alternatively, financial exclusion) has been defined in the context of a wider issue of social inclusion (or exclusion) in a society. *(Leyshon and Thrift , 1995)* tried to explain financial exclusion by defining it as "processes that aim to exclude certain social groups and individuals from having access to the formal financial system. According to *(Sinclair, 2001),* financial exclusion means the inability to access necessary financial services in an appropriate form. Exclusion can come about as a result of problems with access, conditions, prices, marketing or self-exclusion in response to negative experiences or perceptions. *(Carbo et al. ,2005)* have defined financial exclusion as broadly the inability of some societal groups to access the financial system.

"Financial inclusion means that individuals and businesses have access to useful and affordable financial products and services that meet their needs – transactions, payments, savings, credit and insurance – delivered in a responsible and sustainable way".[1]

Financial Inclusion is defined as "the process of ensuring access to financial services and timely and adequate credit where needed by vulnerable groups such as weaker sections and low income groups at an affordable cost"[2]

[1] The World Bank. "Financial Inclusion,https://www.worldbank.org/en/topic/financialinclusion/overview ". Accessed on April 17th ,2021.
[2] Rangarajan .C, Report of the Committee on Financial Inclusion. The Government of India, 2008

"Financial inclusion is the process of ensuring access to appropriate financial products and services needed by all sections of society including vulnerable groups such as weaker sections and low income groups at an affordable cost in a fair and transparent manner by mainstream institutional players"[3]

Adults that are financially included have access to and can easily use a range of financial services. This must be provided responsibly and safely to consumers and sustainably to the provider in a well regulated environment, at its most basic level. Financial inclusion strives to remove the barriers that exclude people from participating in the financial sector and using these services to improve their lives. It is also called inclusive finance.

The aim of Financial Inclusion (FI) is to give the country's large underprivileged population easy access to financial services. It is an effort to achieve society's inclusive growth by making financial resources available to the deprived section of population.

2 Financial Inclusion Dimensions and Data Sources

How to measure financial inclusion is a topic of concern among researchers, governments and policy makers. To date, financial inclusion measurement has been mainly approached by the usage and access to the formal financial services by using supply-side aggregate data (e.g. (*Honohan ,2007*); (*Sarma, 2012*); (*Chakravarty and Pal ,2010*) and (*Amidzic et al. ,2014).* However, the way supply side information is collected is not precise to capture the extent of financial inclusion since it does not inform on the real population that is covered by access to the formal financial system or using financial services. In terms of access, a broad availability (i.e. more ATMs and bank branches) does not mean necessarily that a system is inclusive per se since the geo-location of points of service is unknown. In terms of usage, figures such as number of deposits are overestimated, especially in developed countries. These pitfalls should be solved by using additional information from the demand side when it comes to usage. There are only two studies that rely on demand-side data. The first one, developed by (*Demirgüc¸-Kunt & Klapper (2013 &2015)),* focus on several financial inclusion-related indicators individually.[4] However, monitoring different indicators individually, although

[3] Chakrabarty.KC,Financial inclusion in India,2013

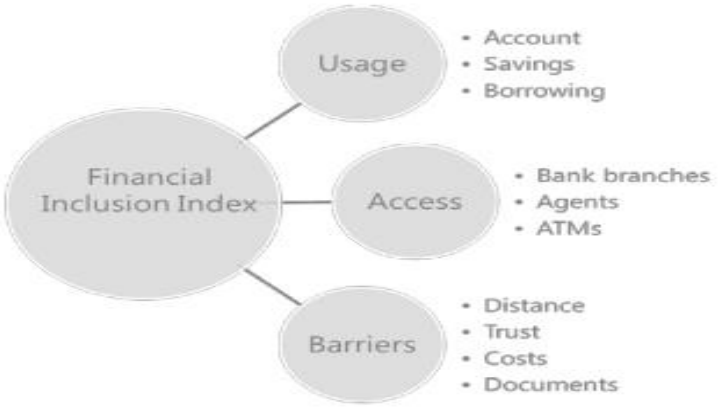
[4] Didier and Schmuckler (2014) analyses individual indicators of the Enterprise Survey but they do not explore a composite indicator.

useful, does not offer a comprehensive understanding of the level of financial inclusion across countries. In the second study, *(Dabla-Norris et al., 2015)* focuses on the Latin America and the Caribbean countries and builds on a previous version of our financial inclusion index by including a similar index for SMEs. In brief, the few attempts to measure financial inclusion through composite indices are either limited in terms of countries or incomplete in terms of information and subject to methodological problems. In addition, current attempts also lack of information on financial exclusion. Nine definitions for financial inclusion have been collated to establish the dimension structure of our index. Accordingly, an inclusive financial system is defined as one that maximizes usage and access, while minimizing involuntary financial exclusion.[5] Involuntary financial exclusion is measured by a set of barriers perceived by those individuals who do not participate in the formal financial system. It includes the barriers to financial inclusion through the obstacles perceived by people prevented from using formal financial services and it is considered a proxy for the quality of financial inclusion. Thus, the degree of financial inclusion is determined by three dimensions: usage, barriers (i.e. quality) and access (Figure 1). These dimensions are, at the same time, determined by a set of 20 indicators including demand-side individual level indicators for the cases of usage and barriers, and supply-side country level indicators for access. Combining information on the three dimensions is important since having access does not implies a straightforward usage as it is conditioned by other socio-economic factors such as income, regulatory framework or cultural habits that make individuals use these kinds of services in a particular manner. Access can be considered a necessary but not sufficient condition for measuring the inclusiveness of a financial system. Likewise, we consider the use of formal financial services as an output of financial inclusion rather than a comprehensive measure of the inclusiveness of a financial system in itself. Our hypothesis is that focusing only on usage and access leads to limited measurement of financial inclusion because we do not have information about the quality conditions of the financial inclusion process or the number of financially excluded people. In this context, demand-side individual surveys that gather information on the perceived reasons why people fail to use formal financial services add significant information about the degree of inclusiveness of a financial system, adding this information on the unbanked aims to assess financial inclusion by introducing the concept of "net financial inclusion". It approaches

[5] For the CGAP financial inclusion means that all working age adults have effective access to credit, savings, payments and insurance from formal service providers. Effective access involves convenient and responsible service delivery, at a cost affordable to the customer and sustainable for the provider with the result that financially excluded customers use formal financial services rather than existing informal options.

financial inclusion measurement from a double perspective. From the banked side, by measuring the actual use of formal financial services, namely, inclusion output of financial systems and, from the unbanked, by incorporating the extent of excluded population in the financial inclusion assessment.

Figure 1 : Multidimensional Financial Inclusion Index



Source: Noelia Cámara and David Tuesta, Measuring financial inclusion: a multidimensional index, BBVA Research and - Bank of Development for Latin America, 2017, p05

- ✓ **Access indicators**: reflect the depth of outreach of financial services, such as the penetration of bank branches or point of sale (POS) devices in rural areas, or demand-side barriers that customers face to access financial institutions, such as cost or information.
- ✓ **Usage indicators**: measure how clients use financial services, such as the regularity and duration of the financial product/service over time (e.g. average savings balances, number of transactions per account, number of electronic payments made).
- ✓ **Quality measures (Barriers):** describe whether financial products and services match clients' needs, the range of options available to customers, and clients' awareness and understanding of financial products.

3 Levels of financial inclusion

Basically, the discussion on the level of financial inclusion is varied and inconclusive. The World Bank distinguishes between those who are ‘formally served‘that is those who have access to financial services from a bank and / or other formal providers and those who are financially served who also include people who use informal providers. In contrast, the term "financially excluded" refers only to those who have no access at all (*World Bank, 2005*). Similarly, (*Chant Link and Associates ,2004*) classified it as "included," "restricted access," and "central exclusion." conversely, when it comes to particular financial markets, the European Commission (2008) categorizes the levels based on specific degrees as follows:

3.1 Bank transactions account category

- ✓ “Unbanked” who are generally people with no bank at all,
- ✓ “Marginally” banked who are people with a deposit account that has no electronic payment facilities and no payment card or cheque book. It can also be people who do have these facilities but make little or no use of them, and
- ✓ “Fully banked” are people that have access to a wide range of transaction banking services that are appropriate to their needs and socio-economic status.[6]

3.2 Credit category

- ✓ Credit excluded,
- ✓ Inappropriately served by alternative lenders,
- ✓ Inappropriately served by mainstream lenders,
- ✓ Appropriately served by alternative lenders, and
- ✓ Appropriately served by mainstream lenders.

However, certain levels of financial inclusion can be argued to be normative rather than positive since the levels are used to represent an appropriate level of financial inclusion in general. As a result, some attempts have been made to compute a financial inclusion index. The level of financial inclusion is graded as high, medium, or low based on the index computation.

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[6] ABU SEMAN.J, Financial inclusion: the role of financial system and other determinants, Ph.D. Thesis, Salford Business School University of Salford-Salford- United Kingdom, 2016, p24

4 General constraints of financial inclusion

- ✓ **Tailor-made regulation:** Every country needs tailor-made legislation and regulation according to its concrete financial inclusion needs, the structure and maturity of the market, its size and main economic and social features, as well as its institutional and regulatory tradition.[7]
- ✓ **Needs of developing countries:** Since they have a larger banked population, developed countries have particular needs for financial inclusion and can therefore also tackle the problem by action based on specific sectors. As a result, they can obtain financial inclusion as a byproduct of efficiency. The situation could be different in countries where the number of unbanked people is higher.
- ✓ **Differences by region**: In this case, regulatory approaches can vary significantly depending on the particular structure of the country or region: Latin America, as well as India and other Asian nations, traditionally have a robust and widespread banking system. This sector has largely guided financial inclusion in these countries. In African nations, Whereas MNOs dominated banks in terms of voice service penetration; this market sector was primarily responsible for financial inclusion.
- ✓ **Institutional framework:** Regulation will thus follow such social and economic patterns, while simultaneously adapting concrete tools to the pace of the relevant context. Furthermore, legislation would be determined by the country's legal practice, while common law countries would readily adopt a model in which the regulator has broad autonomy in taking regulatory decisions.

5 The way to reach a sustainable inclusiveness

We will discuss briefly the way to improve and reach a sustainable financial inclusion.

5.1 Convenience

- ✓ **Supporting innovative payment instruments:**First, innovative payment instruments and services must be supported and incentivized. It has been proven that these are, in principle, very effective in reaching out to the un-banked population and can be conveniently used to transfer small amounts of money. Adopting a technology-neutral approach and ensuring a level playing field by avoiding regulatory arbitrage. To do

[7] Malaguti.M, "Payment System Regulation for Improving Financial Inclusion. " CGD Policy Paper 070. Washington, 61, 2015, p34

so, regulation must not be driven by specific technologies, nor be biased towards one. For instance, electronic payment instruments should be regulated as a whole.

- ✓ **Maintaining flexibility: a combination of the ex-ante and ex-post approach:** To implement general principles on a wider scale and still allow for some level of flexibility to address individual features or peculiarities, it is advisable that a combination of ex-ante and ex-post approaches be selected. This could lead to the statutory adoption of general principles while leaving the regulator some level of flexibility to implement them according to the specific features of a product and the development of the market.
- ✓ **Adopting a functional approach:** In order to identify the general principles which are applicable to individual functions, activities and services must be separately identified. This is done by following a path such as that suggested by the 2014 CPMI Report on non-banks in retail payments.

5.2 Ubiquity

- ✓ **Supporting alternative distribution channels:** ubiquity of such instruments should be favored. To reach such a goal, alternative distribution channels (as opposed to traditional bank-branches or agents) should be incentivized, as has been the case for so-called "banking correspondents". Requirements for these channels would not only be that these non-banks should already be performing commercial activities in a specific territory, but also that these new players would use electronic devices and new technologies to execute money transfers and other related services (such as cash in/cash out).
- ✓ **Avoiding a piece-meal approach:** In this case, regulatory arbitrage must also be avoided, and a level playing field guaranteed. This would require that individual functions and activities be identified and consistently regulated, in particular avoiding any piece-meal approach.
- ✓ **Recognizing the role of the processing, clearing and settlement infrastructure:** Ubiquity also requires that an adequate infrastructure exists in the country in order to process, clear and settle transactions and allow different systems fair and open access. Innovative retail payment instruments must be fully integrated into the national

payments system to allow the user the possibility of using any instrument they wish, since they are potentially interoperable.[8]

5.3 Trust

- ✓ **Eliminating legal uncertainty:** Convenience and ubiquity will be insufficient unless trust is still guaranteed. To accomplish this, any sort of legal uncertainty must be avoided, and instruments and services must be supervised using a risk-based approach. As presented in the 2013 FATF report, the functional approach suggested above will be the ideal way to classify risks and develop mitigation instruments.

5.4 Managing trade-offs between convenience, ubiquity and trust [9]

- ✓ **Adopting lighter standards for low-value services:** Convenience, ubiquity and trust present trade-offs, which need to be addressed. In light of the small amounts carried in innovative stored-value, some general oversight standards might be lowered and regulatory burdens lightened. This is now generally accepted as far as AML or KYC requirements, where a distinction is usually made between regular and non-regular clients of a service provider, or according to the number and/or value of transactions, as well as in terms of access regimes (different capital requirements or entry requirements, up to request of sole registration).[10]
- ✓ **Adopting alternative regulatory requirements to aid flexibility:** Alternate regulatory requirements can also be established to balance the lowering of oversight and/or regulatory standards. In the case of stored-value products, users' funds are protected by a number of alternative measures that also permit reduction of capital requirements for institutions which only provide payment services. Experience shows

[8] The market is primarily responsible for determining how to clear and settle. Because of advances in technology, automated transfers can now be completed in real time, which is extremely attractive. However, as this happens between payee and payer, it does not imply that the process is indeed executed in real time with the banking (payments) sector, since it is up to the individual service provider to decide whether to settle on a net or a real time basis. In that respect this will be part of the national infrastructure for clearing and settlement and be subject to general policies.

[9] Malaguti.M, Op cit, 2015, p37

that a regulator, using a combination of tools within the above advised flexible approach to implementation of general standards, would better fit individual situations.

6 Role of Islamic finance in financial inclusion

In first stage we need to understand the differences between Islamic and conventional financial systems, the difference between Islamic and conventional finance can be viewed in two respects, namely based on ontology and operation. It is worth noted that the key difference between the two is the ontological difference. Islamic finance‘s advocates agree that the differences between the two systems emerge from the philosophical and ethical viewpoints. The philosophical foundation of an Islamic financial system (henceforth IFS) goes beyond the interaction of factors of production and economic behaviour. While the conventional financial system (henceforth CFS) focuses primarily on the economic and financial aspects of transactions, the Islamic system places equal emphasis on the ethical, moral, social, and religious dimensions, to enhance equality and fairness for the good of society as a whole.

The table below summarizes the differences between CFS and IFS:

Table 1: The diffrence between Islamic and Conventional Finance

Type of difference		*Conventional financial system (CFS)*	*Islamic financial system (IFS)*
Ontology	Worldview	The individual as the exclusive owner of his property with absolute rights to wealth.	Man as the vicegerent of God on earth. Any wealth earned by a man is seen to be merely entrusted upon him. He holds the wealth as a trust from God, and does not have absolute ownership of the wealth.
	Philosophy	Economic and financial aspects of transactions are emphasized.	Beside economic and financial aspects of transactions, ethical, moral, social, and religious dimensions for human welfare are equally emphasized
	Basic principles	Based purely on *riba* (interest) and involves (gharar) uncertainty matters and maysir (gambling).	Based on reward, loss, compensation and charity. Prohibit (gharar) uncertainty matters and maysir (gambling).
Operation	Business Operations	▪ Equity financing Issuance of shares on which dividends are earned. ▪ Debt financing Based on loans and borrowings on which interests are given or taken.	▪ Equity financing Based on profit and loss sharing contracts - *mudarabah* (profit sharing) *musharakah* (joint venture). ▪ Debt financing **Permits the contract of exchange which** involves deferred payments through contracts of *bai muqjjal* (sale on deferred payment), *ijarah* (leasing) and *murabaha* (sale with price mark-up).

Source: ABU SEMAN.J, Financial inclusion: the role of financial system and other determinants, Ph.D. Thesis, Salford Business School University of Salford-Salford-United Kingdom, 2016,p24

The Islamic financial system plays an important role in promoting welfare in the society through its prohibition of riba (interest), speculation and gambling (*Chapra, 1992*). It places equal emphasis on the ethical, moral, social, and religious dimensions, to enhance equality and fairness for the good of society as a whole. With the application of the work ethic, wealth distribution, social and economic justice and the role of the state, Islamic financial system considers to be more welfare-based financial system as compared to its counterpart. In this regard, it can be suggested that an Islamic-based financial system is theoretically better in promoting financial inclusion. As stated in many studies pertaining to the role of Islamic finance in promoting financial inclusion (e.g., *Mirakhor & Iqbal, 2012; Mohieldin, Iqbal, Rostom, & Fu, 2012: El-Zoghbi & Tarazi, 2013; MIFC, 2015*), Islamic finance could

contribute to greater inclusion in two essential ways, namely promoting risk-sharing contracts that provide a viable alternative to conventional debt-based financing, and the other through specific instruments of redistribution of the wealth (e.g., through zakat ,waqaf, sadaqah, etc) among the society.

Section two: Payment instruments

In this section, we identify the different types and new technologies of payment instrument in addition to the modernization of payment system in Algeria.

1 Oversight of payment instruments

The way money is used to make purchases has changed dramatically as a result of technological development. Economic agents now conduct a vast number of transactions in order to buy products or pay for services. The related payments are usually made in cash or by transferring money between bank accounts. Payment system is usually used to guarantee the transmission of money in the latter option. According to (*Kokkola ,2010*), Payment systems are the instruments, processes, and systems that enable funds to be exchanged in the economy. Payment networks are often referred to as the plumbing or circulatory mechanism due to their critical value to an efficient economy (*Kahn and Roberds, 2009*). In general, it is only when something goes wrong that end users become more mindful of the payment process. Payment instruments are most often the most noticeable aspect of payment systems to the general public. A payment instrument is a device or collection of procedures that allows funds to be transferred between economic agents (*Kokkola, 2010*). In order to avoid confusion and any ambiguity, it is important to clearly define some basic concepts:

- ✓ **Payment** may be described as the transfer of anything of value or interest to the parties. In most cases, an invoice[11] or bill comes before a payment. Payees are normally given the option to choose how they can receive payment. However, some rules require the payer to accept the country's legal tender up to a certain amount.

[11] An invoice is a document that maintains a record a transaction between a buyer and seller, such as a paper receipt from a store or online record.

Payment of another currency often involves an additional foreign exchange transaction.[12]

- ✓ **Means of payment** are instruments allowing a debtor to transfer money to his creditor and to pay his debt. In Algeria, the means of payment are defined by Article 69 of Order No. 03-11 of 26 August 2003 on currency and credit as follows: "means of payment are all instruments that enable any person to transfer funds, regardless of the medium or technical process used.

Payment systems are an essential component of a country's financial framework, acting as facilitators of economic activity and growth. A payment system often serves as an economic support mechanism, allowing individuals, businesses, and organizations to transfer funds; this is done mostly by the use of payment instruments. The effectiveness and the existence of variety of payment instruments are critical to meet the needs of consumers. While the inefficient usage of payment instruments may have a negative effect on economic development and productivity in the long run, the safe and efficient use of money as a means of exchange in retail transactions effectively supports the monetary system's stability.

2 Typology of payment instruments

Payment can be done in several different ways such as cash, cheque, transfer, bill of exchange, etc…

2.1 Fiduciary

This is the oldest means of payment, we speak of a payment fiduciary (from the Latin fides: which means trust) when it is carried out by means of cash (banknotes and metallic coins) having legal tender on the national territory. In this case, the creditor's claim on the debtor is transferred to the State. The fiduciary money is used to make settlements near small amounts without making accounting entries, it has the main characteristic of being absolutely anonymous given it is the target of thefts. Added to this is the risk of falsification.

We distinguish in this category:

[12] Foreign exchange rates are always fluctuating because the global economy is active 24 hours per day. "An exchange rate is the value of one nation's currency versus the currency of another nation or economic zone.

- ✓ **Metal coins also called divisional coins,** for the lowest values. They have limited discharge power; they can only be remitted as a payment of a debt up to a certain amount.
- ✓ **Banknotes** for relatively higher face values but which generally do not exceed a few hundred currency units. They have unlimited liberating power; their use frees the bearer of any debt.

2.2 Scriptural

Scriptural money (from the Latin scriptura: which means writing) it's created by commercial banks. In Algeria, the Public Treasury (TP) and the postal cheque centers (CCP) make available to their customers the scriptural means of payment. We are talking about a scriptural payment when it is made by means of a cheque, transfer or any other means that causes the receivable of the creditor on the debtor to be transformed into a receivable on the bank. Generally, these scriptural payment instruments are post-payment instruments. The role of these payment instruments is to materialize the order given by the debtor to the bank that manages his account, to transfer a fixed sum to himself or to a third party, thus circulating the scriptural money. It can be used in multiple contexts: face-to-face, remote trading, cross-border transactions, etc. Transactions must be traceable, especially for security reasons.In developed countries, scriptural money has largely replaced fiduciary. Indeed, the ease and security of transfers on the spot and at a distance, as well as the retention of traces of transactions, are at the origin of the increase in the rate of bancarisation that is to say of the use of the scriptural money. Scriptural means of payment include:

2.2.1 Paper or traditional instruments

- ✓ **cheque** is a written document that the shooter (a natural or legal person who holds a bank account) gives to the beneficiary to pay for a purchase or a service. In turn, the beneficiary gives the cheque to his bank which will be responsible for cashing it from the drawn bank (bank which manages the account of the issuer of the cheque)
- ✓ **Transfer:** this is a written order by which the customer orders his bank to transfer a specified sum from his account to the account of a beneficiary customer, domiciled either at the same agency or at the level of an agency belonging to the same network or at the level of colleagues (be it banks, CCPs or Treasury). This system is more secure than the cheque in that it does not involve a risk of default.

- ✓ **Negotiable instruments:** among these we distinguish, the bill of exchange and the promissory note.
  - **A bill of exchange** is a written document issued by the creditor (the shooter) inviting the debtor to pay the debtor a specified amount at a specified time.
  - **The promissory note** is a written document prepared by the debtor (subscriber) and by which he undertakes to pay a specified amount at a specified time.

2.2.2 The automated instruments

- ✓ **The notice of automatic debiting:** it consists for the creditor to carry out periodic recoveries which result in automatic debiting from the account of the debtor.

2.3 Electronic means of payment

These are means of payment that use very sophisticated technologies such as computer, magnetic, electronic and telematic techniques that allow the mobilization of funds without using paper. Electronic money takes the following forms:

There are several types of cards depending on their functions: payment, withdrawal or credit.

- ✓ **Payment cards** are cards that allow their users to make payments for their purchases from merchants who have Electronic Payment Terminals (EPTs).
- ✓ **Withdrawal cards** are cards that allow holders to access Cash Machines and Automatic Teller Machines (ATMs) to check their accounts, find out their positions and withdraw cash.
- ✓ **Credit cards** are cards that allow their users to make purchases with a deferred payment (month-end debit for example). These cards are backed by credit lines with a ceiling amount and a negotiated rate.
- ✓ **The electronic wallet (SME)** represents a card with a built-in microprocessor on which are recorded electronic signs representing a purchasing power allowing the settlement of small sums of money. Examples of these (SMEs) are Proton (in Belgium) and PMB (in Portugal).
- ✓ **The virtual wallet (PMV**) where the electronic signs are stored in the memory of a computer allowing transactions to be carried out remotely, using telecommunications networks of the Internet type.

3 New technologies of payment

New payment usages are largely based on the recent emergence of technologies specifically designed to promote consumer adoption. In the field of contactless payments, card payments and the majority of mobile phone payments are based on the use of a secure physical component called “secure element”, which generally consists of an electronic chip on which the contactless payment software application is installed. This component can either be “integrated” into the SIM chip of the telephone operated by the operator, or be, for some telephones, separate from the SIM chip. In this second case, services independent of the SIM chip and of the telephony operator can be developed and integrated into this component. The application is used, to perform the payments, a feature of the phone authorizing the issuing of messages by the wireless communication, which allows the application to interact with the merchant’s terminal. An alternative technology has been available since 2012, for mobile phones to make contactless payments without resorting to a “secure element”. This system, called "Host Card Emulation" (HCE), is based on the integration into the operating system of the device itself of a software application that allows payments to be made via wireless communication, however, without requiring the routing of information to a secure physical component. The main advantage of this technology is to facilitate the emergence of new actors likely to create innovative applications for mobile payment, since the development of such applications is no longer dependent on the control of processes related to electronic chips. In the remote payments field, the emergence of new applications for digital wallets makes it possible to entrust to a third party deemed trustworthy the information relating to payment cards or bank details, which exempts consumers from having to re-enter them at the time of each payment. These solutions, which can be provided by a specialized company (such as PayPal or Paylib) or by a merchant on its website, allow the initiation of payments between consumers and suppliers, but also transfers from person to person. These e-wallets can be enriched to store other data, Some e-wallet applications can also be linked to contactless payment systems or payment initiation through social networks (active hashtags on Twitter, Facebook or LinkedIn for example). In addition to these e-wallet services, new solutions are offered, that enable payment transactions to be initiated remotely, while using a different channel based on their customers' online banking spaces. As part of these solutions, customers are redirected, during from their payments, to their online banking spaces. They must then enter the identifiers allowing them to log in and validate the transaction; the transaction information is automatically filled in. These solutions have the advantage for

consumers of not having to disclose their banking details to a third party. However, they involve the manipulation of online banking identifiers, which are considered sensitive data. If these new technologies address a growing need for speed in payment transactions, they also reinforce the need for sellers, to ensure the earliest possible availability of funds transferred by consumers, which payments solutions now allow. Instant payments can be defined as electronic retail payment solutions available 24 hours a day and ensure a credit to the account of the beneficiary immediate or almost immediate (order seconds after initiation of payment). These solutions are based on a reorganisation of the inter-bank clearing and settlement circuits, in order to allow a faster settlement of transactions. The Single Euro Payments Area (SEPA) initiative has been a key enabler for the integration of the retail payments market in the European Union (EU); the development of SEPA Credit Transfer (SCT) and SEPA Direct Debit (SDD) were crucial steps in this regard. This new scheme, for which membership by banks remains optional, has been operational since November 2017.[13] Existing situations in several countries show that the emergence of these instant payment solutions is often closely linked to the development of new payment technologies, particularly for the initiation of transactions. Thus, the Indian Immediate Payment Service (IMPS) instant payment system operated by the Indian National Payments Association (NPCI) was launched in 2010, initially for mobile phone payments only, before being extended to internet payments and ATM money transfers. In addition, several instant payment systems have explicitly focused on the new payment initiation channels, in particular the Internet and the mobile phone. The system set up in the United Kingdom (UK Fast), or the project currently under development in Australia ("New Payments Platform", NPP) demonstrate this dynamic: the platforms created for the provision of the service allow payers to provide their counterparties with their telephone numbers (or email addresses in the Australian case) instead of their bank details. However, the development of these new payment technologies leads to increased security, as shown in France by the high level of fraud observed on remote card payments, a 13.4% increase on payments and withdrawals made in France and abroad.[14]

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[13] European payment council : https://www.europeanpaymentscouncil.eu/news-insights/insight/new-retail-payments-strategy-eu (Accessed :April 24th , 2021)

[14] Villeroy.F.The banque de France, Annual Report of the Observatory for the Security of Payment Means 2018, Available at: https://publications.banque-

The authorities responsible for supervising the means of payment take into consideration these developments, and the measures taken to address these new risks.

4 The modernisation of the payment system in Algeria

The payment system focuses mainly on mass payment systems and the large-amount payment system. Since Wednesday, February 8th, 2006, (Real Time Gross Settlements) has been operating.

4.1 The RTGS

The RTGS (Real-Time Gross Settlement) is a fully electronic payment system, and orders are only made by transfer request. These are carried out in the transfers are thus not paid, primarily on the basis of a gross settlement operation, i.e. transactions are processed separately, in a central currency that is regulated by a credit law. RTGS accepts payments by transfer in amounts equal to or greater than one million dinars, as well as payments in amounts less than one million dinars that participants' clients believe are urgent and must be made through the RTGS system. This system was developed in accordance with international standards, with the assistance of the World Bank, particularly in terms of trade reliability and security, and was set up by the Bank of Algeria, which manages and administers it as part of its mission as a bank of banks, which means that transactions with the Bank of Algeria as well as interbank transactions are processed exclusively and automatically in the RTGS. The aim of this system is to use a single monetary area and policy, supporting rapid and secure decentralised execution of operations, payments and Operations of funds whose amount is very large and therefore fight against the money laundering.

4.2 ATCI Mass Payment System

(Algérie télé-compensation interbancaire) which means literally (Algeria inter-bank remote clearing).It enables the exchanging of all forms of mass payment (cheques, bills, transfers, automatic debits, and card transactions), the ATCI is an essential component of the system of real-time gross settlement of significant sums. Only transfers with a nominal value of less than one million dinars areaccepted by this system, transfer orders with a nominal value greater than or equal to this amount must be made in the system of real-time gross settlements of large amounts and urgent payments. The ATCI system operates on the principle of multilateral clearing of payment orders submitted by participants in this system. Multilateral clearing balances are calculated by the ATCI system and released for settlement in the

wholesale real-time gross settlement system urgent amounts and payments known as Algeria Real Time Settlements (ARTS).The ATCI system is managed by the Interbank Pre-clearance Centre (CPI in french :Centre de Pré-compensation Interbancaire), a joint stock company subsidiary of the Bank of Algeria.

4.3 SATIM

SATIM[15] is the electronic trader interbank in Algeria, for domestic cards and in the near future, international. It is Algeria's only interbank electronic banking operator for domestic and international cards, acting as one of the technical instruments assisting banks in their development and modernization program, especially in promoting card payment methods. SATIM is working to implement the electronic payment function, which has been operating since the end of 2002. The aim is to bring the culture of electronic payment into Algeria at the level of merchants, issuers, buyers, and end users. To do so, SATIM focuses on the development of distributor's automatic tickets (ATM), merchant payment card, as well as international card (visa, Mastercard). In recent years, SATIM has experienced significant growth in its services. To date, more than 1,350 ATM banking machines and 24,850 electronic payment terminals deployed are connected to its servers, plus 34 operational webmarchands sites on its platform. This growth is mainly due to the impact of the CIB card on the purchasing habits of Algerian citizens.[16]

Algeria has modernized its payment system from manual to remote-clearing in order to ensure better security and speed of banking operations:

4.4 Adaptation of the bank information system to tele-clearing and product innovations

The aim of information systems is to enhance the security of systems information and organization of computer operations, ensure the evolution of the system information is required to satisfy the needs of clients, setting up a network monitoring device, VSAT installation for all sites. A VSAT is a two-way ground station that transmits and receives data from satellites. It's a small satellite that can transmit both narrow and broadband data to satellites in space in real time. The data will then be redirected to other remote terminals or hubs all around the world.

For the bank code: 3 positions, Agency code: 5 positions, Account number: 10 positions and Account key: 2 positions.

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[15] **(**Société d'automatisation des transactions interbancaire et monétique) literally means Interbank and Electronic Transaction Automation Company.

[16] SATIM Presentation available at : https://www.satim-dz.com.consulté, (Accessed: April 18th 2021)

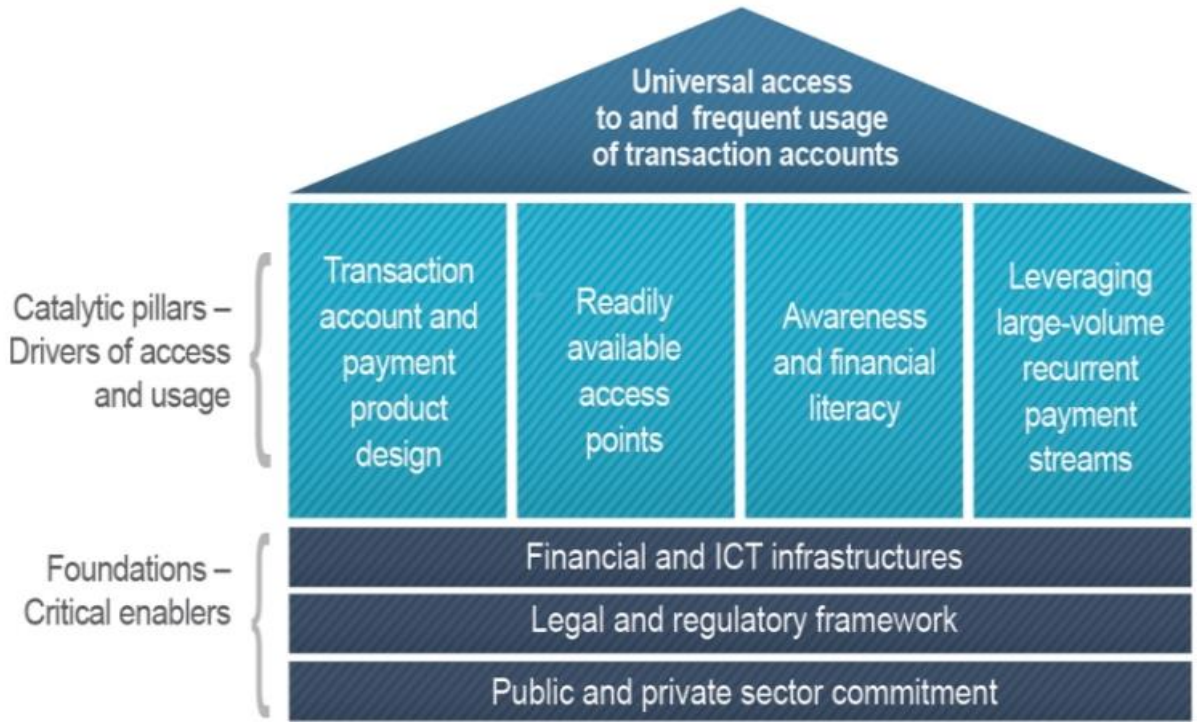
Product Innovations: New electronic banking products have been launched, including the national interbank payment and withdrawal card (CIB card).

Section Three: Financial inclusion and payment instruments

Introduction

According to the PAFI report, all individuals and businesses should have access to and use at least one transaction account run by a regulated payment service provider to fulfill most, if not all, of their payment needs, safely store some value and serve as a portal to other financial services. However, a variety of obstacles to transaction account access and use exist. To overcome these obstacles, the PAFI report outlines a framework comprised of foundations, i.e. the critical enablers for payment systems and the provision of payment services, and catalytic pillars, i.e. the drivers of access and usage. Both foundations and pillars lead to the ultimate goal of universal access to the use of transaction accounts..

Figure 2 : Framework for the guidance on payment aspects of financial inclusion

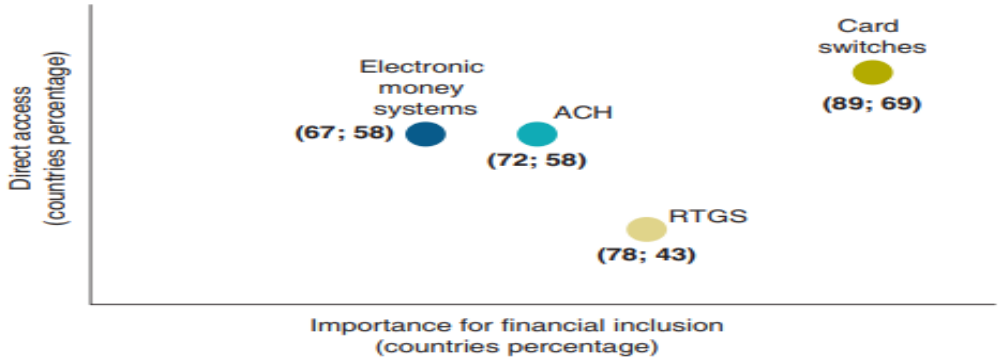


Source: CPMI and World Bank (2016).

1 The Role of Payment Systems and Services in Financial Inclusion

Retail payment platforms and systems (ACH "Automated clearing house", EMS "Electronic Money System", ATM "Automated teller machine", POS "Point of sale" and card switches) take on a more significant role than other systems or platforms (as compared to a cheque clearing house, for instance). Figure06 illustrates the importance given to payment platforms and systems in financial inclusion in Latin America and the Caribbean, showing whether or not PSP "Payment Service Providers" have direct access.

Figure 3 : Payment platforms and systems: direct access and importance for financial inclusion



Source: Morales .Rand Pérez.Y, The Role of Payment Systems and Services in Financial Inclusion(Latin American and Caribbean Perspective),74, 2016, p40

PS: The figure represents the percentage of importance placed on financial inclusion to each platform and operating system of payment in Latin America and the Caribbean, while the second shows the percentage of countries with direct access to PSP without intermediaries.

Card switches (89%) are the platform considered most important for fostering financial inclusion, followed by RTGS (78%), ach (72%) and EMS (67%). Payment platforms and systems perform a key role in strategies by favoring access to and use of ERPS. In some cases, there has been growth, such as in e-money platforms and systems. It should be emphasized that the type of access (direct or indirect) PSP have to platforms and systems can boost or reduce coverage and accessibility of ERPS for end users, as well as interoperability between PSP. In this context, it is worth mentioning that in only 43% of cases do PSP have access to RTGS systems. Payment card switches have direct access in 69% of the countries,

while EMS and ach direct access is guaranteed for PSP in 58% of the countries. In this regard, the authorities should assess the type of access for different PSP, keeping in mind the importance of not compromising security and the smooth functioning of payment platforms and systems. This poses challenges in both regulatory and corporate governance spheres of such platforms and systems. Greater access for PSP to RTGS systems can lead to increased financial inclusion because these large-value systems form the backbone of the financial system. Moreover, said systems can become the sole platform for government payments (as issuer and receiver), making such operations more efficient (payments to providers, tax collection and social transfers).[17] The report on payments aspects of financial inclusion (2016) outlines seven guiding principles designed to assist countries that want to advance financial inclusion in their markets through payments:

- ✓ **Commitment**

  Commitment from public and private sector organizations to broaden financial inclusion is explicit, strong and sustained over time.
- ✓ **Legal and Regulatory Framework**

  The legal and regulatory framework underpins financial inclusion by effectively addressing all relevant risks and by protecting consumers, while at the same time fostering innovation and competition.
- ✓ **Financial and ICT Infrastructures**

  Robust, safe, efficient and widely reachable financial and ICT (information and communications technology) infrastructures are effective for the provision of transaction accounts services, and also support the provision of broader financial services.
- ✓ **Transaction account and payment product design**

  the transaction account and payment product offerings effectively meet a broad range of transaction needs of the target population, at little or no cost.
- ✓ **Readily available access points**

  the usefulness of transaction accounts is augmented with a broad network of access

[17] Morales .Rand Pérez.Y, The Role of Payment Systems and Services in Financial Inclusion(Latin American and Caribbean Perspective),74, 2016, p40

points that also achieves wide geographical coverage, and by offering a variety of interoperable access channels.

- ✓ **Financial literacy**

  Individuals gain knowledge, through financial literacy efforts, of the benefits of adopting transaction accounts, how to use those accounts effectively for payment and store-of-value purposes, and how to access other financial services.

- ✓ **Large-volume, recurrent payment streams**

  Large-volume and recurrent payment streams, including remittances, are leveraged to advance financial inclusion objectives, namely by increasing the number of transaction accounts and stimulating the frequent usage of these accounts.

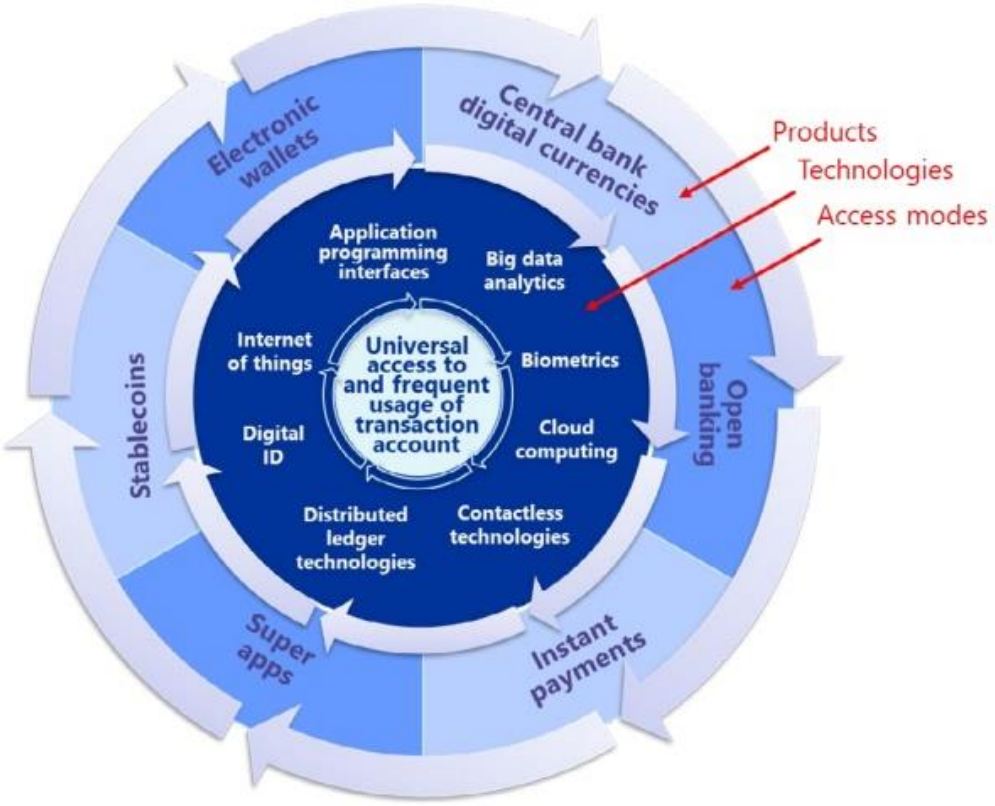
2 Fintech developments of relevance to the payment aspects of financial inclusion

Technological innovation has made major inroads into financial services, especially payments. The pace of innovation has substantially increased in the past five years, leading to the "era of fintech". Fintech can be defined as advances in technology that have the potential to transform the provision of financial services, spurring the development of new business models, applications, processes and products. The Application programming interfaces (APIs), big data analytics, biometric technologies, cloud computing, contactless technologies (including quick response (QR) codes), digital identification, distributed ledger technologies and the internet of things have been identified as the most relevant new technologies to payments. They facilitate the delivery of new products and access modes. Prominent examples of new products are instant payments, central bank digital currencies (CBDCs) and stablecoins. New technologies not only offer new modes of accessing these new products by means of electronic wallets, open banking and super apps, but also allow payments to be initiated via traditional transaction accounts and/or payment instruments, It is worth noting that they can also be applied to existing products and/or access channels in a variety of combinations (eg initiation of card payments via electronic wallets leveraging contactless technologies). On the other hand, new products and access modes do not necessarily rely on advances in technology, but can simply use existing technologies in an optimised way (eg instant payments can be offered based on traditional technologies and initiated via online banking rather than electronic wallets).[18]

[18] Bank for International Settlements ,2020.

The "PAFI fintech wheel" (Figure4) directs focus onto new technologies in the centre. These new technologies are not indispensable for the product and access layer, but are in many cases harnessed to improve the provision of these new products and access modes.

Figure 4 : Fintech developments potentially relevant to the payment aspects of financial inclusion: the "PAFI fintech wheel"



Source: CPMI-World Bank.

Conclusion

In an increasingly connected world, having financial services readily available is absolutely key factor to growth and prosperity. Financial inclusion is widely recognized as one of the most important engines of economic development. The first step toward achieving a greater financial inclusion is the payment system which has a vital role in making people access to different financial services. Hence, the financial inclusion.

Chapter two:

The determinants of payment instruments access and use:

Theoretical elements and literature review

Chapter two: Determinants of payment instruments: Theoretical elements and literature review

Introduction

This chapter provides in the first section, a comprehensive review of the recent evidence on financial inclusion from all regions of the World. In addition, it identifies the level and factors influencing financial inclusion in literature. Then, it discusses in section two the literature review which explains the factors influencing the use of different means of payment.

Section One: Factors influencing payment instruments access and use: Theoretical elements

This section briefly summarizes the different factors and other characteristics of payment instruments which have significant effect on payment adoption and use.

1 Factors affecting financial inclusion

Based on the development of several researches and studies which investigated the factors influencing financial inclusion, there is four major spheres which may have an effect on financial inclusion.

1.1 Socio-demographic factors

Social health of the ecosystem may play a crucial role in promoting financial inclusion since social welfare determines the way people behave and make decisions on financial markets (Cull, Ehrbeck, & Holle, 2014). As previous research suggests, the less developed socio-demographic characteristics are, the more likely it is that the population will avoid using financial services preferring old-fashioned cash or even barter, and the number of people with a bank account will be small. Social welfare too may influence the depth of usage of financial services. Both factors affect the demand side of financial inclusion and hamper its development (Dev, 2006). However, where the range, complexity and quality of financial services are aligned with social development, this sphere might not be a problem for policy-makers.

1.2 Technological (Digital) factors

More innovative companies enter the market with offers to make everyday financial transactions both less expensive and more convenient to their customers, giving rise to a new phenomenon of digital financial platforms. Thus, the ecosystem of financial inclusion is changing with a new big group of stakeholders from the digital world entering it (GPFI, 2014). Indeed, initiatives to increase financial inclusion in developing countries recently have started to rely increasingly on the use of technology – mobile banking, electronic payments or fintech start-ups (De Koker & Jentzsch, 2013). Moreover, as suggested by (Adner and Kapoor ,2010), the readiness of complements plays an essential role in solving the uncertainties in the ecosystem perspective, which is highly relevant to financial inclusion issues: i.e., mobile banking will not develop until there is a broad and high-quality mobile network in place.

1.3 Economical factors

It have been found in several recent studies that poverty as well as inequality negatively influences access to formal financial services (Clarke, Xu, & Zou, 2006; Jeanneney & Kpodar, 2011). Actually, (Bittencourt, 2012) and (Pal and Vaidya ,2011) find that financial development and economic growth are positively associated.

1.4 Political factors

The political sphere has always been important for financial markets, playing a key role in both boosting it or, sometimes, in the absence of proper regulation, holding up its development (DemirgucKunt et al., 2008). As financial inclusion is part of financial markets, politics might also play a crucial role in its promotion. At the same time, in a number of countries initiatives in financial inclusion, including mobile banking solutions, were impeded by regulatory fears as to whether the proposed new regulatory models complied with international financial integrity standards (Chatain, Hernández-Coss, Borowik, & Zerzan, 2008).

2 Factors affecting payment instruments usage

In addition to factors previously cited in section one, the following presented factors were used as the foundation of the conceptual framework developed by the authors: perceived security, perceived risk, perceived usefulness, perceived ease of use and social influence.

2.1 Perceived Security

According to (*Kalakota & Whinston ,1997),* security threats are "circumstances, condition, or event with the potential to cause economic hardship to data or network resources in the form of destruction, disclosure, modification of data, denial of service and/or fraud, waste and abuse" (p. 317). Perceived security in e-commerce transactions is defined as the consumer's subjective assumption whether his/her personal information, in both private and monetary terms, will not be interfered by unauthorized third parties *(Chellappa & Pavlou, 2002).* Security threats in the context of online banking are mostly present through network, data transmission and transaction attacks, furthermore, they may occur due to inappropriate access made by false authentication of third parties *(Yousafzai, Pallister & Foxall 2003).* (Damghanian, Zarei and Siahsarani Kojuri ,2016) presented perceived security that relies on three dimensions: credibility, reliability and privacy. Quality of product or service meaning degree of accuracy and timeliness of product or service *(Munusamy, Chelliah, & Mun, 2010),* while credibility of a system refers to the ability that it can be expected to function continuously and precisely *(Schneider, 1998).* Reliability covers matters such as protection against threats that might harm someone or his/her possessions *(Akhter, 2014).* Lastly, privacy refers to the extent to which an individual is of the opinion that organisational and technical infrastructure in privacy terms is interrupted *(Xu and Gupta, 2009).* Perceived security is influenced by information asymmetry, meaning that not all parties have the relevant information needed to make decisions *(Akerlof, 1970),* and it is one of the major problems in the adoption of e-payment systems and internet banking *(Mukherjee & Nath, 2003; Godwin, 2001).* The negative effects of asymmetric information can be reduced by epayment systems providing security-related statements to their customers *(Yoon, 2002).* Furthermore, according to *(Casaló, Flavián and Guinalíu ,2007),* customer's perception of unreliability, and concerns regarding safety matters are higher in the online context when conducting transactions.

2.2 Perceived Risk

(Kaplan and Garrick, 1981) defined risk as the sum of uncertainty and possibility of "some kind of loss or damage" (p. 12). There are several types of risk in the literature such as business risk, social risk, economic risk, safety risk, investment risk, military risk, political risk *(Kaplan & Garrick, 1981).* Perceived risk has both a cost and a probability dimension *(Kogan & Wallach, 1964).* The overall perceived risk is often calculated by multiplying the mentioned two dimensions *(Cunningham, 1967).* Additionally, risk can be limited but never

totally eliminated *(Kaplan & Garrick, 1981).* Consumers evaluate purchase consequences in a subjective matter focusing on the kind and degree of potential risks and benefits associated (Cho, 2004). Perceived risk and perceived benefits are directly influencing the likelihood to dismiss intended online transaction *(Cho, 2004).* Risk-taking is, among others, an individual characteristic which influences the tendency whether to use or not online payment. There is a negative relationship between perceived risk and intention to use e-payment systems which stems from the uncertainty perceived by new users and/or the negative consequence which a purchase may have *(Liébana-Cabanillas, Sánchez-Fernández, & Muñoz-Leiva, 2014).*

2.3 Perceived Usefulness

According to *(Davis, Bagozzi and Warshaw, 1989),* perceived usefulness can be defined as "the degree to which a person believes that using a particular system would enhance his job performance" (p. 985), thus it can be used advantageously. However, many refer to it as one's subjective perception of the functionality of a new, unused technology to solve a certain task. *(Venkatesh, Thong & Xu, 2012; Gefen, Karahanna & Straub, 2003).* Thus, in case usefulness is perceived to a high degree, users presume a "positive use-performance relationship" *(Davis, 1989, p. 320).* Perceived usefulness is proven to be a determinant of usage intention, as well as it can mitigate the effects of perceived ease of use on usage intention *(Lee, Hsieh & Chen, 2013).*

2.4 Perceived Ease of Use

Based on *(Davis, 1989)* perceived ease of use is defined as "the degree to which a person believes that using a particular system would be free of effort" (p. 320) and claimed that between two applications the one with the higher degree of perceived ease of use will be more likely to be accepted by users *(Davis, 1989).* Similar to perceived usefulness, perceived ease of use has also a significant effect on users' usage intention and level of acceptance, as well as perceived ease of use and perceived usefulness is strongly related to one another *(Davis, 1989).*

2.5 Social Influence

Individuals' consumption and purchasing behaviour are influenced by their social and cultural environment and therefore, the needs for new payment services are affected as well *(Dahlberg, Mallat, Ondrus, & Zmijewska, 2007).* A changing environment, including inter alia "changing payment cultures, greater mobility of people, and increased appreciation for

leisure time" *(Dahlberg, Mallat, Ondrus, & Zmijewska, 2007, p 5),* may result in needs that affect the supply and demand of new payment services. Social influences may have a significant and direct impact on customers' intention to adapt mobile payment services *(Yang, Lu, Gupta, Cao, & Zhang, 2012).* The perceived risk of potential customers is more influenced by social environment than of those who are actual customers (Yang, Lu, Gupta, Cao, & Zhang, 2012). Furthermore, they found that initial users' perception of relative advantage and risks of mobile payment services are more affected by social influences compared to those who are already using it. *(Bass ,1969)* stated in his New Product Growth Model that social pressure may have an influence on innovation adoption.

2.6 Information Asymmetry

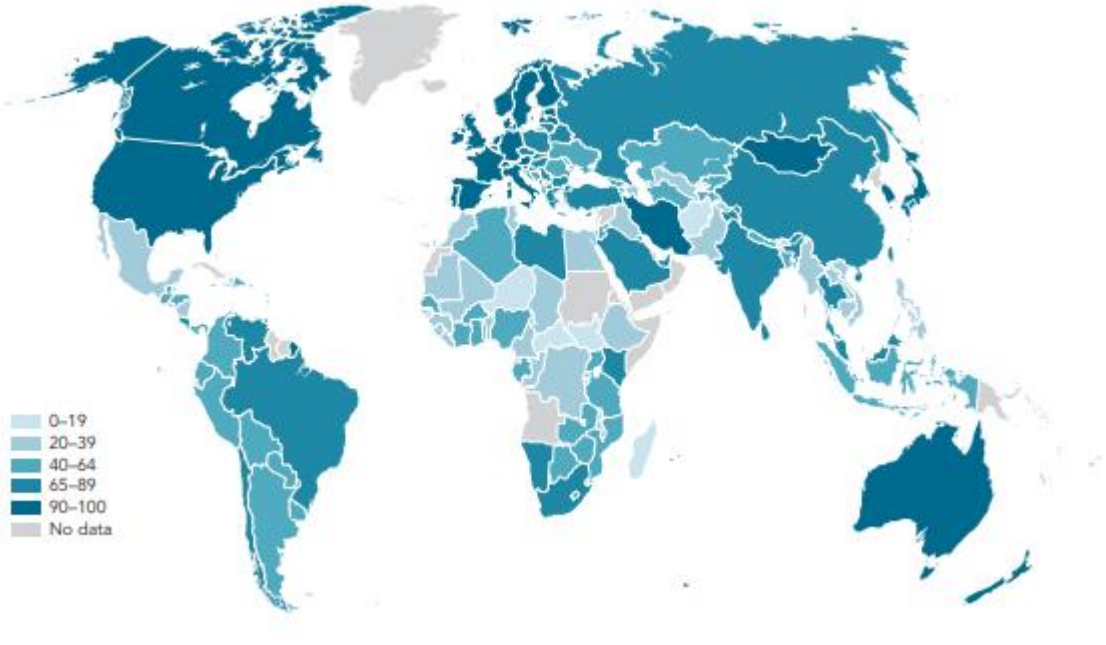
There is always asymmetrical distribution of information among different parties because in reality, a market where every party has the same amount of information does not exist as the gaining of information is normally associated with costs *(Picot, Dietl, Franck, Fiedler & Royer, 2012).* , in many cases it is not possible to evaluate the quality of products due to the asymmetrical distribution of information *(Akerlof, 1970).* The concept of asymmetric information is based on the microeconomic principal-agent theory *(Picot, 1989),* which was invented by (*Jensen and Meckling ,1976)* and which stems from the new institutional economics *(Hochhold & Rudolph, 2011).* The latter can be classified as a modification and a development of the neoclassical theory *(Mathissen, 2009)* which is based, among other facts, on the assumption that complete information is available *(Kunz, 1985);* thus, there are no principal-agent relationships in neoclassical theory, as they require asymmetrical information distribution *(Göbel, 2002).* Within the framework of the principal agent theory, the agent is in charge with acting according to the ideas of the principal *(Mankiw, 2004)* and receiving a certain decision making power from the principal *(Richter & Furubotn, 2003).* Thereby, the principal is always the less informed actor compared to the agent *(Erlei, Leschke, and Sauerland, 2007).* An unequal distribution of information is predominantly present in the service sector *(Baßeler, Heinrich, Utecht, 2010).* It was also found that the phenomenon of asymmetric information is more intensified in transactions made online as the customer typically does not see the product physically *(Lewis, 2011).* Trust and reputation can reduce all types of asymmetric information distribution and the resulting risk *(Dahlhaus, 2009).* Within the principal-agent concept, it has to be distinguished between three different kinds of asymmetric information result: (i) hidden characteristics, (ii) hidden action/hidden information and (iii) hidden intention *(Frambach, 2013).*

Section two: Financial inclusion determinants in literature

This section reviews the state and the factors and determinants of financial inclusion in different countries and regions, focusing on studies from the African region, Asian region, Middle East and North African (MENA) region, Latin America and Europe.

Figure 5: Account ownership around the world

Adults with an account (%)



Source: Global Findex database

1 Determinants of financial inclusion in Africa

Financial inclusion has gained increased attention in policy circles in many African countries, and many studies on financial inclusion in Africa have begun to emerge. For instance, (*Beck et al ,2014)* examine the factors affecting financial inclusion in Africa, and find that African countries witnessed improved access to finance; specifically, foreign banks from emerging markets helped to improve access to finance in African countries while the presence of foreign banks from Europe and U.S. did not lead to greater access to finance in African countries. (*Zins and Weill ,2016)* examine some determinants of financial inclusion in 37 African countries, and find that being a man, richer, more educated and older is associated with greater financial inclusion in African countries. (*Chikalipah,2017)* investigate the

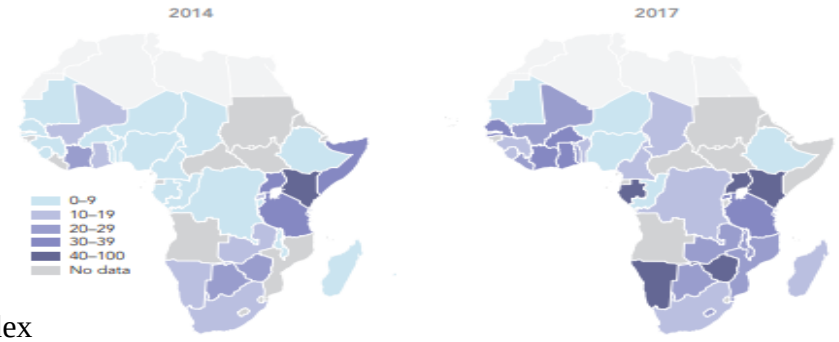
determinants of financial inclusion in Sub-Saharan Africa for the year 2014, and find that illiteracy is the major hindrance to financial inclusion in Sub-Saharan Africa. **In Zimbabwe**, A study was conducted to evaluate the determinants of financial inclusion. The results for the estimation of the financial inclusion showed that there is a positive relationship between age and financial inclusion; the study also established that educated people are able to comprehend the various financial products on the market and make informed decisions hence improving on their access to these. It also showed a positive and significant relationship between financial inclusion and financial literacy. The result revealed that the greater the distance away from centers that provides financial products the less the people will be financially included. Distance reduces the chances of people to access financial products. . It showed that there is a negative relationship between financial inclusion and documentation; however Internet connection has a positive and significant impact on financial inclusion, because it has increased uptake of banking products as people prefer to do their banking online.[19]

Another study was conducted in **Ghana** using the data came from the World Bank Global Financial Inclusion Index which covered 1000 individual adults across the country for the analysis. The results show that gender was found to have a positive influence on the probability of inclusion in the formal financial. Also, the age of individual adults was found to have a positive influence on the probability of inclusion in financial services. Results showed that people who are literate are more likely to be included in the formal financial market of Ghana than their illiterate counterparts. It was also found that distance has a negative relationship with the probability of inclusion of individual adults in the formal financial market of Ghana. The study revealed that the cost of inclusion in the formal financial market is positively related to the probability of inclusion in the formal financial market; it is not a statistically significant determinant. It was also found that the lack of documentation is negatively related to the probability of inclusion in the formal financial market. Another important determinant of financial inclusion is the lack of trust for formal financial institutions by individuals, which found to be negatively related to the probability of inclusion. Same for Lack of money, the negative relationship implies that people who perceived that they did not have enough money are less likely to be included in the formal

[19] Abel.S, Mutandwa.L, Le Roux.P, International Journal of Economics and Financial Issues: A review of determinants of Financial Inclusion, 08, 03, 2018,p05 Available at: www.econjournals.com

financial market than those who think otherwise. The results showed that inclusion of relations in the formal financial market was found to be positively related to the probability of inclusion of individual adults.[20]

Figure 6: Mobile money accounts evolution in Sub-Saharan Africa since 2014 (in %)



Source: Global Findex

2 Determinants of financial inclusion in MENA region

Recent empirical evidence confirms that financial inclusion in MENA countries is mostly aimed at the low-income population. (*Neaime and Gaysset ,2018)* examine how financial inclusion affects poverty levels and income inequality in eight MENA countries over the 2002 to 2015. They find that although financial inclusion decrease income inequality, financial inclusion had no effect on poverty levels whereas larger population size, high inflation, and trade openness significantly increased poverty levels in the MENA region. (*Akhtar and Pearce ,2010)* show that the factors promoting financial inclusion in the MENA region are: mobile and branchless banking, electronic payments of salaries and pensions through bank accounts, Islamic micro finance; basic bank accounts; leasing, factoring and insurance; utilizing postal systems; while some challenges facing financial inclusion in the region include: a weak financial infrastructure; lack of robust regulatory framework and the unwillingness of non-governmental organisations (NGOs) to contribute to financial inclusion programs in the region because of the political and religious conflict in the region. The World Bank's Global Findex Database 2017 was used to analyse **Egypt**'s financial inclusion, as it brings together various indicators of financial inclusion. The results reveal that not all the individual characteristics have a significant relation to financial inclusion. Age has a nonlinear

[20] Abunga Akudugu. M, The Determinants of Financial Inclusion in Western Africa: Insights from Ghana, ISSN, 08, 04, 2013,p 04

relationship, positive and significant, with having a formal account and a credit account. Ironically, Age2 proves insignificant, indicating the carelessness of old Egyptians with regards to financial institutions. As for Education, the higher the educational level of the individual, the more significant financial inclusion becomes. It was found that the higher the income of an Egyptian individual progressively, the higher the level of financial inclusion. The results showed that the lower income group do not recognise the importance or are not financially aware of the significance of the three indicators of financial inclusion. As for gender, Egypt's results reveal that there is no significant relationship between gender and financial inclusion. Being in the workforce is positively associated with having a formal account. In a nutshell, the results reveal that an individual with high progressive income and high educational level have a higher level of financial literacy and awareness and favour access to financial services in Egypt. . it was found that the most significant barrier for financial inclusion in Egypt is lack of money, constitutes the biggest barrier for the older generation, while distance, cost, lack of documentation, trust, and family members with existing accounts are insignificant obstacles. The process of being financially included is not easily understood. Individuals have difficulty to understand the language of financial services as they are offered and marketed, mainly due to the complicated terminology used by financial institutions and a lack of financial literacy. Due to the political and economic turbulence that Egypt has witnessed over the last decade.[21] *(Walid, Nimri et al)* used the World Bank's 2014 Global Findex database which is obtained through surveys realized in more than 140 countries and covering almost 150,000 persons worldwide to realize the analyses and examine the main determinants of financial inclusion. The study showed that women are less likely to report having a formal account in **Jordan**. Moreover, they found significant effects for age, which are positive. Hence there is a nonlinear relation between age and financial inclusion. The results reveal that the more educated adults are the more likely to be financially included. Hence, the ownership of a formal account could be improved by dismantling obstacles related to gender, income and education, all of which found more long-run issues.[22]

[21] Rashdan.A and Eissa.N, The Determinants of Financial Inclusion in Egypt, 11, 01, 2020,p127

[22] Shawaqfeh.W and Al-Nimri.A, The Determinants of financial inclusion in emerging markets "jordanian case", American Journal of Business Studies, 1, 1, 2020, p35

3 Determinants of financial inclusion in Latin America and Europe

In Europe, financial inclusion is achieved primarily by granting access to credit markets to increase the number of borrowers in the credit market and ensuring the stability of the credit market. (Corrado and Corrado, 2015) examine the determinants of financial inclusion across 18 Eastern European economies and 5 Western European countries. They find that households affected by unemployment or income shocks and without any asset to pledge were likely to be financially excluded, especially in Eastern Europe. (*Altarawneh.Y , Al-Nimri.A and Al-Nuaimi.M)* in order to realize the analyses and understand the financial inclusion and its determinants in Latin America and Europe, they used the World Bank's 2014 Global Findex database which covered 140 countries. The study's results reveal that the impact of age is identical for the financial inclusion indicators. They found significant and positive effects for age in **Brazil** and in the other hand this relationship is negative and significant in **Romania**. Hence there is a nonlinear relation between age and financial inclusion. They also observed significantly positive coefficients for Secondary education and Tertiary education for the indicator of financial inclusion in both countries, with higher coefficients for the latter one. Furthermore, they found that income is related to numerous explanations in regards to not having an account. As expected, lack of money explains why poor individuals do not have formal account; poor individuals do not feel the same need to have an account in the household as do rich individuals. In which concern barriers, it was found that the cost of banking services is not perceived to be an obstacle to financial inclusion, as it does not affect the poorest persons' demand. The level of financial inclusion in Brazil and Romania is high relative to comparable countries. Financial inclusion, as measured by the ownership of a formal account, does not create a major problem in either country. Brazilian and Romanian authorities could nonetheless improve the ownership of a formal account by dismantling obstacles related to income and education, all of which found more long-run issues.[23]

4 Determinants of financial inclusion in Asia

In Asia, many countries are employing financial inclusion as an important part of their strategies to achieve inclusive growth. However, access to financial infrastructure is still a problem in Asia despite efforts to address it. This prevents inclusion from being realized. To

[23] Altarawneh.Y , Al-Nimri.A and Al-Nuaimi.M, The Determinants of Financial Inclusion in Latin America and Europe (Brazil and Romania Case), International Journal of Innovation Creativity and Change, 12, 2, 2020, p740

reach a sustainable financial inclusion, more effort is needed to address gaps in the understanding it, particularly the factors influencing access to financial services. (*Fungáčová and Weill, 2015)* analyze the state of financial inclusion in China, and find a high level of financial inclusion in China through greater use of formal accounts and formal savings compared to other BRICS countries. They observe that financial exclusion, i.e. not having a formal account, is mainly voluntary in China. Also, the use of formal credit is less frequent in China than in other BRICS countries because most borrowing in China is done by borrowing money from family or friends. Finally, they find that higher income, better education, being a man, and being older are associated with greater use of formal accounts and formal credit in China. In India, (*Chakravarty and Pal ,2013)* show that social-banking policies played a crucial role in promoting financial inclusion across several states during 1977 to1990 while the move toward pro-market financial sector reform adversely affected the level of financial inclusion in India.

A study by (*Zuzana Fungáčová and Laurent Weill)* used the data on individuals' characteristics in the Global Findex database to examine how these different characteristics are associated with financial inclusion in **China**. The results of the study showed that that having a formal account is related to the individuals' income level. They also found that education is positively associated with the ownership of a formal account. The results revealed that gender exerts an impact on financial inclusion as regards formal account and formal credit. It was shown that age also has a significant effect on financial inclusion. It also supports the view that the cost of banking services is not – or at least is not perceived to be – an obstacle to financial inclusion.[24]

Another explanatory research was conducted **in Indonesia** to provide a picture or a description of financial inclusion level by the society in Bondowoso and Jember regency. The study also found that gender has a negative sign. In addition, the variable age was not statistically significant in influencing the community's financial inclusion. It was found that education factor has a positive sign. It was shown that there is no income gap that affects inclusion; people with different income have the same pattern in reaching financial services. It was shown that distance does not have a significant effect. It was not a major consideration in reaching the community formal financial institutions. Finally, the results showed also that

[24] Fungacova.Z and Weill.L, Understanding financial inclusion in China, BOFIT Discussion Papers, 10, 2014

financial Literacy or understanding of the community to finance was a major factor in determining financial inclusion.[25]

Section Three: The determinants of payment instruments usage in literature

Most of the recent literature investigates how the characteristics of payment instruments affect the choice of instrument. The key characteristics are costs, security, speed, convenience, and acceptability .These characteristics underpin the complementary and substitutionary relationships between the payment choices. In addition, the literature also shows that demographic factors such as age, income, education, and gender also influence payment choices.

1 Region of Africa

In African countries, the trend in financial inclusion remains low, so financial exclusion has remained high since 2009. The majority of African countries (86% of them) have less than half of their population interacting with the financial system; about half of African countries (46% of them) have less than 20% of their population having access to financial services and products. Four (04) countries have at most 10% of their population interacting with their country's financial system (Niger, Guinea, Burundi and Madagascar). Surveys conducted by the IMCE (Institut Mondial des Caisses d'Epargne) have shown that the excluded population in some African countries corresponds to the poor population (70% of the population in Tanzania, 46% in Côte d'Ivoire, 20% in Morocco...are poor).[26]

In sub-Saharan Africa, approximately 60% of the adult population does not use formal financial services (*Demirgüç-Kunt et al., 2018*). Cash is the predominant method of value exchange, as it is easy to use, widely accepted, and ingrained to a user's psyche as having value (*Weichert, 2017*). Moreover, there are obstacles to banking such as distance to bank outlets (and risks when carrying cash), lack of trust, daunting paperwork, and overwhelming identity and documentation requirements (*Realini & Mehta, 2015*). According to (*Demirgüç-Kunt et al., 2018*) research the main force driving financial inclusion in sub- Saharan Africa is

[25] Wardhono.A, Qori'Ah.CG and Indrawati.Y, the Determinants of Financial Inclusion: Evidence from Indonesian Districts, International Journal of Economic Perspectives, 10, 04, 2016, p472-483.

[26] R.M.Kone, "Accélérer l'inclusion financière dans les pays africains ", EMS, 2019, p35

mobile money .Where it has been successful and the market has grown rapidly, for example, increasing from 75 million accounts in 2012 to almost 340 million in 2017. Focusing on a research which studied the comparaison of mobile money with other methods of payment using six indicators of ease, safety, trustworthiness, convenience, speed and cost of usage, A study by *(Jack & Suri, 2011; Mas & Morawczynski, 2009*) affirmed that speed, cheapness, safety, and simplicity characterise the services of mobile money and the vast majority of the respondents represented by 90% and 89% agreed that mobile money is faster and easier than other means of transferring money. The results showed that, for the safety of money transfer using mobile money, 83% confirmed that mobile money is much safer compared with other methods of payment. Additionally, it revealed that mobile money can also be a safer way of storing wealth in various forms particularly during the time of natural disasters, and some mobile money schemes in evolving markets are also being adopted as a form of savings vehicle (OCAIC, 2010). Concerning the convenience of mobile money usage, 81% of the respondents agreed that mobile money is comparatively more convenient than other means of payment. It was found that in terms of financial management, majority of the users affirm that mobile money is useful for financial management. Evidence from the rural area of Africa indicates that the introduction of mobile banking improves financial literacy and trust, while also replacing traditional means of saving and transferring remittances *(Batista & Vicente, 2018).* Moreover, mobile money facilitates financial management by helping customers to achieve financial resilience through saving (*Du, 2019*). Another factor that can influence mobile money users' perception is its usage among friends[27]. About 79% of the respondents reveal that most of their friends use mobile money. Also, the most cited reasons for not using mobile money among non-users are agents being far away and having no one to send money to or receive from.

2 Region of MENA

The use of retail payment instruments differs among countries due to a variety of factors including cultural, historical, economic and legal. However, common trends can be observed, namely: the continued primacy of cash (in volume terms) for face-to-face payments; growth in payment cards use; increased use of direct funds transfers, especially debit transfers, for remote payments; and changes in market arrangements for providing and pricing retail

[27] According to (Uzzi and Lancaster, 2003), close friends are well suited to transfer mobile financial skills because they understand each other's learning needs.

payment instruments and services delivered to end-users. The MENA region is characterized by a heavy use of cash and cheques, which keeps retail payments far from optimal from the point of view of efficiency and risk control. The infrastructure to process retail payment instruments and key policy decisions that affect the safety, soundness and efficiency of the services provided is considered insufficient in the majority of the MENA countries. The number of cashless payment transactions which represents the sum of payment transactions made with cheques, direct credit transfers, direct debits, and payments with debit cards and credit cards per capita in the region is very low, but there is a clear difference between GCC and non-GCC countries. While in most developed countries this figure is usually above 100, in most non-GCC MENA countries there was less than 1 transaction per capita in 2006. With the only exception of Egypt, the number of cashless transactions per capita grew between 2004 and 2006. The impressive growth for Yemen is due to the very recent introduction of payment cards. The number of transactions per capita for GCC countries is 5.7, while in non-GCC countries there were only 0.5 transactions per capita in 2006. Moreover, in the GCC countries the use of cashless payment instruments is growing at a much faster pace (56%) than in the non-GCC countries (22%). Payment card use in MENA is very low in global comparison. While in almost all high income countries around the world there is one payment card or more per every inhabitant, in the MENA region this figure is much lower even for GCC countries. According to the Central Banks that answered to the World Bank Global Payment Systems Survey, payment cards are actually used more for cash withdrawals than as payment instruments. In almost half of the countries in the region there is more than one payment card switch and more than one card processing center or clearinghouse. In principle, this situation may simply reflect the historical structure of the market and may not have any implications for the overall efficiency of payment card systems in the country. However, it has been observed that the multiplicity of card switches and processing centers is related to the lack of interoperability of payment card systems.[28]

3 Latin America and the Caribbean

Despite the widespread adoption of mobile and internet technology, countries in Latin America and the Caribbean (LAC) have not been at the forefront of payment innovation. Relative to other regions, retail payment services in LAC continue to involve high costs for

[28] Cirasino.M and Nicoli.M,Payment and securities settlement systems in the Middle East and North Africa ,2010, p21

end users and be of subpar efficiency, partly reflecting low competition among financial institutions and limited compatibility among different payment solutions. Along with low income levels, high informality and low financial literacy, high costs contribute to limiting the access to electronic and digital payments for large swathes of the region's population. However, conditions in LAC are ripe for a change. Central banks and other public authorities have recently launched important initiatives to improve national payment systems, which complement developments in the private sector. In recent years, the region has seen a sharp rise in the number of fintech firms offering more convenient ways to pay, and big tech firms have begun to integrate payment services into their e-commerce or social media platforms. However, private sector incentives are not always aligned with social goals. Central banks are the ultimate source of trust in money and payments and therefore play a key role in maintaining the safety and integrity of payment systems as well as ensuring that private sector innovation is channelled towards improving competition, consumer protection and financial inclusion, and preserving financial stability (BIS (2020)). Retail payment systems share a number of features. They handle a large volume of low-value individual payments. But they have operational limits. In many countries, payment orders can be placed only on working days during certain hours, and their execution and finalisation normally takes one or more working days. In addition, even when retail payment systems are relatively fast, lack of competition between payment service providers and weak interoperability between existing retail payment mechanisms makes them costly for end users. Combined with other structural factors such as low income levels and poor financial literacy, the result is insufficient access by the population to payment instruments other than cash, which in turn severely restricts access to broader financial services such as credit and insurance. Despite some improvement over recent years, these issues continue to be particularly severe in LAC. Lower levels of interoperability have important implications. They normally translate into higher costs to process a transaction and a longer time for the funds to reach the payee. Additionally, weak interoperability may limit competition among payment service providers (PSPs), mostly banks, thus helping keep high margins on the transactions they process. In LAC, banking competition – as proxied by net interest margins – is among the weakest across regions. All of this translates into fees charged to final users that are the highest among EMEs. Access issues are also evident in cash and cashless payments in LAC. Cash in circulation is relatively high in most of the region's countries and has increased in some in the past few years, although part of the rise may be due to store-of-value motives (*Bech et al ,2018*). High cash use, in turn, goes hand in hand with a low number of cashless payments. On average, people in LAC

countries make 50 cashless payments a year, which is nine times lower than in advanced economies and almost a quarter lower than in other EMEs.[29]

4 Payment habits during the pandemic

A recent research in Italy investigated the dynamic effects of the spread of Covid-19 on a number of high-frequency indicators of payment habits and cash demand. According to the research results, the sanitary emergency and the government measures to contain the diffusion of infection have intensified electronic payments at the point of sale with respect to cash withdrawals, notably by means of contactless cards and e-commerce options. These developments sustained private consumption during the lockdown and the severe recession hitting the economy. Interestingly, these effects seem to be persistent and are still going-on notwithstanding the removal of the lockdown measures. The pandemic, therefore, could represent a structural break in consumer payment habits and a "game-changer" in the process of substitution of the various means of payment in the society. As regard the effect on cash balances, they provided evidence of a rise of banknotes in circulation and an increase in the average transaction value of ATM cash withdrawals. This is related to the impairment in the cash cycle during the lockdown, especially regarding the collapse of lodgments to the central bank, but also call for a potential role played by the precautionary motive in a period of a worsening of the economic outlook. While a proper quantification of such factors remains challenging and left for future research, they argued that ensuring an adequate availability of cash for households and businesses is crucial for a social and economic perspective.[30] Another study conducted in LAC showed that the efforts to improve payment services have received further impetus from the Covid-19 outbreak. Both the volume and value of digital payments have been rising faster than before the pandemic. Many individuals had a strong incentive or no alternative other than to use digital payments during lockdowns, and governments relied on them to disburse social benefits more rapidly and efficiently. Having become more

[29] Viviana Alfonso C, Tombini.A and Zampolli.Z, Retail payments in Latin America and the Caribbean: present and future,2020, p17

[30] Ardizzi.G, Nobili.A and Rocco.G, "A game changer in payment habits: evidence from daily data during a pandemic", Banca d'Italia, 2020, p25 Available at: https://ssrn.com/abstract=3826478

familiar with digital payments, new users might continue to make frequent use of them once the pandemic ends.[31]

Conclusion

Financial inclusion, particularly access and use of payment services has increased over time, yet is still far from universal. Access to basic accounts has been rising, particularly in South Asia (eg India), East Asia (eg China) and sub-Saharan Africa, yet more remains to be done to provide transaction services to all. Lacking a transaction account, 1.7 billion adults globally and hundreds of millions of firms are tied to cash as their only means of payment. Low-income individuals and women are still much more likely to lack access to formal payment services. Even in advanced economies, some groups lack access to bank accounts and the associated payment options. Payments are currently seeing another period of rapid innovation and transformation. The use of e-payments is booming and technology companies as well as financial institutions are investing heavily to be the payment providers of tomorrow. Yet, despite continuing digitalisation, cash in circulation is, in fact, not dropping for most countries. Hence, understanding the factors influencing the access and the usage of payment instruments is more important than ever. For such analysis, more timely, comprehensive and comparable data on the use of cash and e-payments are needed.

[31]Viviana Alfonso C, Tombini.A and Zampolli.Z, Op.cit, p19

Chapter Three:

Determinants of payment instruments access and use in Algeria: Empirical study

Chapter Three: Determinants of payment instruments access and use in Algeria: Empirical study

Introduction

Many central banks have begun to go beyond their traditional narrow mandate for ensuring macroeconomic stability and have become change agents for sustainable economic development. In doing so, proportionate regulation has become a guiding principle for central banks, which considers the implications of financial regulation for both financial stability and financial inclusion.

Owning an account is an important first step toward financial inclusion, but to fully benefit from having an account; people need to be able to use it in safe and convenient ways. This chapter explores people access and use of different payment instruments.

Section one: Presentation of Central bank of Algeria

In this section we will see a presentation of Central Bank of Algeria where we're going to talk about its history, role and organization.

1 History of the Bank of Algeria

It is marked by two major periods, the first marked period by the creation of the Central Bank of an independent Algeria whose mission is to put the first steps of a monetary policy, and a second period of the 1990s with the introduction of Algeria to the market economy.

After independence, the constituent assembly had decided by law 62-144 to create the central bank of Algeria, which became functional on 02 January 1963. After the 1970 reforms, adjustments were made to create more favourable conditions for rigorous control of monetary flows. The Algerian political authorities have decided to entrust banks with the management and control of the financial operations of public enterprises, this has prompted the central bank to modernise its management methods and control instruments throughout the banking system.

From this period, the Algerian banking system was integrated into the financing scheme of the economy. To this end, an expansionary monetary policy was applied by the Central Bank

of Algeria. It was translated by the free use of rediscounts for commercial banks, at a very low rate. The latter granted loans to public enterprises without limits, this has put savings at a disadvantage when banks finance themselves at a significantly low rate.

2 The role and organization of the Bank of Algeria

We will provide an understanding of the missions and structural organization of central bank of Algeria.

2.1 Role and Missions of the Bank of Algeria

- ✓ **Monetary stability**

The Bank of Algeria's mission is to ensure price stability in as a monetary policy objective. It is responsible for monetary circulation, to direct and control, by all means distribution of credit, to regulate liquidity, to ensure the sound management of financial commitments to foreign to regulate the foreign exchange market and ensure security and the soundness of the banking system.

- ✓ **Payment systems**

The Bank of Algeria monitors and ensures the smooth functioning, efficiency and security of payment systems. Rules applicable to payment systems shall be established by means of regulations of the Currency and Credit Council (Conseil de la Monnaie et du Crédit.)

- ✓ **Organization of the foreign exchange market**

The Bank of Algeria organizes the foreign exchange market within the framework of the exchange policy adopted by the Currency and Credit Council, in compliance with the international commitments made by Algeria.

- ✓ **Financial management**

The Bank of Algeria draws up the balance of payments and presents the external financial position of Algeria. In this context, it may ask banks and financial institutions and financial administrations and any person concerned to provide it with any statistics and information it deems useful.

- ✓ **Issue the national currency**

The State delegates exclusively to the Bank of Algeria, the privilege to issue currency, namely banknotes and coins of currency. The Bank of Algeria determines the recognitive signs of a note or a part and lays down the procedures for checking their manufacture and their destruction.

- ✓ **Banking supervision**

The Bank of Algeria shall establish the general conditions under which the Algerian and foreign banks and financial institutions, can be authorized to incorporate and operate in Algeria. It establishes the conditions under which such authorisation may be amended, or withdrawn. The Bank of Algeria also determines all standards that each bank must comply with at all times.

2.2 The functional organisation of the Bank of Algeria

The internal organisation of the Bank of Algeria is structured around the central office of the head office consisting of: Secretary-General of the Money and Credit Council, Secretary-General of the Banking Commission, Organisation and Communication Directorate and 11 Directorates-General. (Annex01)

Section two: An overview of the financial inclusion situation and payment instruments usage in Algeria

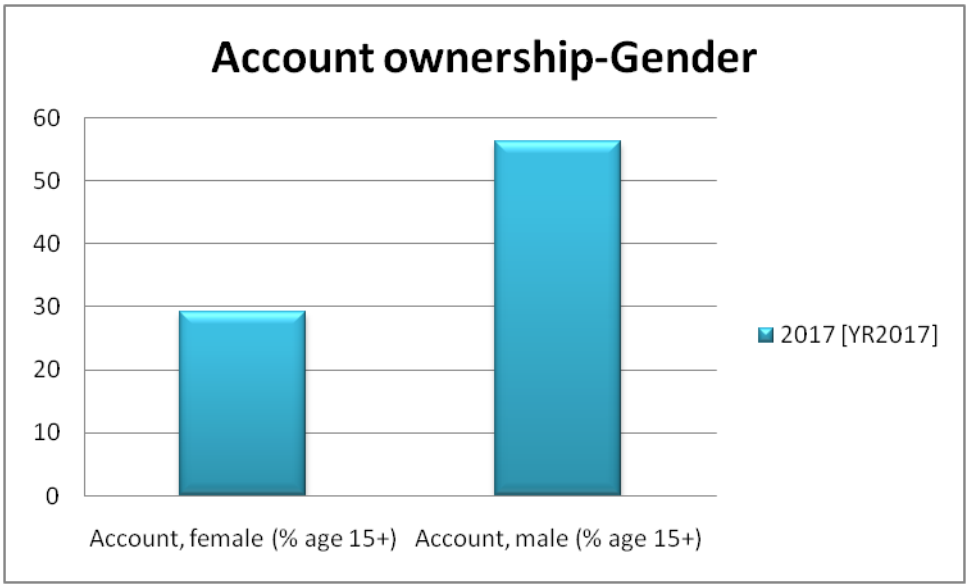
This section represents a descriptive analyse of database showing Algerian's access to banking services (i.e.: Having a bank and /or Postal account) and usage of different payment instruments.

1 Financial inclusion

According to data from the World Bank, the proportion of Algerian adults with a bank account is increasing. However, account penetration levels in Algeria still fall short of the upper-middle-income country average.

As expected, women are still less likely than men to have bank accounts. 56 percent of men have an account compared to 29 percent of women this gender gap has persisted for many years. (Figure02)

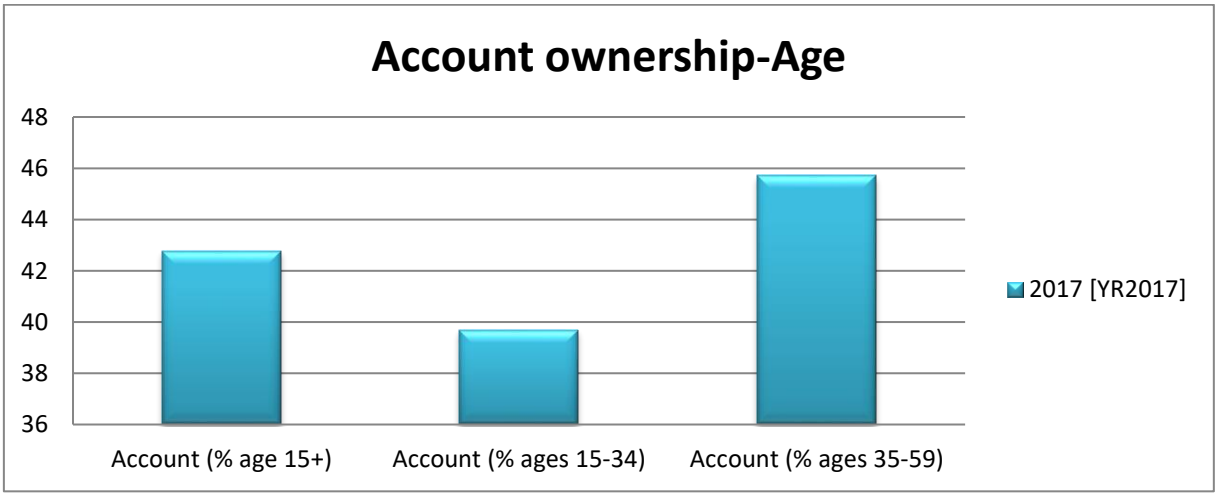
Figure 7: Account ownership-gender



Source: Personal construction based on data from G20 financial inclusion indicators

We can see also that there is a positive and significant relation between Age and financial inclusion; older people are more likely to be financially included. (Figure 07)

Figure 8: Account ownership -Age



Source: Personal construction based on data from G20 financial inclusion indicators

Same thing for the digital payment, According to the 2017 G20 financial inclusion indicators data, 32 percent of men—or 32 percent of account owners—in Algeria reported making or receiving at least one digital payment in the past year compared to approximately 20 percent of women (figure 9).Age seems to have a significant positive relation with the use of digital payment. (Figure10)

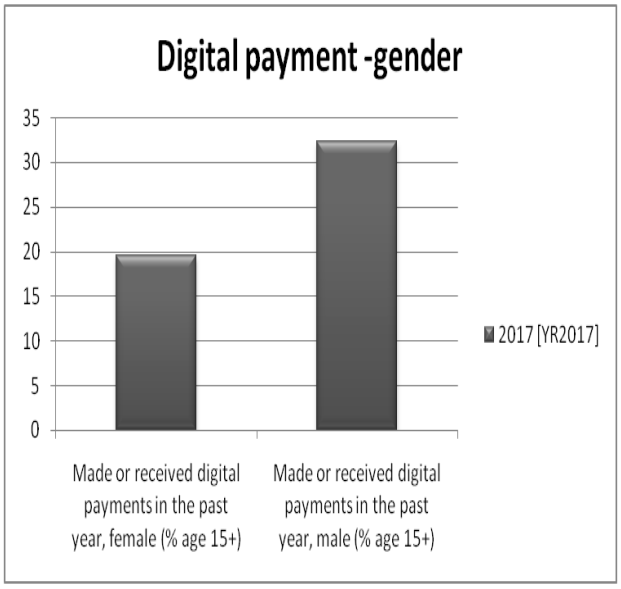


Figure 9: Digital payment-gender

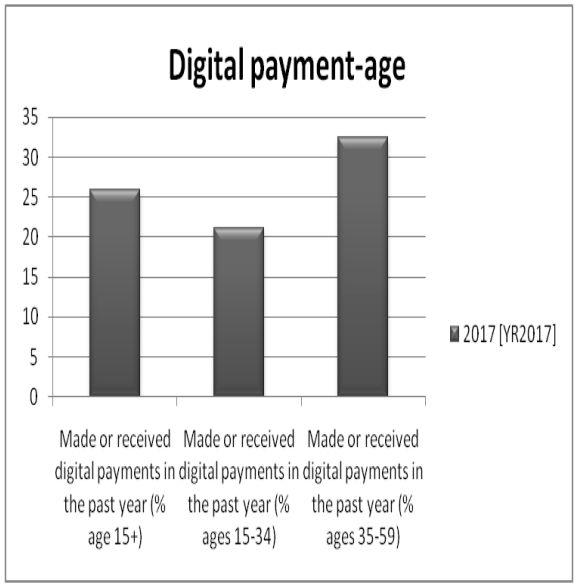


Figure 10: Digital payment-age

Source fig.9&10: Personal construction based on data from G20 financial inclusion indicators

There are 12 million bank accounts in the country, in addition to 20 million CCP account holders of Algeria Post, for only 1.5 million credit card users. A relatively slow rate of integration of the economy into the banking system, that's relative to the leading countries.[32]

As for the number of bank accounts opened for the benefit of customers, it was noted that, because of their density of the network and their geographical proximity to the population, the postal cheque centers (CCP) are remarkably superior to public and private banks. In Algeria, we are not yet talking about the Postal Bank, postal and telecommunications services are limited to postal and financial services, but not to credit activities. This means that having a CCP account will only provide a limited range of financial services for the benefit of clients. It should also be noted that the postal network has put in place all the tools of the new

[32] April 19th 2021, in the forum of the Algerian Radio

communication information technology (electronic, internet...) to facilitate contact with clients (particularly those suffering of remoteness), then expand its spatial coverage to allow the democratization of mass services to the benefit of the excluded from the banking system.

This financial inclusion will allow the Algerian citizen to benefit from various financial services (stock market and insurance services...) it aims to make them accessible, simple and affordable.

2 Payment instruments usage

The introduction of both RTGS and ATCI payment systems has developed the Algerian banks information system allowing inter-connectivity between institutions to achieve the three key objectives: bancarisation (trust, security, and speed), the soundness of the banking system in the age of modernization and competitiveness.

Table 2: Operations treated by instrument

Types of opération		2015	2016	2017	2018	2019	2020
Transfer	Volume	8748018,00	10060687,00	11425603,00	12958174,00	14449273,00	14361320,00
	Valeur	774170887438,00	866095547175,27	946098051684,04	1058290297222,63	1179579432049,33	1208495965834,09
Withdrawls	Volume	4281,00	7349,00	5670,00	4873,00	22567,00	33159,00
	Valeur	1791977171,03	3005796249,33	3377866599,47	3717199061,80	618921504990,37	721720054371,62
Cheques	Volume	8680317,00	8480632,00	8300386,00	8271930,00	8177035,00	7275158,00
	Valeur	14694999809525,10	16353283712295,00	17370058244341,50	15499680879307,90	15664348214672,50	14219561713257,00
Transactions by cards	Volume	3088788,00	2196309,00	2994281,00	3592478,00	4146040,00	12934060,00
	Valeur	29287617976,87	23273058079,75	33092530066,83	42111777074,08	52334572563,56	222588009018,61
negotiable instruments	Volume	234105,00	240529,00	220257,00	203002,00	217478,00	237774,00
	Valeur	391429067950,30	393884387170,85	401124594657,40	413029460056,32	435573014764,01	366354112477,74
Total treated operations	Volume	20755509,00	20985506,00	22946197,00	25030457,00	27012393,00	34841471,00
	Valeur	15891679360061,30	17639542500970,20	18753751287349,20	17016829612722,70	17950756739039,80	16738719854959,10

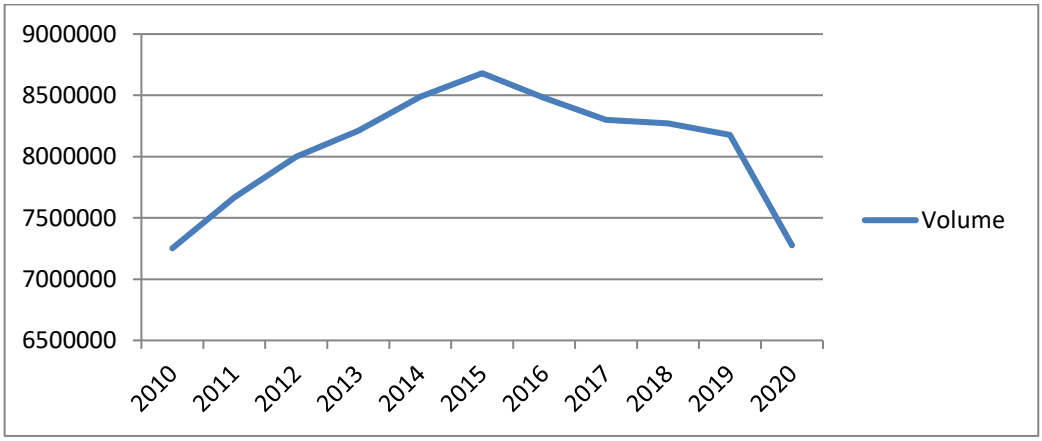
Source : Bank of Algeria, 2020

Recorded transactions increased from 2015 to 2020, In terms of the structure of payments transactions processed in the system, we notice that bank transfers continue to predominate since 2015 with 41% in 2020 (Table 02).This maybe because of the introduction of the ATCI system. For negotiable instruments (bills of exchange and promissory notes), they represent 1, 15 % of the total volume of the means of payment exchanged in the system in 2016 against only 0.6% in 2020.

1.1% for the remainder of the years. However a slight setback was observed in cheques, this accompanied a significant drop in value in 2018. This could be because of the decline in oil

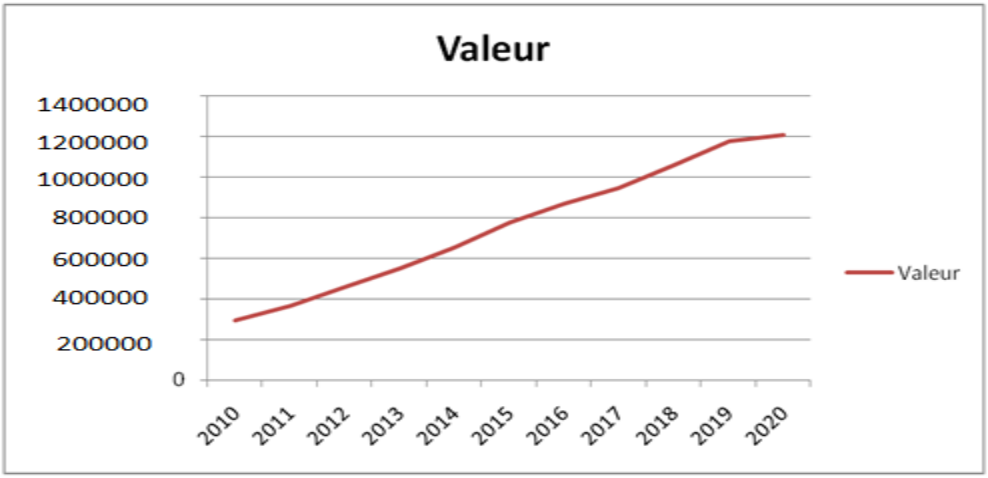
and gas revenues and high import bills. Between July 2014 and February 2016, the price of Brent fell by more than 65%, from 110 to 35 dollars per barrel. (Figure11&12)

Figure 11: Cheque transactions-volume



Source: Personal construction based on data from bank of Algeria

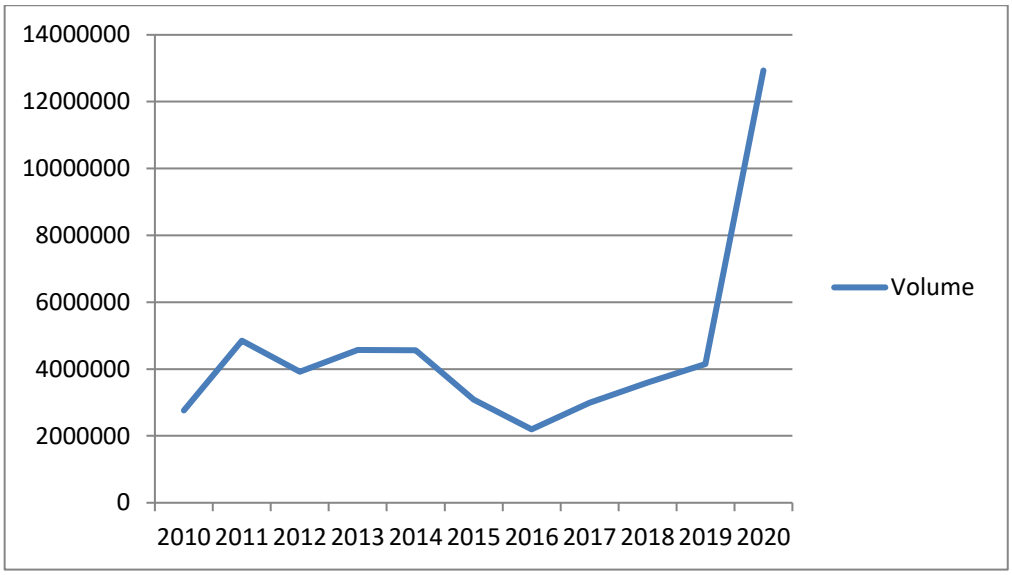
Figure 12: Cheque transactions-Value (in millions)



Source: Personal construction based on data from bank of Algeria

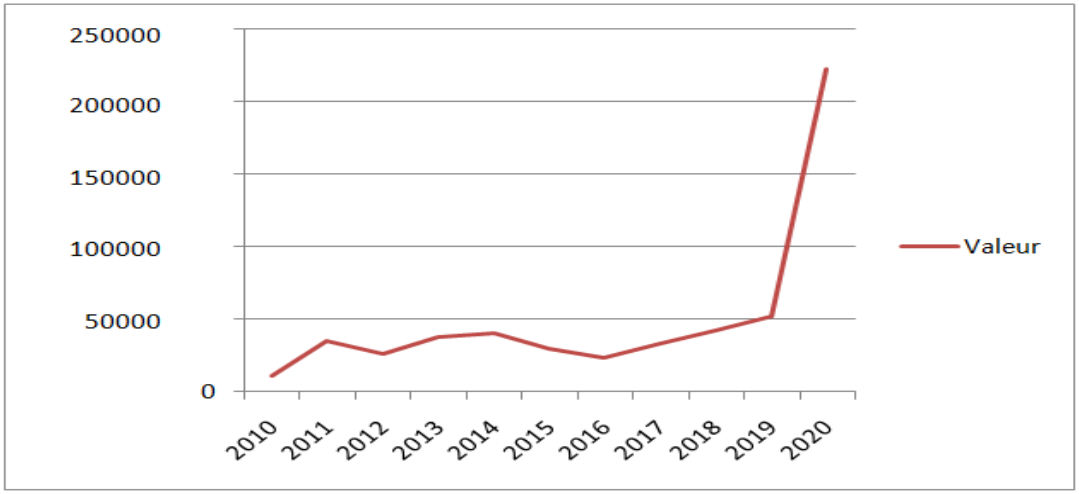
It was also noticed that the volume of cards transactions remains very low and down sharply in 2015 (-32.3%) until late 2016 when card usage has only slightly increased. However cards recorded a significant increase in 2019, the start of the pandemic boosted the use of cards to reach 12934060 transactions in 2020 (Figure13) for the first time which is equal to 222588009018, 61 DZD (Figure14).

Figure 13: Cards transactions- volume



Source: Personal construction based on data from bank of Algeria

Figure 14: Cards transactions –Value (in millions)



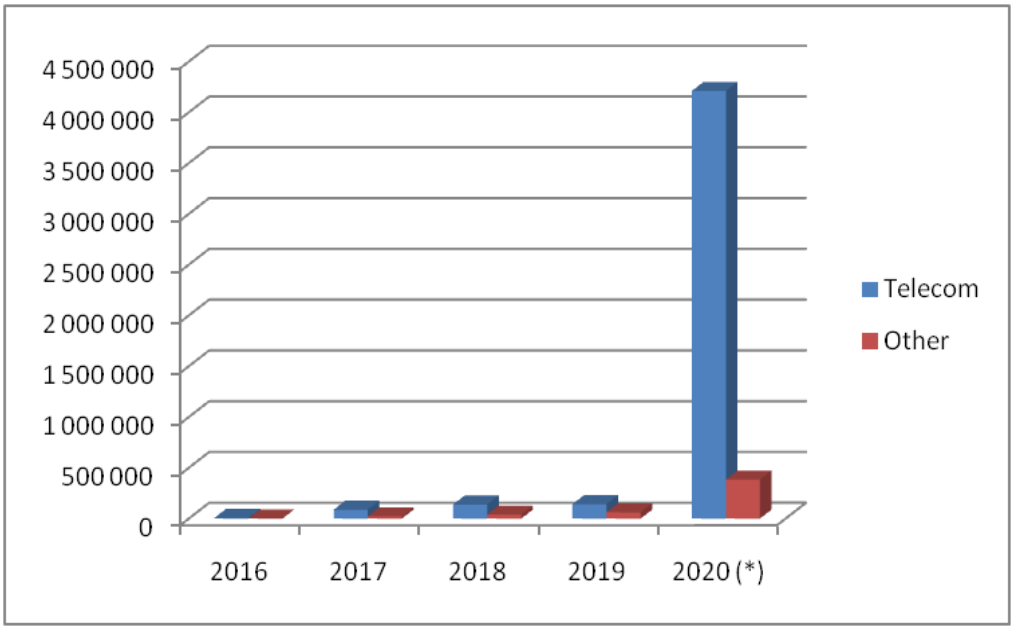
Source: Personal construction based on data from bank of Algeria

Since October 2016, Internet payment by CIB card is officially operational in Algeria. In a first phase, the service has been opened for the big companies: water distribution companies, energy (gas and electricity), mobile telephony, insurance and air transport companies and some administrations. Today, 92 Web merchants are members of the Internet payment system

by interbank card. To date, the total number of transactions, since the launch of payment on the internet, is 7,436,413.[33]

PS: The statistics include the electronic banking activity carried out by the CIB card and the EDAHABIA card starting from 05/01/2020.

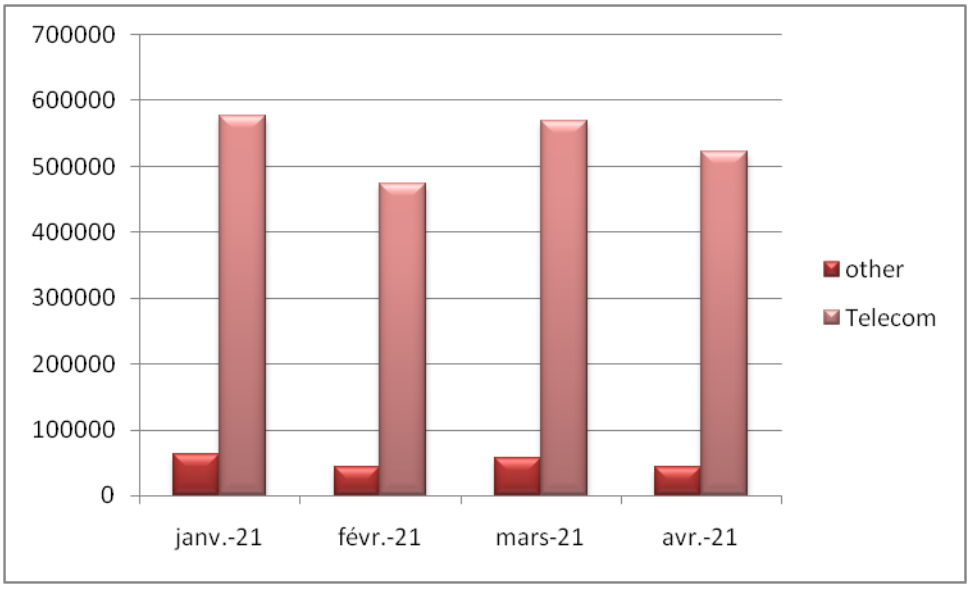
Figure 15: Distribution of internet payment transactions by sector of activity



Source: Personal construction based on data from Bank of Algeria

[33] GIE Monétique, web site : https://giemonetique.dz/qui-sommes-nous/activite-paiement-sur-internet/, Accessed 07/06/2021

Figure 16: Distribution of internet payment transactions by sector of activity-2021



Source: Personal construction based on data from Bank of Algeria

In April 2021, 568,565 internet payments for a total value of 693.865.058.21DZD was recorded, an average of 1226.84 DZD, a decrease from the previous month of March 2021, which recorded 627.064 payments for a total amount of 821.696.674.63 DZD. This may be due to dilution of the quarantine procedures. (Figure16)

The year of 2020 was the best in the history of electronic payment in Algeria, with an annual number of 5.423.727.074.8 DZD; it's the year when we started to see Edahabia card and Bank card statistics combined. (Figure15). It was noticed also that most of this transactions are dominated by Algerian telecommunications and telephone operators, because they simply provide a digital service (Internet connection) which is missing in the Algerian market. (Figure15&16)

Section three: Financial inclusion in Algeria: Empirical study

The aim of this section is to show the first survey's results. In addition, it describes the basic research design and methodology used to conduct the present study, Followed by discussion of data collected. The empirical data was gathered in form of an online questionnaire.

Content and Structure

The survey was divided into four major sections. The first one contains questions to understand the sample characteristics, the second one to measure the access level of

respondents. Moreover, in the third section we asked about the usage frequency of some payment instruments. Finally, the last section includes factors. Some of the factors investigated in the survey were: (i) Perceived security, (ii) Cost, (iii) Convenience, (iii) Acceptance. The survey structure was used in order to eliminate biases in the answers for items that might not be applicable to all participants.

Time and Place

The time span of collecting answers was two months, from April to May 2021. The survey was disseminated in both Arabic and French language. It was distributed by posting it on social media (Facebook, Instagram, LinkedIn and WhatsApp). A total number of 266 answers were gathered.

1 An overview of the online survey

We will see a brief overview of the survey results and try to discuss them later.

Figure 17: Account ownership-CCP

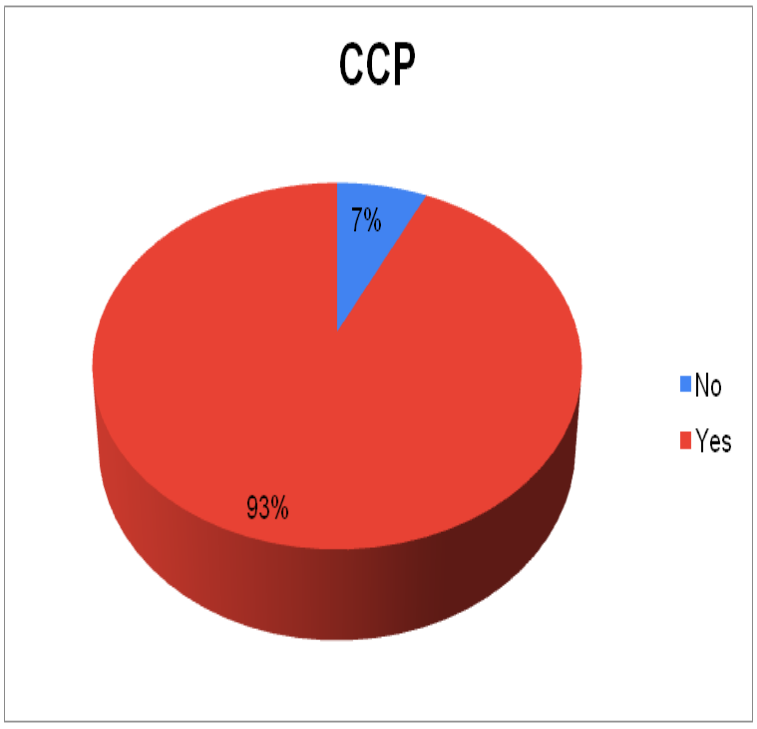
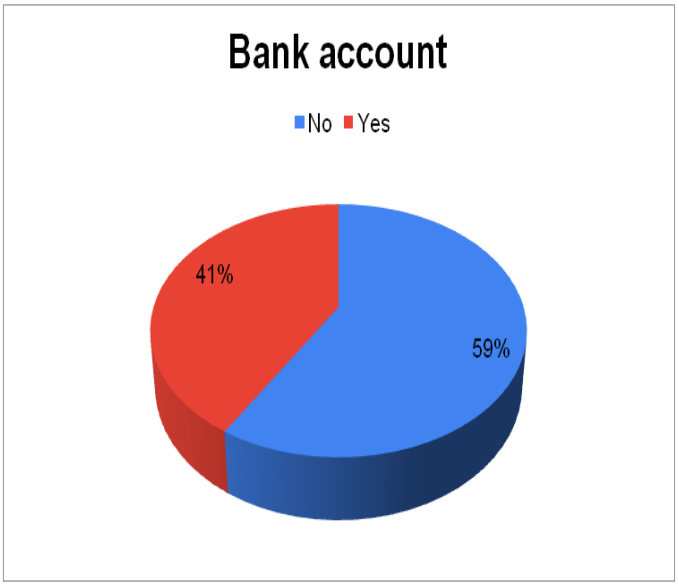


Figure 18: Account ownership-Bank



It becomes visible that majority of respondents have access to a CCP account (93%). This may be explained by the respondents age which range from 18 years old and more, it's the age where people join university and become eligible to work. Hence, receive and transfer money (Figure 17).

In Contrast, access to a bank account seems less but still significant, 41% of respondents have a bank account (Figure 18).

Figure 19: Possession of Edahabia card

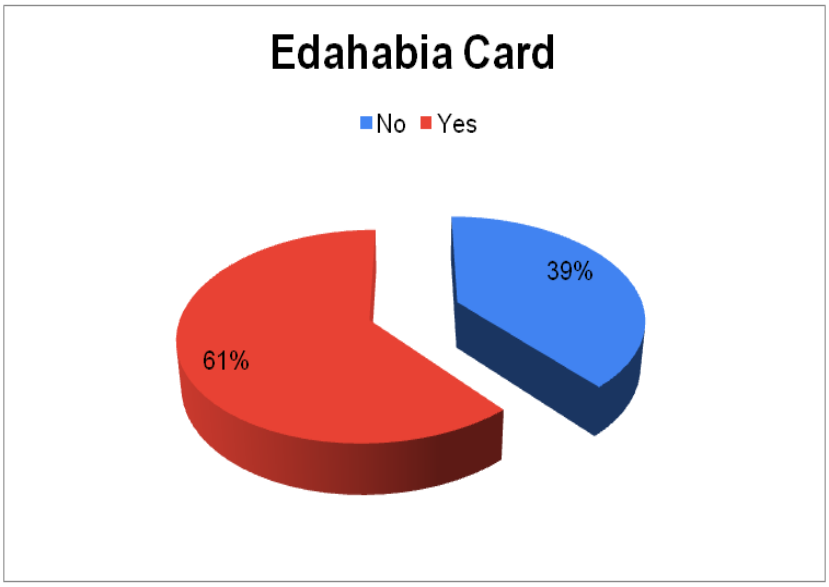
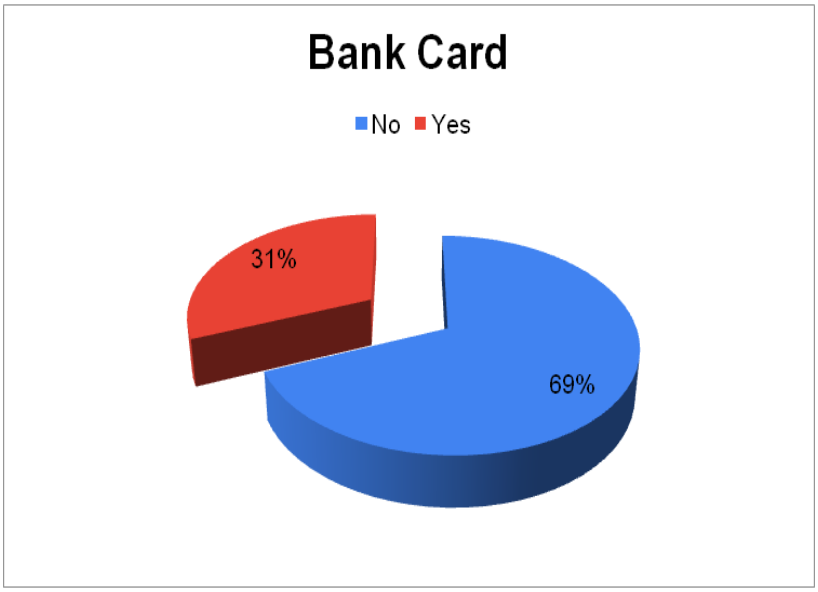


Figure 20: Possession of Bank cards



As shown in (Figure 19) and (Figure 20), 61% of respondents have Dahabia card which represents more than half. Against only 31% who has at least one bank card.

Figure 21: Possesion of e-money account

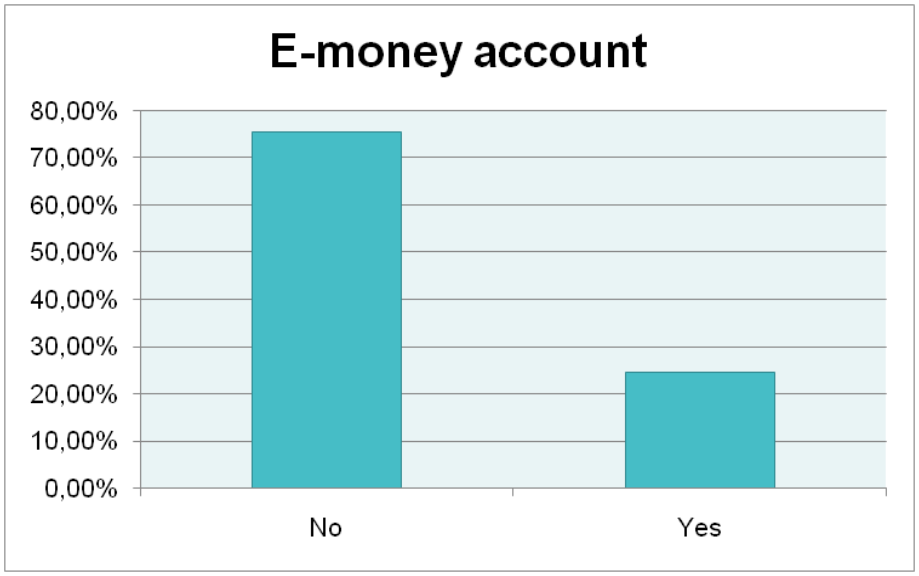
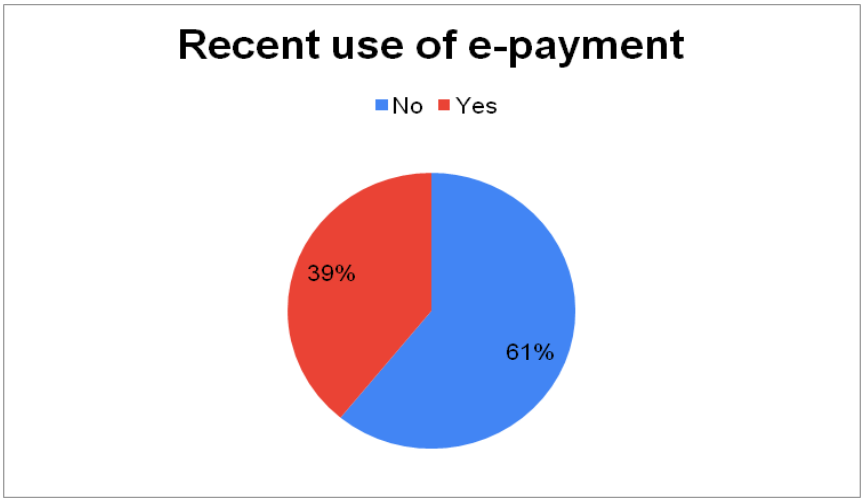


Figure 22: Use of e-payment in the last 12 months



An E-money account is an alternative to a bank account. Like Google Wallet, PayPal, etc…, as shown in (Figure 21), approximately 25% of respondents have access to an e-money account which is significant comparably to bank cards ownership. (Figure 22) represents the

use of e-payment in the last 12 months. The results are confirmed by the data from Bank of Algeria (Section2, Figure8).

Table 3: Account ownership by region

Account Type	Residence					
CCP	**Algiers**	**Center**	**East**	**South**	**West**	**Total**
No	10	3	5	0	1	19
Yes	45	53	66	34	49	247
Total	55	56	71	34	50	266
BANK						
No	23	34	46	27	26	156
Yes	32	22	25	7	24	110
Total général	55	56	71	34	50	266
E-money						
No	40	45	47	28	41	201
Yes	15	11	24	6	9	65
Total général	55	56	71	34	50	266

(Table 03) represents the account ownership distribution by region, where we notice that Algiers (the capital) is different from other cities. It presents approximate percentages – more in some cases- to other regions. However, South region seems to be less included.

Table 4: Card ownership by region

Card Type	Residence					
Edahabia	**Algiers**	**Center**	**East**	**South**	**West**	Total général
No	29	28	21	12	13	103
Yes	26	28	50	22	37	163
Total général	55	56	71	34	50	266
Bank						
No	30	42	50	33	28	183
Yes	25	14	21	1	22	83
Total général	55	56	71	34	50	266

Table 5: E-payment by region

E-payment service	Residence					
CCP	**Algiers**	**Center**	**East**	**South**	**West**	Total général
No	45	43	50	25	26	189
Yes	10	13	21	9	24	77
Total général	55	56	71	34	50	266
E-Banking						
No	35	44	48	29	30	186
Yes	20	12	23	5	20	80
Total général	55	56	71	34	50	266

We asked respondents to rank the importance of each payment feature when deciding which payment instrument to use. Results are shown in (Figure 23).

Figure 23: Features Importance

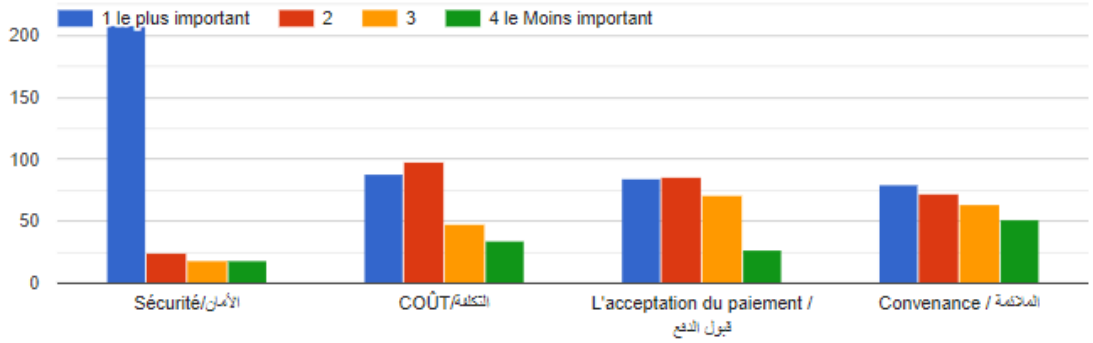
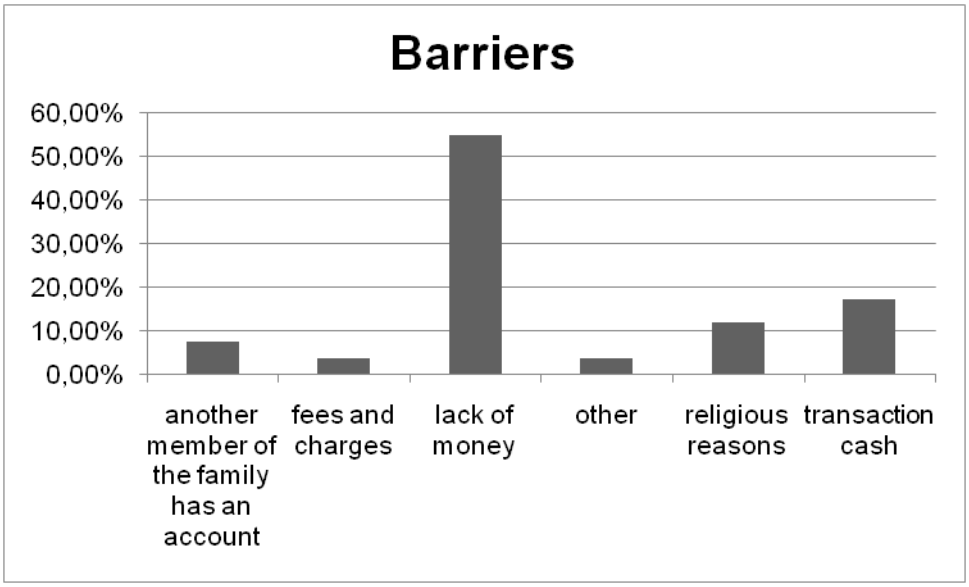


Figure 18 shows that Algerians participants feel that: 1)-Security, 2)- Cost, 3)- Acceptance, 4)-Convenience in this order are the main influencing factors for payment instrument use.

Figure 24: Barriers to financial inclusion



Concerning barriers, (Figure 24) shows that people care more about their lack of money and the fact that transactions are done by cash.

2 Research design and data analysis techniques

After the construction of the questionnaire and the conduct of the survey, an analysis of data will be carried out in three stages. First, starting with a descriptive analysis of the sample.

Then, a Factor Analysis to reduce the large number of variables (factors) into a smaller set. Next, and in order to ensure the reliability of the measuring tools, we calculate Cronbach's Alpha coefficient. Finally, and to test the research hypotheses, a regression analysis will be performed.

2.1 Exploratory Factor Analysis (EFA)

Exploratory factor analysis (EFA) is a widely utilized and broadly applied statistical technique.first,we should evaluate data suitability for EFA , select the variables of the study and the sample size for that, (Hair,Anderson et al. 1995a) suggested that **sample size** should be 100 or greater. we use correlation matrixd to determine the relationships between variables, (Tabachnick and Fidell 2001) recommended inspecting **the correlation matrix** for correlation coefficients over 0.30. next, and before the extraction method There are some tests which must be conducted to examine the adequacy of the sample this can be assesed by examining **the Kaiser-Meyer-Olkin (KMO) and Bartlett's test**, it goes from 0 to 1 and (0.50) is considred appropreiate for FA according to (Hair, Anderson et al. 1995a;Tabachnick and Fidell 2001), Then again, (Netemeyer,Bearden et al. 2003) expressed that a KMO correlation above 0.60 - 0.70 is considered adequate for analyzing the EFA output.Bartlett's test of Sphericity (Bartlett 1950) provides a chi-square output that must be significant ($p<.05$) for factor analysis to be suitable (Hair, Anderson et al.1995; Tabachnick and Fidell 2001). For **the extraction procedure**,Principal Components Analysis (PCA) is the most used because it is the default method in many statistical software (Thompson 2004). According to (Netemeyer, Bearden et al. 2003), If researcher have initially developed an instrument with several items and is interested in reducing the number of items, then the PCA is useful. Moreover, (Pett, Lackey et al. 2003) recommended using PCA in establishing preliminary solutions in EFA.It is computed without regard to any underlying structure caused by latent variables; components are calculated using all of the variance of the manifest variables, and all of that variance appears in the solution (Ford, MacCallum et al. 1986). When the factors are uncorrelated and communalities are moderate it can produce inflated values of variance accounted for by the components (McArdle 1990; Gorsuch 1997). After this phase, the researcher must decide the number of constructs to retain for rotation. **Factor retention** is more important than other phases. , exploratory factor analysis needs to balance parsimony with adequately representing underlying correlations therefore its utility depends on being able to differentiate major factors from minor ones (Fabrigar, Wegener et al. 1999). Factor retentions methods are; Cumulative percent of variance extracted, Kaiser‟s criteria

(eigenvalue > 1 rule) (Kaiser 1960), Scree test (Cattell 1966) and Parallel Analysis (Horn 1965). (Hair, Anderson et al. 1995a) mentioned that the majority of factor analysts commonly use multiple criteria.After that and In order to produce a more interpretable and simplified solution, **rotation** will help by maximizing high item loadings and minimizing low item loadings. Oblique and orthogonal rotations are two types of rotation technique.Finally, the last step is interpretation and labeling of factors which should reflect the theoretical and conceptual intent.

2.2 Reliability Analysis

It provides information about the relationship between individual items in the scale, several models are available like: Split-half, Guttman, Parallel, strict parallel and Conbach's Alpha.

Cronbach's Alpha index measures internal consistency, which is, how closely related a set of items are. It is considered to be a measure of scale reliability. Cronbach's alpha reliability coefficient normally ranges between 0 and 1. The closer Cronbach's alpha coefficient is to 1, the greater the internal consistency of the items in the scale taking in consideration the number of items. George and Mallery (2003) provide the following rules of thumb: "≥ 9: Excellent, ≥8 : Good, ≥7 :Acceptable, ≥6 :Questionable, ≥ 5 Poor and ≥5 – Unacceptable" (p. 231)." [34]

2.3 Regression analysis

Regression analysis is a statistical tool for the investigation of relationships between variables. Usually, researcher seeks to ascertain the causal effect of one variable upon another. Regression analysis can provide insights that few other techniques can. The key benefits of using regression analysis are that it can[35]:

1. Indicate if independent variables have a significant relationship with a dependent variable;

2. Indicate the relative strength of different independent variables' effects on a dependent variable, and

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[34] Joseph A. Gliem, Rosemary R. Gliem," Calculating, Interpreting, and Reporting Cronbach's Alpha Reliability Coefficient for Likert-Type Scales", The Ohio State University,2003, 82-88

[35] M. Sarstedt and E. Mooi, A Concise Guide to Market Research, 194, 2013

3. Make prediction

Regression models are generally noted as follows: $Y_i = \beta_0 + \beta_1 X_{1i+} + \beta_2 X_{2i} + \ldots \beta_k X_{ki} + \varepsilon_i$

Where: The variable Y is termed the "dependent" or "endogenous" variable. And β_0 constant (sometimes called intercept) it indicates what the dependent variable would be if all of the independent variables were zero. The independent variable is indicated by $\beta_k X_{ki}$ where β indicates the coefficient of the independent (or explanatory) variable F and ε = the "noise" term reflecting other factors that influence earnings. [36]

3 Research Results

In this sub-section we are going to state and report the survey's findings respecting the methodology above.

3.1 Description of the sample

The characteristics of the sample covered by the survey are summarized in the table02. It displays the socio-demographic characteristics and personal data of the respondents, showing their gender, age, highest academic qualification, occupation status, average income and residence.

[36] Alan O. Sykes, "An Introduction to Regression Analysis" (Coase-Sandor Institute for Law & Economics Working Paper No. 20, 1993.p25

Table 06: Characteristics of the sample**.**

	Respondants Percentage	Percentage
Gender		
Femme	0	53%
Homme	126	47%
Tot	266	100%
Age		
[18 to 25 yo]	153	57%
[26 to 35 yo]	73	27%
[36 to 50 yo]	36	14%
[more than 50 yo]	4	2%
Education		
University	237	89%
High school	26	10%
Middle school	2	1%
Primary school	1	0%
Tot	266	100%
Income		
<50000 DZD	35	13%
50000 -100000 DZD	72	27%
100000 - 200000 DZD	69	26%
200000 - 300000 DZD	29	11%
300000 - 400000 DZD	14	5%
>400000 DZD	47	18%
Tot	266	100%
Residence		
Algiers	55	21%
Center	56	21%
East	71	26%
West	50	19%
South	34	13%
Tot	266	100%

3.2 Description of variables and revealed factors

The table below represents the different variables and factors considered in the present study.

Table 07: Variables and revealed factors

Variable	Description
Dependent variables	
Bank _Access	Ownership of any type of bank account and/or any type of bank cards.
Bank_Use	Number of bank accounts and cards and their frequency usage.
CCP_Access	Ownership of ccp account .
Dahabia_AcUs	Ownership and frequency usage of Edahabia card.

Epay_AcUs	e-money account ownership and frequency use of online payment including the services offred by bank or post (E-banking , Baridipay…etc.)
Independent variables	
Convenience	The perceived convenience include the speed, capacity to control and ease of use.
Cost	Perceived cost representing fees and expenses, sacrifices and efforts
Security	Perceived security is the extent to which a person believes they're protected against possible cases of fraud and risks of loss of funds…etc.
Acceptance	Perceived acceptance is what consumers think of instrument's acceptance for payment by stores, companies, online merchants, and other people or organisations.
Gender	Take the value 1 if woman 0 otherwise.
Family_Size	The Number of family members living in the same house, we define 03 class interval: FM1:Under 3 members; FM2: [03 to 06]; FM3: 07 or more.
Age	It exists 03 class interval: Age1:[18-25]; Age2:[26-35]; Age3:[36 or more].
Edu_Univ	Level education: taked 1 if they reached university level, 0 if not (e.i: Primary, secondary or high school) .
Residence	Algiers, Center, East, West, South
Status	Represent the profession of the respondent whether Student, Unemployed [Job seeker], Administrative professions, intellectual professions or other status.
Distance	The perceived distance to the nearest bank/post office
Income	The combined total income of all the family members living together in the past 12 months. This includes money from a job, business, farm or rent, interest, and any other income received

	by family members. We define: Income1:[<50000], Income2:[50000-100000], Income3[100000-200000], Income4[200000-300000], Income5[300000-400000], Income6[>400000]
Status	Student (Stud) , Adm(Admistrative jobs), Intelect(intellectual jobs), unemployed (jobseeker), other status
Frequency internet	frequency of internet use

3.3 Determinant of the correlation matrix

Table 8: Determinant of correlation matrix

Variables	Correlation Coefficient
Dependent variables	
Bank_Access	0,006
Bank_Use	0,174
Dahabia_AcUs	0,394
Epay_AcUs	0,444
Independent Variables	
Conv_ModernInstr	0,063
Accept_ModernInstr	0,118
Cost_ModernInstr	0,099
Secure_ModernInstr	0,167
Cost_TraditInstr	0,253
Conv_TraditInstr	0,473
Secure_TraditInstr	0,597
Accept_TraditInstr	0,649

(Table 08) shows that the determinant of correlation matrix for all variables is greater than the recommended value (0.00001) [37] which means that there is no multicollinearity.

3.4 The Kaiser-Meyer-Olkin (KMO) and Bartlett's test

(Table 09) represents the results of KMO and Bartlett's test. The outputs show that the value of KMO for all variables is greater than (0.50) which is considered appropriate for FA. Also,

[37] Field, A, Discovering Statistics using SPSS for Windows. London – Thousand Oaks – New Delhi: Sage publications, 2000,45

Bartlett's test of Sphericity has a significance value of (0.000) for all variables. Hence, the adequacy for the study.

Table 9: KMO and Bartlett's Test

Variables	KMO Test	Bartlett's Test
Dependent variables		
Bank_Access	0,515	0.000
Bank_Use	0,723	0.000
Dahabia_AcUs	0,5	0.000
Epay_AcUs	0,69	0.000
Independent Variables		
Conv_ModernInstr	0,84	0.000
Accept_ModernInstr	0,793	0.000
Cost_ModernInstr	0,814	0.000
Secure_ModernInstr	0,807	0.000
Cost_TraditInstr	0,693	0.000
Conv_TraditInstr	0,662	0.000
Secure_TraditInstr	0,62	0.000
Accept_TraditInstr	0,561	0.000

3.5 The extraction and retention procedures

3.5.1 The extraction procedure

Principal component analysis (PCA) was used for extraction method for factor analysis. For all variables previously cited the results revealed only one factor.

3.5.2 The retention procedure

We have used both of Cumulative percent of variance extracted and the Scree test to decide how many constructs to retain. The following table summarizes the results.

Table 10: Total variance of revealed factors

Variables	% Of total variance
Dependent variables	
Bank_Access	59,688
Bank_Use	81,539
Dahabia_AcUs	88,923
Epay_AcUs	53,498
Independent Variables	
Conv_ModernInstr	78,404
Accept_ModernInstr	71,654
Cost_ModernInstr	74,481
Secure_ModernInstr	69,305
Cost_TraditInstr	76,95
Conv_TraditInstr	66,923
Secure_TraditInstr	60,681
Accept_TraditInstr	56,752

3.6 Rotation and Labeling procedures

In the present study, we didn't select any rotational method since the entered variables relay on only one factor. Concerning labeling, we provided meaningful names which refer to the variables loading on the factor.

3.7 Reliability and measurement tools

To ensure the reliability of the multi-item (constructed) measurement tools adopted, the Cronbach's Alpha coefficient was calculated (Table 11) depicts a summary of the Alpha scores of the factors.

Table 11: Cronbach's Alpha scores

Variables	Items	Cronbach's Alpha	Sig
Dependent variables			
Bank_Access	6	0,863	Good
Bank_Use	3	0,808	Good
Dahabia_AcUs	2	0,646	Questionable
Epay_AcUs	4	0,706	Acceptable
Independent Variables			
Conv_ModernInstr	4	0,906	Excellent
Accept_ModernInstr	4	0,866	Good
Cost_ModernInstr	4	0,883	Good
Secure_ModernInstr	4	0,843	Good
Cost_TraditInstr	3	0,843	Good
Conv_TraditInstr	3	0,745	Acceptable
Secure_TraditInstr	3	0,676	Questionable
Accept_TraditInstr	3	0,609	Questionable

3.8 Regression analysis of payment instruments access and usage dependent variables

We have conducted five (05) models; the following is a discussion of the results obtained.

3.8.1 Model One results

Below (table 12) represents the analysis regression results of the dependent variable “Bank Access”.

A significant negative relation was found between gender and “bank access”. A significance value of (0.002) shows that there is a gap between male and female access to bank services. This is confirmed by several researches, (Demirgüç-Kunt et al. 2013) find that a significant gender gap exists in account ownership, formal saving and formal credit. This finding can be explained because males are considered as the main breadwinners thus, have more opportunities in access to finance.

Residence also reported a significant value of (0.012). “South” showed a negative relation which means that those who live in the south are less likely to access to bank services. However, “Algiers” has a positive relation with a significance level of 10%. The findings are consistent with those by (Yorulmaz (2016) and Kempson and Whyley (2001) who found rural population size to have a negative relationship with financial inclusion. Age seems to have a statistically significant positive impact on “Bank access”. It also increases the tendency to use bank services.In fact, “Age3” has a significance value of (0,001). This means that the increase by one unit in this variable will increase the possibility of accessing to bank services by 0.548. This result is supported by (Allen et al. 2016) who found that the probability of owning an

account at a formal financial institution is higher for older individuals. As it can be seen in (table 07), "student" is highly significant and has a negative relation with bank access which means that being a student reduces the possibility of accessing to bank services. This result is confirmed by (Kumar 2013) who examined the status of financial inclusion and found that employee proportion is a key determinant of financial inclusion. Whereas, family size showed a highly positive effect, if the family members increase by one unit this leads dependent variable to increase by (0.657). At a significance level of 10%, Income is considered as a determinant factor which positively affects the access to financial services. (Kohli,2013) in his research found income to have a significant influenceon the level of financial inclusion. The security of traditional payment instruments "Sec_TraditInstr" resulted important by value of (0.033) .This indicates that security is a predominant factor to determine the level of consumers' access to bank services in Algeria. The result is supported by (Scott Schuh and Joanna Stavins ,2015) who found that security enhancements are more likely to increase the consumer's access.

It should be stated that some socio-demographic variables such as education, In addition to some payment instruments features (cost, convenience and acceptance) and Distance didn't show any significance.

Table 12: Coefficient table

Coefficients

Variables	B	Erreur standard	t	Sig,
(Constante)	0,425	0,214	1,986	0,048
gender	-0,374	0,118	-3,182	0,002
Algiers	0,217	0,127	1,706	0,089
South	-0,421	0,155	-2,724	0,007
Age3	0,548	0,157	3,499	0,001
Edu_Univ	0,086	0,162	0,532	0,595
Student	-0,512	0,119	-4,306	0,000
Distance bank	-0,067	0,041	-1,620	0,106
Family_Size1	0,657	0,175	3,749	0,000
Income1	-0,275	0,160	-1,716	0,088
Income6	0,229	0,134	1,705	0,090
Conv_ModernInstr	0,042	0,069	0,605	0,546
Accept_ModernInstr	-0,067	0,064	-1,049	0,295
Cost_ModernInstr	0,057	0,066	0,866	0,387
Secure_ModernInstr	-0,047	0,064	-0,738	0,461
Cost_TraditInstr	-0,094	0,071	-1,325	0,186
Conv_TraditInstr	-0,075	0,070	-1,077	0,282
Secure_TraditInstr	0,140	0,065	2,142	0,033
Accept_TraditInstr	0,040	0,068	0,586	0,558

Variable dépendente: Bank_Access

Table 13: ANOVA test

ANOVA[a]

Modèle		Somme des carrés	ddl	Carré moyen	F	Sig.
1	Régression	112,151	18	6,231	10,069	,000[b]
	Résidu	152,849	247	0,619		
	Total	265,000	265			

a. Variable dépendante : Bank_Access

b. Prédicteurs : (Constante), Accept_TraditInstr, Distance bank, Family_Size1, Edu_Univ, South, Age3,

Table 14: Model summary

Récapitulatif des modèles

Modèle	R	R-deux	R-deux ajusté	Erreur standard de l'estimation
1	,651[a]	0,423	0,381	0,78665207

a. Prédicteurs : (Constante), Accept_TraditInstr, Distance bank, Family_Size1, Edu_Univ, South, Age3, Income6, Algiers, Income1,

(Table 13 and 14) provide details about the characteristics of the model. R represents the correlation between the dependent and independent variable. In the present case, it's equal to (.651) which is good. R-square shows the total variation for the dependent variable that could be explained by the independent variables with value of (0.423). F-statistic of ANOVA (10.069) result recognizes significance of the model, and its probability value 0.000. So, the study affirmed that the test is statistically significant.

3.8.2 Model Two results

(Table 15) represents the significance of independent variables on the dependent variable "Bank_Use".

The results reveal that cost and convenience of traditional payment instruments is significant at 5%, 10% respectively and associated to the use of financial services negatively. This means, for every unit increase in the predictor variable "Cost_TraditInstr", "Conv_TraditInstr" the outcome variable will decrease by (-0.151), (-0.128) respectively. We note that residence has also an important impact at a significance level of 0.5%. "South" is statistically significant, with a value of (0.002) and negatively associated. Living in the south reduces the chances of using bank services. Moreover, Family size has a positive effect and showed a high significance value of (0.000), the bigger family is, the higher probability to use bank services. These results are supported by Siddik et al. (2015) who studied the determinants of financial inclusion in Bangladesh and the study established that rural population and household size were significant variables among the socio-geographic variables. The result of regression analysis (Table 15) unraveled that with the increase in the age of consumers, use of banking services increases gradually. As observed "Age3" has a significance value of (0.004) which is good. However, Gender is negatively associated to the use of bank services. Men are more likely to use bank services than women. Concerning the variable income, the relationship with the use of bank services is also interesting; the results show a positive signification where an increase of 1% in income drives

an increase of bank services usage by (0.353). A relationship between status and the use of bank services is also visible with a high significance value of (0.000). Being a student reduces the probability of using bank services by (-0.524). Distance to bank is found to have a negative relationship with the probability of bank services usage. These results are supported by a number of studies. (Stavins 2018) indicated that consumer preferences are correlated with demographic and income attributes. Based on the results below, we find that Education and internet frequency usage have no significance. Moreover, Acceptance, Cost, security of modern payment instruments in addition to Acceptance and security of traditional instruments aren't determinants factors of Bank_Use.

Table 15: Coefficient Table- M2

Coefficients

Variables	B	Erreur standard	t	Sig,
(Constante)	0,845	0,482	1,752	0,081
gender	-0,307	0,121	-2,536	0,012
South	-0,490	0,156	-3,133	0,002
Age3	0,476	0,165	2,889	0,004
Edu_Univ	0,236	0,165	1,430	0,154
Student	-0,524	0,122	-4,300	0,000
Distance bank	-0,084	0,042	-2,005	0,046
Family_Size1	0,628	0,178	3,531	0,000
Income6	0,353	0,136	2,601	0,010
Conv_ModernInstr	0,122	0,071	1,725	0,086
Accept_ModernInstr	-0,075	0,066	-1,138	0,256
Cost_ModernInstr	0,071	0,069	1,040	0,299
Secure_ModernInstr	-0,052	0,066	-0,790	0,430
Cost_TraditInstr	-0,151	0,073	-2,066	0,040
Conv_TraditInstr	-0,128	0,072	-1,786	0,075
Secure_TraditInstr	0,098	0,067	1,466	0,144
Accept_TraditInstr	-0,020	0,070	-0,278	0,781
frequency-internet	-0,135	0,114	-1,189	0,235

Variable dépendente: Bank_Use

Table 16: ANOVA-M2

ANOVA[a]

Modèle		Somme des carrés	ddl	Carré moyen	F	Sig.
1	Régression	101,085	17	5,946	8,996	,000[b]
	Résidu	163,915	248	0,661		
	Total	265,000	265			

a. Variable dépendante : Bank_Use

b. Prédicteurs : (Constante), frequency-internet, Conv_ModernInstr, Income6, Distance bank, Edu_Univ, Family_Size1, South, Student, Secure_TraditInstr, Accept_ModernInstr, Cost_ModernInstr, Age3, gender,

Table 17: Model 2 summary

Récapitulatif des modèles

Modèle	R	R-deux	R-deux ajusté	Erreur standard de l'estimation
1	,618[a]	0,381	0,339	0,81298700

a. Prédicteurs : (Constante), frequency-internet, Conv_ModernInstr, Income6, Distance bank, Edu_Univ, Family_Size1, South, Student,

(Table 17) above, shows that the dependent variable "Bank_Use" could be explained by a total variation of (0.381). (Table 16) shows the value of F-statistic of ANOVA (8.996) and its probability value (0.000) this means that that the model is effective enough to determine the relationship.

3.8.3 Model Three results

(Table18) reveals the regression analysis results of Edahabia card access and use.

Table 18: Coefficient table-M3

Coefficients

Variables	B	Erreur standard	t	Sig,
(Constante)	1,178	0,564	2,088	0,038
gender	-0,180	0,132	-1,362	0,175
Algiers	-0,382	0,142	-2,684	0,008
Age3	-0,185	0,182	-1,013	0,312
Edu_Univ	0,335	0,184	1,825	0,069
Student	-0,599	0,135	-4,433	0,000
frequency-internet	-0,251	0,128	-1,956	0,052
Distance poste	0,000	0,054	-0,008	0,994
Family_Size3	-0,002	0,156	-0,014	0,989
Income6	-0,090	0,148	-0,604	0,546
Conv_ModernInstr	0,038	0,078	0,483	0,630
Accept_ModernInstr	0,056	0,073	0,770	0,442
Cost_ModernInstr	0,032	0,075	0,425	0,671
Secure_ModernInstr	0,075	0,072	1,033	0,303
Cost_TraditInstr	-0,191	0,081	-2,362	0,019
Conv_TraditInstr	-0,141	0,080	-1,769	0,078
Secure_TraditInstr	0,046	0,074	0,618	0,537
Accept_TraditInstr	0,026	0,078	0,327	0,744

Variable dépendente: Dahabia_AcUs

According to the outcomes, Status seems to have a significant importance with value of (0.000). In fact, “Student” showed a negative relation. An increase of 1% in this variable will lead to a decrease of (-0.599) in the probability of having and using Edahabia Card. Whereas, Education has a positive effect at a significance level of 10%, this may be due to the fact that people with higher education were assumed to have better financial literacy and have the ability to access financial information more intensively. Surprisingly, the result showed a negative relation between “Algiers“,” frequency_Internet” “and “Dahabia_AcUs” with a 95%, 90% confidence level respectively. This means, an individual living in Algiers or/and use internet frequently is less likely to have and use Edahabia card. The result indicates that there exists a highly significant association between “Cos_TraditInstr” and “Dahabia_AcUs” with a

significance value of (0.019). If the cost of traditional payment instruments increase by 1% it will reduce the access and use of Edahabia card by (-0.191). Also, Convenience of traditional payment instruments has an impact at a significance level of 10% and is negatively associated. The more convenient traditional payment instrument, the more people are attached and less encouraged to adopt and use new ones like Edahabia card.

Other variables like gender, income, age, distance, family size, have no significance. Cost and convenience of modern payment instruments in addition to acceptance and security of both modern and traditional payment instruments are not significant in explaining the access and use of Edahabia card.

Table 19: ANOVA-M3

ANOVA[a]

Modèle		Somme des carrés	ddl	Carré moyen	F	Sig.
1	Régression	65,078	17	3,828	4,749	,000[b]
	Résidu	199,922	248	0,806		
	Total	265,000	265			

a. Variable dépendante : Dahabia_AcUs

b. Prédicteurs : (Constante), Accept_TraditInstr, Family_Size3, Edu_Univ, Distance poste, Income6, Algiers, gender, frequency-internet, Cost_ModernInstr, Age3, Conv_ModernInstr, Secure_TraditInstr, Student,

Table 20: Model 3 summary

Récapitulatif des modèles

Modèle	R	R-deux	R-deux ajusté	Erreur standard de l'estimation
1	,496[a]	0,246	0,194	0,89785245

a. Prédicteurs : (Constante), Accept_TraditInstr, Family_Size3, Edu_Univ, Distance poste, Income6, Algiers, gender, frequency-internet,

Table 20 shows that the R-square is equal to (0.246) and the adjusted R-square is (0.194). In (table 19) *F*-statistic of ANOVA (4.749) result recognizes significance of the model, and its probability value is (0.000). So, the study affirmed that the test is statistically significant.

3.8.4 Model Four Results

(Table 21) represents the regression analysis of Epay_AcUs.

Table 21: Coefficient table- M4

Coefficients

Variables	B	Erreur standard	t	Sig.
(Constante)	-0,246	0,585	-0,421	0,674
gender	-0,382	0,134	-2,841	0,005
East	0,271	0,136	1,987	0,048
Age3	0,106	0,188	0,565	0,572
Edu_Univ	0,157	0,187	0,841	0,401
Student	-0,207	0,137	-1,503	0,134
frequency-internet	0,136	0,132	1,032	0,303
Distance poste	-0,048	0,062	-0,783	0,434
Distance bank	-0,063	0,053	-1,183	0,238
Family_Size1	0,263	0,203	1,297	0,196
Income6	0,356	0,152	2,343	0,020
Conv_ModernInstr	0,066	0,080	0,825	0,410
Accept_ModernInstr	0,030	0,074	0,412	0,681
Cost_ModernInstr	0,142	0,077	1,848	0,066
Secure_ModernInstr	0,122	0,074	1,658	0,099
Cost_TraditInstr	-0,295	0,082	-3,600	0,000
Conv_TraditInstr	-0,185	0,080	-2,301	0,022
Secure_TraditInstr	0,073	0,076	0,969	0,333
Accept_TraditInstr	-0,045	0,079	-0,574	0,567

Variable dépendente: Epay_AcUs

As expected, there is a highly negative relation between cost, convenience of traditional payment instruments and E-payment adoption and use. At a significance level of 0.1%, 5% respectively. An increase in these variables reduces the odds of paying with digital instruments. This can be due to the substitution services offered. This is supported by the results in previous literature which showed that perceived ease of use have direct effects on behavior intention to use e-paiment, (Arora & Sahney, 2018; Lai, 2017; Mallya & Lakshminarayanan, 2017). As shown in the table above, security of modern payment instruments has a positive effect with a significance level of 10%. Same for cost of modern payment instruments which found surprisingly also associated positively to “Epay_AcUs”.

This means, an increase of one unit in these variables leads to an increase of [Epay_AcUs] by (0.122), (0.142) respectively.

It should be stated that an insignificant relationship between other features of both modern and traditional payment instruments such as "Accept_ModernInstr", "Conv_ModernInstr" and "Accept_TraditInstr" was acknowledged. This shows that perceived acceptance does not determine the level of consumers' adoption and usage of e-payment. Gender exerts an impact on adoption and use of e-payment. It is statistically significant with value of (0.005) and negatively related. This means that women are less likely to adopt and use e-payment. [East] is positively significant at a level of 5%. Living in the east region increases the possibility of access and use of e-payment. The study shows that income has a positive significant impact with a value of (0.020).This means, an increase of 1% in this variable [Income6] increases the chance of adopting and using e-payment by 0.356.

Three of the socio-demographic characteristics, gender, income and residence, were statistically significant. All others demographic predictors such as (age, education, status) were not statistically significant. This indicates that access and use of e-payment is gender, income and residence sensitive. Distance, internet frequency usage and family size didn't show any significance either.

Table 22: ANOVA-M4

ANOVA[a]

Modèle		Somme des carrés	ddl	Carré moyen	F	Sig.
1	Régression	59,953	18	3,331	4,012	,000[b]
	Résidu	205,047	247	0,830		
	Total	265,000	265			

a. Variable dépendante : Epay_AcUs

b. Prédicteurs : (Constante), Accept_TraditInstr, Distance bank, Family_Size1, Edu_Univ, frequency-internet, Income6, gender, East, Cost_ModernInstr, Conv_ModernInstr, Age3, Distance poste,

Table 23: Model 4 Summary

Récapitulatif des modèles

Modèle	R	R-deux	R-deux ajusté	Erreur standard de l'estimation
1	,476[a]	0,226	0,170	0,91112446

a. Prédicteurs : (Constante), Accept_TraditInstr, Distance bank, Family_Size1, Edu_Univ, frequency-internet, Income6, gender, East,

From (Table 23) R-square is (0.226) and the adjusted R-square is (0.170). (Table 22) shows that *F*-statistic of ANOVA (4.012) and its statistic probability value is 0.000. Hence, the study affirmed that the test is statistically significant.

3.8.5 Model five results

In this model, we can't use the linear regression because the predicted variable "CCP_Access" is binary. Hence, we are going to use the logistic binary regression which is an extension of the simple linear regression.

Table 24: Coefficients table-M5

Variables de l'equation

	B	E.S	Wald	Sig.
gender	0,452	0,758	0,355	0,551
Algiers	-3,197	0,819	15,227	0,000
Age1	0,085	1,054	0,007	0,936
Edu_Univ	3,594	0,972	13,669	0,000
Student	-2,200	1,028	4,576	0,032
Distance poste	-0,471	0,293	2,577	0,108
Family_Size3	-0,948	0,978	0,940	0,332
Income6	-1,015	0,716	2,012	0,156
Conv_ModernInstr	-0,806	0,422	3,652	0,056
Accept_ModernInstr	0,627	0,431	2,109	0,146
Cost_ModernInstr	-1,163	0,436	7,122	0,008
Secure_ModernInstr	-0,847	0,389	4,746	0,029
Cost_TraditInstr	0,230	0,386	0,356	0,551
Conv_TraditInstr	0,514	0,385	1,779	0,182
Secure_TraditInstr	-0,070	0,383	0,034	0,854
Accept_TraditInstr	0,195	0,417	0,220	0,639
Constante	4,017	1,204	11,138	0,001

The result of the logistic regression (Table 24) unraveled that "Cost_ModernInstr" "Secure_ModernInstr" and "Conv_ModernInstr" have a significant impact on access to CCP account and associated negatively with it. This means with 1% increase in security cost, and convenience of modern instruments, The probability of owning a CCP Account decrease by (-1.163), (-0.847) and (-0.806) respectively. Based on results in (Table 24) we find that greater education is associated with accessing to a CCP account, "Edu_Univ" have a high

significance value of (0.000) which is excellent. Residence is highly significant at 0.1% but unexpectedly “Algiers” negatively related to “CCP_Access”. Living in the capital reduces the possibility of owning a CCP account.

As it can be seen, “student” are less likely to own a CCP Account, because they are not supposed to have an income source hence, lack of money which play as a major barrier for financial inclusion particularly CCP ownership. This is significant at a level of 5%

Conclusion

Conclusion

This study explores the factors influencing Algerians access and usage of payment instruments.

The level of bancarisation has been supported by the opening of the banking market to competition and diversification of financial products. However, weaknesses and imbalances between supply and demand in levels of access to the formal financial system still exist despite the efforts made by the government. E-payment system in Algeria has shown a slight growth in 2020, but still there has lot to be done to increase its usage. Still majority of the transactions are cash based. So, there is a need to widen the scope of electronic payment, Innovation, customer security and other factors which contribute to strengthen the Epayment system.

We've conducted a survey through social network and collected 266 responses. In order to construct the measures of financial inclusion and unveil the factors we realized an exploratory factor analysis, the results of the regression analysis obtained allowed us to answer our main research questions and hypothesis. The study has established that financial inclusion is driven by Age, Gender, Residence, Status, income, family size, education, cost, security, convenience and acceptance. Of these results, Age, education, income, family size security and acceptance of traditional payment instruments are positively related to financial inclusion. This implies that an increase in any of these variables significantly increases the level of financial inclusion in the country. However, it was found that Cost, convenience and Security of modern payment instruments don't show any effect. The effect of Age, Income, Residence, family size, convenience of modern instruments and cost of traditional payment instruments on the use of bank services was positively significant. In contrast, gender, status [student], residence [South], Distance to bank and convenience of traditional payment instruments showed a negative relationship. Concerning Edahabia card, the results revealed that status [student], gender, cost and convenience of traditional payment instruments and surprisingly internet frequency usage and residence [Algiers] have an inverse impact. Yet, education has been found positively significant in affecting access and use of Edahabia card. From the analysis conducted on the last model, we obtained evidence of a significant positive effect of Income, cost and security of modern instruments and residence [East]. Contrastingly, gender, Cost and convenience of traditional payment instruments showed a negative impact.

There are many options for the future evolution of payments instruments. Rigorous scientific research will be essential for the adequate and systematic assessment of the solutions adopted to ensure, security and affordable cost and, on the other side, convenience that suit users' demands.

Further Research and Limitations

The contribution of this paper may address payment providers that offer or are willing to integrate a payment process. Due to the proven relationship of the investigated factors with the customers' actual system usage, payment providers may adjust their activities in order to overcome the obstacles deriving from the differences in perception in the country.

Banks also should have a deep interest in this topic as the market is showing dynamic changes due to the advancement of information technology. Thus, banks, in order to stay competitive on the market, will need to introduce or improve their financial services in order to satisfy changing customers' demand. Therefore, findings of this paper can be of valuable interest for them.

Primary data in this paper was gathered from Algerian consumers only. Therefore, future research may be done on MENA or MEA regions. While this study implicated how people in Algeria perceive the investigated factors differently, further studies may be conducted on for example: impact of Islamic finance, the possibility of adopting mobile payment and the aspects which may impact consumer's acceptance.

The study was resulted in certain limitation regarding the gathered outcomes. Therefore, longitudinal analysis may be used to gain a more profound understanding. As financial inclusion is still a developing phenomenon, there is little theoretical literature devoted to it and a lack of statistical data, which is a major limitation. In addition some factors like the technological environment of the country was neglected in this study, this includes both the infrastructure arranged and integrated by the government as well as the amount of payment providers and their performance within a market.

It has to be stated that the present study was limited by time and response rate. According to (Fram and Grady (1995)), participants in online surveys tend to show unwillingness to fill out lengthy questionnaires. In fact most of respondents judged the questionnaire to be very long.

References

References

- Abel.S, Mutandwa.L, Le Roux.P, International Journal of Economics and Financial Issues: A review of determinants of Financial Inclusion, 8, 3, 2018, p05
- ABU SEMAN.J, Financial inclusion: the role of financial system and other determinants, Ph.D. Thesis, Salford Business School University of Salford-Salford-United Kingdom, 2016,p24
- Abunga Akudugu. M, The Determinants of Financial Inclusion in Western Africa: Insights from Ghana, ISSN, 8, 4, 2013, p04
- Akinyemi .E.B & Mushunje.A , Determinants of mobile money technology adoption in rural areas of Africa, Cogent Social Sciences, 6,1,2020,p12
- Altarawneh.Y , Al-Nimri.A and Al-Nuaimi.M, The Determinants of Financial Inclusion in Latin America and Europe (Brazil and Romania Case), International Journal of Innovation Creativity and Change, 12, 2, 2020, p740
- Ardizzi.G, Nobili.A and Rocco.G, "A game changer in payment habits: evidence from daily data during a pandemic", Banca d'Italia, 2020, available at: https://ssrn.com/abstract=3826478
- Arora. S, Sahney. S, Antecedents to consumers' showrooming behaviour: An integrated TAM-TPB framework, Journal of Consumer Marketing, 35(4),2018,p 438–450.
- Chakrabarty.KC,Financial inclusion in India,2013
- Cirasino.M and Nicoli.M,Payment and securities settlement systems in the Middle East and North Africa ,2010,p21
- Coffinet and C Jadeau, "Household financial exclusion in the Eurozone: the contribution of the Household Finance and Consumption survey", IFC-National Bank of Belgium Workshop, May 2017; World Bank, Findex; FDIC, National Survey of Unbanked and Underbanked Households.
- European payment council: https://www.europeanpaymentscouncil.eu/news-insights/insight/new-retail-payments-strategy-eu (Accessed : April 24th , 2021)
- Fungacova.Z and Weill.L, Understanding financial inclusion in China. BOFIT Discussion Papers, 10, 2014
- JONKER.N, Payment instruments as perceived by consumers: Result from a household survey,155, 2007,p 284-294
- Joseph A. Gliem, Rosemary R. Gliem," Calculating, Interpreting, and Reporting Cronbach's Alpha Reliability Coefficient for Likert-Type Scales", The Ohio State University, Columbus, OH, 2003,p8-10
- Joseph A. Gliem, Rosemary R. Gliem," Calculating, Interpreting, and Reporting Cronbach's Alpha Reliability Coefficient for Likert-Type Scales", The Ohio State University,2003,p82-88
- Joseph A. Gliem, Rosemary R. Gliem," Calculating, Interpreting, and Reporting Cronbach's Alpha Reliability Coefficient for Likert-Type Scales", The Ohio State University,2003, p82-88
- KONE.R.M, Accélérer l'inclusion financière dans les pays africains, édition management & société, 1, 2019, p20

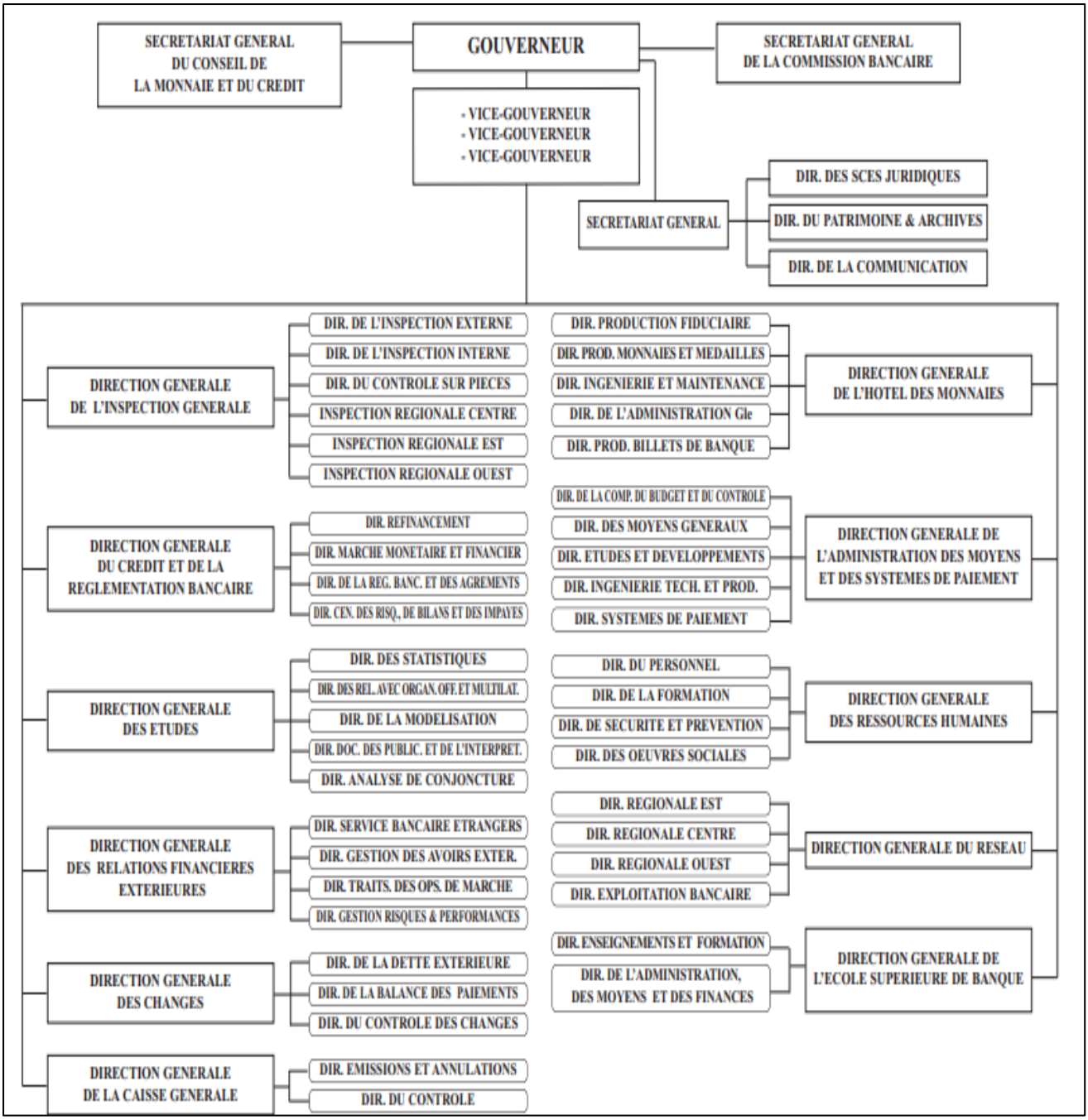
- M. Sarstedt and E. Mooi, A Concise Guide to Market Research, 2013,p194
- Malaguti.M, "Payment System Regulation for Improving Financial Inclusion." CGD Policy Paper 070. Washington,61, 2015, p34
- Morales .Rand Pérez.Y, The Role of Payment Systems and Services in Financial Inclusion(Latin American and Caribbean Perspective),74, 2016, p40
- Noelia Cámara and David Tuesta, Measuring financial inclusion: a multidimensional index, BBVA Research and - Bank of Development for Latin America, 2017,p 5
- Ozili, Peterson K, Financial Inclusion Research Around the World: A Review (January 1, 2020). Forum for Social Economics, 2020, Available at SSRN: https://ssrn.com/abstract=3515515 or http://dx.doi.org/10.2139/ssrn.3515515
- Rangarajan .C, Report of the Committee on Financial Inclusion. The Government of India, 2008
- Rashdan.A and Eissa.N, The Determinants of Financial Inclusion in Egypt, 11, 1, 2020,p127
- Semerikova.E , Payment instruments choice of Russian consumers: reasons and pain points , Journal of Enterprising Communities: People and Places in the Global Economy , 14, 1, 2020,p 22-41
- Source: Shawaqfeh.W and Al-Nimri.A, The Determinants of financial inclusion in emerging markets "jordanian case", American Journal of Business Studies, 1, 1, 2020, p35
- Świecka.B and Simon Grima.S, Factors Affecting the Consumers' Choice of Payment Instrument in Poland, 22, 4, 2019, p179-198
- Tagat, Anirudh, Özmen.M, and Pushpa L. Trivedi, "Consumer Payments Survey of India: A Closer Look at Household Finances and Payment Instruments", Report submitted to NCAER National Data Innovation Centre, New Delhi: National Council of Applied Economic Research,2020,p76
- Villeroy.F.The banque de France, (2018), *Annual Report of the Observatory for the Security of Payment Means 2018,* Available at: https://publications.banque-france.fr/sites/default/files/medias/documents/osmp-2018_en.pdf, (Accessed: April 25th, 2021).
- Viviana Alfonso C, Tombini.A and Zampolli.Z, Retail payments in Latin America and the Caribbean: present and future,2020,p17
- Wardhono.A , Qori'Ah.CG and Indrawati.Y, The Determinants of Financial Inclusion: Evidence from Indonesian Districts, International Journal of Economic Perspectives, 10, 4,2016,p 472-483.
- World Bank "FinancialInclusion,https://www.worldbank.org/en/topic/financialinclusion/overview " (Accessed: April 17th, 2021) Available at: www.econjournals.com

- **Websites and online references**
- Bank of Algeria: https://www.bank-of-algeria.dz/

- DzairDaily: https://www.dzairdaily.com/compte-ccp-algerie-poste-bancaires-chiffres/ (Accessed: April 19Th 2021)
- GIE Monétique: https://giemonetique.dz/
- Office National des Statistiques : https://www.ons.dz/
- SATIM Presentation available at: https://www.satim-dz.com.consulté
- World Bank: https://www.worldbank.org/en/home

Annexes

Annex 1: Organization Chart, December 9th ,2020



Annex 2 : Survey

L'accès et l'utilisation des instruments de paiement en Algérie

Bonjour , nous menons une étude sur le comportement des consommateurs algériens vis-à-vis les instruments de paiements.

Merci de participer avec nous en répondant sur ce questionnaire qui ne vous prendra que quelques minutes.

PS: Vos réponses resteront anonymes et ne seront en aucun cas reliées à vous.

مرحبًا ، نحن نجري دراسة حول سلوك المستهلكين الجزائريين تجاه استخدام وسائل الدفع .

نشكركم على المشاركة معنا من خلال الإجابة على هذا الاستبيان الذي لن يستغرق منكم سوى بضع دقائق.

ملاحظة: ستظل إجاباتكم مجهولة ولن يتم ربطها بكم بأي شكل من الأشكال.

*Obligatoire

1. sexe الجنس *

Une seule réponse possible.

- ◯ Homme
- ◯ Femme

2. Wilaya de résidence /ولاية السكن *

Une seule réponse possible.

- ◯ Adrar
- ◯ Chlef
- ◯ Laghouat
- ◯ Oum El Bouaghi
- ◯ Batna
- ◯ Béjaïa
- ◯ Biskra
- ◯ Béchar
- ◯ Blida
- ◯ Bouïra
- ◯ Tamanrasset
- ◯ Tébessa
- ◯ Tlemcen
- ◯ Tiaret
- ◯ Tizi Ouzou
- ◯ Alger
- ◯ Djelfa
- ◯ Jijel
- ◯ Sétif
- ◯ Saïda
- ◯ Skikda
- ◯ Sidi Bel Abbès
- ◯ Annaba
- ◯ Guelma
- ◯ Constantine
- ◯ Médéa
- ◯ Mostaganem
- ◯ M'Sila
- ◯ Mascara
- ◯ Ouargla
- ◯ Oran
- ◯ El Bayadh
- ◯ Naâma
- ◯ Aïn Témouchent
- ◯ Ghardaïa
- ◯ Relizane
- ◯ El M'ghair
- ◯ El Menia
- ◯ Ouled Djellal
- ◯ Bordj Baji Mokhtar
- ◯ Béni Abbès
- ◯ Timimoun
- ◯ Touggourt
- ◯ Djanet
- ◯ In Salah
- ◯ In Guezzam
- ◯ Illizi
- ◯ Bordj Bou Arréridj
- ◯ Boumerdès
- ◯ El Tarf
- ◯ Tindouf
- ◯ Tissemsilt
- ◯ El Oued
- ◯ Khenchela
- ◯ Souk Ahras
- ◯ Tipaza
- ◯ Mila
- ◯ Aïn Defla

3. L'Age العمر *

Une seule réponse possible.

- ◯ De 18 à 25 ans
- ◯ De 26 à 35 ans
- ◯ De 36 à 50 ans
- ◯ > à 50 ans

4. المستوى الدراسي /Le niveau d'éducation *

Une seule réponse possible.

- ◯ primaire ابتدائي
- ◯ Moyen متوسط
- ◯ Secondaire ثانوي
- ◯ universitaire جامعي

5. Quel est votre catégorie socio-professionnelle ?Si vous êtes employé préciser votre profession (choisissez une catégorie) /اختر (هل انت؟اذا كنت موظف ,حدد نوع وظيفتك؟ إحدى المجموعات *

Une seule réponse possible.

- ◯ Homme ou Femme au foyer رب(ة) منزل
- ◯ Etudiant طالب
- ◯ Demandeur d'emploi باحث عن عمل
- ◯ ouvriers et employés non qualifiés العمال والموظفين غير مؤهلين
- ◯ conducteurs d'installations et de machines et ouvriers de l'assemblage /مشغلي المصانع والآلات وعمال التجميع
- ◯ Agriculteurs et ouvriers qualifiés de l'agriculture et de la pêche المزارعون والعمال في الزراعة والصيد
- ◯ Artisans et ouvriers des métiers de type artisanal /الحرفيون والعمال في الحرف اليدوية
- ◯ Personnel des services et vendeurs de magasin et de marché / موظفي المبيعات والسوق
- ◯ professions intermédiaires /المهن الوسيطة
- ◯ employé de type administratif موظف إداري
- ◯ Membre de l'exécutif et des corps législatifs , cadres supérieure de l'administration publique , dirigeants et cadres supérieure de l'entreprise / عضو في الهيئتين التنفيذية والتشريعية وكبار المديرين التنفيذيين في الإدارة العامة والمديرين التنفيذيين وكبار المديرين التنفيذيين في الشركة
- ◯ Professions intellectuelles et scientifiques المهن الفكرية والعلمية
- ◯ retraitée متقاعد عن العمل

6. فيما يتعلق بأنشطتكم المتفرعة , هل تدخرون دخلكم / Concernant votre (vos) activité(s) rémunérée(s comment épargnez vous *

Une seule réponse possible.

- ◯ une partie régulièrement جزء بشكل بانتظام
- ◯ une partie irrégulièrement جزء منه بشكل غير منتظم
- ◯ je ne peux pas épargner لا استطيع الادخار
- ◯ je peux épargner, mais je le fais pas يمكنني الادخار ، لكنني لا افعل
- ◯ je n'ai pas ليس لدي اي نشاط

7. À quelle fréquence utilisez-vous Internet?/كم مرة تستخدم الإنترنت؟ *

Une seule réponse possible.

- plusieurs fois par jour عدة مرات في اليوم
- au moins une fois par jour مرة واحدة على الأقل في اليوم
- plusieurs fois par semaine عدة مرات في الاسبوع
- une fois par semaine مرة في الأسبوع
- moins souvent غالبا لا استعملها
- jamais لا استعملها

8. المسافة إلى أقرب مكتب بريد لك/Distance a la poste la plus proche de vous *

Une seule réponse possible.

	1	2	3	4	5	
Très proche	◯	◯	◯	◯	◯	Trop loin de chez moi

9. Possédez vous un Compte Courant Postal (CCP) ?/هل تملكون حساب بريدي جاري؟ *

Une seule réponse possible.

- Oui نعم
- Non لا

10. Si "Oui" ,Possédez vous une carte Edahabia ?/اذا كانت اجابتكم ب"نعم", هل تملكون البطاقة الذهبية؟ *

11

Une seule réponse possible.

- Oui نعم
- Non لا

Une seule réponse possible.

- Je n'ai pas une carte Dahabia ليس لدي بطاقة ذهبية
- Tous les jours ou presque كل يوم او تقريبا
- Au moins une fois par semaine على الأقل مرة في الاسبوع
- Au moins une fois par mois مرة واحدة في الشهر على الأقل
- quelque fois par an بضع مرات في السنة

12. هل تستخدمون خدمة الدفع الإلكتروني (بريد نت ,بريد باي)/Utilisez -vous Le service de paiement électronique)(Baridnet,baridpay

Une seule réponse possible.

- Oui نعم
- Non لا

13. Distance a la banque la plus proche de vous/المسافة إلى أقرب بنك لك *

Une seule réponse possible.

	1	2	3	4	5	
Très proche	◯	◯	◯	◯	◯	Trop loin de chez moi

14. Possédez vous un compte bancaire? /هل تملكون حساب بنكي؟ *

Une seule réponse possible.

- oui
- non

15. Si oui , combien? /اذا كانت اجابتكم بنعم, كم لديكم من حساب بنكي؟ *

Une seule réponse possible.

- 1
- 2
- 3
- plus que 3 اكثر من ثلاثة
- aucun لا املك حساب بنكي

16. Si oui , quel type ?/ اذاكانت اجابتكم بنعم, ما نوع الحساب؟ *

Plusieurs réponses possibles.

- je n'ai pas de compte bancaire , ليس لدي حساب بنكي
- Compte bancaire courant الحساب الجاري
- compte épargne حساب التوفير / le compte à terme حساب الودائع الأجلة

17. Si non, pourquoi ?(SI Autre ,veuillez préciser s'il vous plait) / إذا كانت اجابتكم ب "لا" ,لماذا؟ (اذا كان سببا آخر يرجى تحديده) *

Plusieurs réponses possibles.

- j'ai un compte bancaire , لدي حساب بنكي
- Je n'ai pas d'argent /petite somme ليس لدي مال او اتعامل بمبالغ صغيرة
- Les transactions sont faites en espèces تتم معظم المعاملات نقدا
- Pour des raisons religieuses لأسباب دينية
- Frais bancaires, taux d'intérêt...etc.
- quelqu'un d'autre dans la famille en a déjà un شخص اخر في الأسرة لديه واحد

Autre : ◯ _____

18. Utilisez-vous le service du banque électronique?/هل تستخدمون خدمة البنك الإلكتروني؟ *

Une seule réponse possible.

- Oui نعم

19. Si Oui ,Que pensez-vous du niveau de sécurité offert par ce service ?/اذا كانت اجابتكم بنعم,ما رأيك في مستوى الأمان الذي توفره هذه الخدمة؟ *

Une seule réponse possible.

	1	2	3	
Faible	◯	◯	◯	Bon

20. هل تملكون بطاقة بنكية؟/?Possédez vous une carte bancaire *

Une seule réponse possible.

- Oui نعم
- Non لا

21. Si Oui , Quel type de carte bancaire ?/اذا كانت اجابتكم بنعم,ما نوع بطاقتكم البنكية؟ *

Plusieurs réponses possibles.

- Carte de paiement بطاقة الخصم
- Carte de crédit بطاقة الإئتمان
- je n'ai pas de carte bancaire ليس لدي بطاقة بنكية

22. Si Oui , À quelle fréquence utilisez-vous une carte bancaire?/اذا كانت اجابتكم بنعم كم مرة تستخدمون بطاقتكم البنكية؟ *

Une seule réponse possible.

- Je n'ai pas une carte bancaire ليس لدي بطاقة بنكية
- Tous les jours ou presque كل يوم او تقريبا
- Au moins une fois par semaine على الأقل مرة في الاسبوع
- Au moins une fois par mois مرة واحدة في الشهر على الأقل
- quelque fois par an بضع مرات في السنة

23. L'utilisation des cartes bancaires améliore la qualité de vos transactions /يزدي استخدام البطاقات البنكية إلى تحسين جودة معاملاتكم *

Une seule réponse possible.

	1	2	3	4	5	
Pas du tout d'accord	◯	◯	◯	◯	◯	tout a fait d'accord

24. Avez-vous un compte dans l'un des services de paiement en ligne non bancaires suivants?)PayPal / Google Wallet /Autre (هل لديك حساب في أي من خدمات الدفع عبر الإنترنت (غير المصرفية التالية؟)PayPal / Google Wallet أخرى *

Une seule réponse possible.

◯ Oui نعم
◯ Non لا

25. Au cours des 12 derniers mois, avez-vous utilisé un service de paiement en ligne (bancaire/non bancaire) pour effectuer un achat ou payer une autre personne?/ خلال الاثني عشر شهرًا الماضية ، هل استخدمت خدمة الدفع عبر الإنترنت (بنكية / غير مصرفية) لإجراء عملية شراء أو الدفع لشخص آخر؟ *

Une seule réponse possible.

◯ Oui نعم
◯ Non لا

26. Sécurité/الأمان *

Pour chaque question ci-dessous, veuillez noter les caractéristiques de tous les moyens de paiement, même si vous n'avez pas ou n'utilisez les tous./لكل سؤال أدناه ، يرجى تقييم خصائص جميع طرق الدفع ، حتى لو لم يكن لديك / لا تستخدمها.

Une seule réponse possible par ligne.

	Très risqué / خطر جدا	Risqué / خطر	Ni risqué ni sécurisé/ليست محفوفة بالمخاطر ولا آمنة	Sécurisé/ آمن	très sécurisé آمن جدا/
Espèces / نقدا	◯	◯	◯	◯	◯
Le chèque bancaire ou postal/شيك مصرفي أو بريدي	◯	◯	◯	◯	◯
Le virement/ التحويل المصرفي	◯	◯	◯	◯	◯
Carte Dahabia /البطاقة الذهبية	◯	◯	◯	◯	◯
Carte de débit /بطاقة الخصم	◯	◯	◯	◯	◯
Carte de crédit /بطاقة الائتمان	◯	◯	◯	◯	◯
E-paiement (e-Banking, applications mobiles...)/الدفع الإلكتروني (الخدمات المصرفية الإلكترونية ، تطبيقات الهاتف المحمول ...)	◯	◯	◯	◯	◯

27. COÛT/التكلفة *

Une seule réponse possible par ligne.

	Coût très élevé / تكلفة عالية جدا	Coût élevé/ تكلفة عالية	Coût ni élevé ni faible/ليست عالية ولا منخفضة التكلفة	Cout faible/ تكلفة منخفضة	Coût très faible /تكلفة منخفضة جدا
Espèces / نقدا	◯	◯	◯	◯	◯
Le chèque bancaire ou postal/شيك مصرفي أو بريدي	◯	◯	◯	◯	◯
Le virement/ التحويل المصرفي	◯	◯	◯	◯	◯
Carte Dahabia / البطاقة الذهبية	◯	◯	◯	◯	◯
Carte de débit / بطاقة الخصم	◯	◯	◯	◯	◯
Carte de crédit بطاقة الائتمان	◯	◯	◯	◯	◯
E-paiement (e-Banking, applications mobiles...)/الدفع الإلكتروني (الخدمات المصرفية الإلكترونية ، تطبيقات الهاتف المحمول ...)	◯	◯	◯	◯	◯

28. L'acceptation du paiement / قبول الدفع *

Une seule réponse possible par ligne.

	Rarement accepté/ نادرًا ما يتم قبوله	Parfois accepté/ مقبولة احيانا	Souvent accepté/ غالبا مقبولة	Presque toujours accepté/ تقريبا مقبول دائما
Espèces / نقدا	◯	◯	◯	◯
Le chèque bancaire ou postal/شيك مصرفي أو بريدي	◯	◯	◯	◯
Le virement/ التحويل المصرفي	◯	◯	◯	◯
Carte Dahabia /البطاقة الذهبية	◯	◯	◯	◯
Carte de débit /بطاقة الخصم	◯	◯	◯	◯
Carte de crédit/ بطاقة الائتمان	◯	◯	◯	◯
E-paiement (e-Banking, applications mobiles...)/الدفع الإلكتروني (الخدمات المصرفية الإلكترونية ، تطبيقات الهاتف المحمول ...)	◯	◯	◯	◯

29. Convenance / الملاءمة *

Exemples: rapidité, contrôle des délais de paiement, facilité d'utilisation, effort de transport/ على سبيل المثال: السرعة ، والتحكم في توقيت الدفع ، وسهولة الاستخدام

Une seule réponse possible par ligne.

	très incommode/ غير ملائم للغاية	incommode/ غير ملائم	Pratique / ملائم	Très pratique / ملائم جدا
Espèces / نقدا	◯	◯	◯	◯
Le chèque bancaire ou postal/شيك مصرفي أو بريدي	◯	◯	◯	◯
Le virement/ التحويل المصرفي	◯	◯	◯	◯
Carte Dahabia /البطاقة الذهبية	◯	◯	◯	◯
Carte de débit /بطاقة الخصم	◯	◯	◯	◯
Carte de crédit /بطاقة الائتمان	◯	◯	◯	◯
E-paiement (e-Banking, applications mobiles...)/الدفع الإلكتروني (الخدمات المصرفية الإلكترونية ، تطبيقات الهاتف المحمول ...)	◯	◯	◯	◯

30. Classez l'importance de chaque caractéristique de paiement lorsque vous décidez quel moyen de paiement a utiliser./ رتب أهمية كل ميزة دفع عند اتخاذ قرار طريقة الدفع التي ستستخدمونها. *

Une seule réponse possible par ligne.

	1 le plus important	2	3	4 le Moins important
Sécurité/الأمان	◯	◯	◯	◯
COÛT/التكلفة	◯	◯	◯	◯
L'acceptation du paiement / قبول الدفع	◯	◯	◯	◯
Convenance / الملاءمة	◯	◯	◯	◯

31. Au cours des 12 derniers mois, avez-vous connu l'une de ces difficultés financières?/ خلال الاثني عشر شهرًا الماضية ، هل واجهت أيًا من هذه الصعوبات المالية؟ *

Plusieurs réponses possibles.

☐ Vous ou quelqu'un d'autre que vous connaissez avez perdu une somme d'argent / لقد فقدت أنت أو أي شخص آخر تعرفه بعض المال
☐ Compte de carte de crédit fermé par la banque ou la société émettrice de la carte/ حساب بطاقة الائتمان مغلق من قبل البنك أو شركة البطاقة
☐ Vous n'avez pas pu obtenir d'argent même si vous avez de l'argent sur votre compte (poste / banque)/ (لا يمكنك الحصول على أموال على الرغم من وجود أموال في حسابك (مكتب بريد / بنك
☐ aucune لا
Autre : ☐ _____

32. Quel est le total de tous les membres de votre famille vivant avec vous ? / ما هو مجموع أفراد عائلتك الذين يعيشون معك؟ *

Une seule réponse possible.

◯ moins de 3
◯ 3 a 6
◯ plus de 7

33. Quelle catégorie représente le revenu total combiné de tous les membres de votre famille vivant avec vous au cours des 12 derniers mois? ما الفئة التي تمثل إجمالي الدخل المجمع لجميع أفراد عائلتك الذين يعيشون معك خلال الـ 12 شهرًا الماضية؟ *

Cela comprend l'argent provenant d'un emploi, d'un business, d'une ferme ou d'un loyer, les intérêts, et tout autre revenu en argent reçu par les membres de votre famille âgés de 15 ans ou plus./ هذا يشمل الأجر المحصل من العمل أو الأصال التجارية أو المزرعة أو الإيجار والفوائد وأي دخل نقدي آخر يتلقاه أفراد العائلة الذين يبلغون من العمر 15 عامًا أو أكثر.

Une seule réponse possible.

◯ <50000 da
◯ 50000 da -100000 da
◯ 100000 da - 200000
◯ 200000 da - 300000 da
◯ 300000 da - 400000 da
◯ >400000 da

34. Avez-vous des commentaires sur ce questionnaire ?؟هل لديك أي تعليقات على هذا الاستبيان

Table of Contents

Table of Contents