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Research Paper

How can fintech contribute to the economic development of West Africa?

Bachelor Thesis

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International finance

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List of Abbreviations

WAEMU West African Monetary Union

TF Technological Finance

AWIBI African Women In Blockchain Initiative

MTN Mobile Operator

OCDE Organization for Economic Co-operation and Development

BCEAO Central Bank of West Africa

GIM-WAEMU Interbank Monetary Group of the West African Economic and Monetary Union.

PCI-DSS (Payment Card Industry - Data Security Standard): security standard that applies to information systems handling sensitive data, primarily cardholder data.

EMV standard developed jointly by the international payment organizations Europay, MasterCard and Visa since 1995. EMV is the international standard for chip card security.

ADB African Development Bank

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Abstract

The West African economy faces many challenges. These include informal economic activities. According to the OECD, there is a distinction between economies: underground; illegal and informal. The OECD defines them as: the underground economy includes hidden activities in order to evade legal obligations. The illegal economy is drug trafficking, counterfeiting. And finally, the informal economy defines activities that are little known to the services of the state. Here, these are companies and services that are totally or partially outside the control of the state. These companies are present in countless quantities in the West African market. Several sources estimate them to be between 80 and 90% in the WAEMU area.

These entities by their nature are involved in making the policy of social contributions and their collections extremely complex. Added to this is a very dilapidated financial system. In developed countries, the financial system allows for the collection and redistribution of homogeneous wealth.

All scriptural financial flows are traced and can be accessed by regulatory bodies. However, the West African zone commonly known as WAEMU representing eight states does not have such a system of control. According to Nancy Benjamin and Ahmadou Aly Mbaye 99% of the exchanges are done by physical means, this has the effect of the increase of enterprises and services said: informal.

Most of WAEMU's economic activities are unstructured, allowing small groups of individuals to enrich themselves. Again, according to Nancy Benjamin and Ahmadou Aly Mbaye, the agricultural economic sector that contributes enormously to gross domestic product is one hundred percent informal in the following countries: Burkina Faso, Senegal, Benin.

This has the effect of increasing the fiscal deficit and does not finance public infrastructure: schools, health services, roads, buildings. Therefore all the above elements contribute to the impoverishment of states and the population. This situation is driving many young West Africans into exile in Europe, whether through regular or non-regular channels.

The purpose of this research is to analyze the new wealth opportunities that fintech offers to West African states and their population. During this thesis, we will analyze fintech exhaustively first. Then we will talk about the problems that are undermining their economies. Together we will see the impact of fintech on their economies. Finally, we will discuss how fintech combined with other key elements can contribute fully to the development of WAEMU countries.

1. Introduction

1.1 Background

The WAEMU area is an economic area located in West Africa. It comprises eight countries: Benin, Burkina Faso, Côte d'Ivoire, Guinea, Mali, Niger, Senegal and Togo. Historically, all these countries are geographically and linguistically related. They're ex-French colonies. These countries share the same political and economic structure as France. Unlike the EU, WAEMU is an example of economic cooperation linked by the same language.

This area has a hundred and twenty-three million inhabitants representing an important issue for their economic development. (Rapport BCEAO 2018)

It is a majority young population representing an important asset in terms of creativity and manpower. This youth must be framed by an effective employment policy so that they can integrate into working life. In the WAEMU area, depending on the sectors of activity sixty-eight percent of employment can be described as informal. eighty to ninety-seven percent of the jobs created are also informal according to (World Population Prospects 2019).

This shows that there is a real entrepreneurial dynamism and job for the people. However, this job creation is not framed by the local authorities. The establishment of a transparent financial system for the financial inclusion of businesses and individuals is absent.

Institutional factors are very important in explaining the expansion of the informal sector.

The weak authorities in establishing an effective and transparent regulatory framework for business promotes the continuity of the informal system. All of these challenges could be addressed in the development of a digital economic system.

Today, fintech based on decentralization and using new technologies to promote itself is an element of response. Where the construction of a banking office was not economically viable, fintech provides digital solutions that do not require human intervention.

Fintech is shaking up the traditional banking system by providing the general public and professionals with simple, efficient and affordable financial services.

According to Jeune Afrique, the increase in the volume of smartphones in Africa over the past decade has led traditional banks to question the relevance of their business model. Recently, some exclusively digital banking institutions such as Revolut; No 26; Monabanq acquired a large market share of traditional banks.

1.2 Main issues

The WAEMU economic space faces many challenges, largely related to its very rudimentary economic systems. First of all, it is a system where the use of cash is predominant in daily transactions. This does not encourage savings. Under these conditions, companies have a low level of capitalization, which affects their competitiveness and productivity. Because banks cannot use savings as a financial leverage. Today, the WAEMU market has a hundred and twenty-seven traditional banks for a hundred and twenty-three million inhabitants. (BCEAO Report 2018)

In this system, it is also difficult to establish a tax policy. Taxes from domestic production are not enough to finance public infrastructure. And without decent public infrastructure, no economic agent can conduct its operations optimally.

The consequences of a deficient economic systems are numerous and the aim of this work is among other things to highlight the problems and see how fintech can provide solutions.

Government authorities have taken strong positions to counter informal enterprises. Unfortunately, their actions have been unsuccessful and problems persist and multiply.

The economic problem in the WAEMU zone is due to numerous shortcomings, coupled with years of mismanagement by the government. This has had the effect of plunging the majority of West African economies into the informal. Attempts to migrate to digital financial systems without a digital ecosystem are proving too slow and prevent WAEMU countries from developing and structuring their financial flows. They are currently in a situation of eternal restart.

The advent of digital communication tools has reduced poverty and unemployment in Africa, enabling new generations to become independent entrepreneurs: influencer, motivator, net artist, e-Tv, YouTube. These tools provide local businesses and artisans with media coverage as well as monetization tools. Digitalization therefore accelerates productivity by reducing social and geographic inequalities. In the digital age, almost all sectors of economic activity are undergoing digital transformations. The financial sector is also undergoing major changes with fintech. Fintech is the combination of digital technologies and financial services that allow a new or modifying of an existing business model. It could facilitate the inclusion of informal enterprises and households. With the support and efforts of the authorities, financial technologies could address the lack of transparency and other scourges facing their economies.

1.3 Research Question

Can fintech contribute to economic development of West Africa?

Research Sub-Questions :
Can fintech be a vehicle for economic change in West Africa?

What impact will fintech have on their economies?

Before showing the impact of fintech on West African economies, we will analyze fintech in a comprehensive way first. Then we will talk about the problems that are undermining their economies. We will reveal the key elements that could enable the development of fintech in this area. A comparison will be made between the WAEMU Zone and the various more developed African regional fintech zones.

1.4 Research Structure

Chapter 1 Introduction

Chapter One presents the WAEMU space and its countries. It also mentions its human dynamism, which is largely made up of a young population. This dynamic youth, waiting for opportunity, unfortunately faces structural problems. In this section, it was also discussed to highlight the economic and financial problems in order to better understand the purpose of this work.

Chapter 2 Summary of Literature Review

The first part of this segment will be dedicated to fintech, its operation, its objective, its advantage and its disadvantage. The second part will then focus on the problems delaying the economic development of the WAEMU countries. In concluding this chapter, we will show the need to embrace fintech as an answer to current economic problems.

Chapter 3 Body of Thesis

This part begins with a presentation of the impact of fintech in Africa. Then the segment of this chapter will focus on the search process and the strategy put in place to collect the information. The different methods used for the development and selection of data will be presented. And finally, the third part of this chapter will focus on the data collected in the field.

Chapter 4 Findings

This chapter highlights the results of theoretical and practical research. The research question and sub-questions will be addressed in this section.

Chapter 5 Summary, Conclusion and Recommendations

the results will be summarized regardless of their outcome. The different searches and results will be compared with the previous literature covered in the second chapter, in order to look for similarities. Recommendations will also be made to answer the thesis question.

1.5 Research Setting

This audio interview was conducted from Monday 19 to Friday 20 November 2020 in Abidjan. The theoretical data collection comes from the Central Bank of West Africa and the World Bank.

1.6 Rationale of the content

This topic on fintech in the improvement of West African economies is attracting a lot of interest and debate in Africa. It is important to examine and understand the advantages or disadvantages of fintech on populations and economic activities. The objective of this work provides a real picture of the market situation.

2. Summary Of Literature Review

2.1 Theoretical literature review

2.1.1 What Is FinTech?

Fintech is an abbreviation for the terms finance and technology. It is a fusion of financial services and technologies used on a day-to-day basis. These technologies improve financial services by reducing costs and financial intermediaries. One of the hallmarks of fintech is that it is accessible to everyone regardless of people's social level. In recent years, fintech has been boosted by a new generation of startups operating in a purely digital environment. These fintech companies break the codes established by traditional banks by offering simple services. It is important to note that several traditional banks to get up to date, have bought fintech startups not to be overtaken by this phenomenon.

2.1.2 What Are Fintech Services?

Fintech services are multiple. Fintech companies innovate all the time by introducing new services. To simplify, there are five main financial activities on which fintech companies position themselves. These are activities such as: account maintenance; the issuance and management of currency; funding ; savings and investment management. (Régis Bouyala's Fintech revolution).

2.1.3 Services For Companies

E-commerce has grown significantly over the past decade. This allowed you to make purchases and sales on the internet without having to physically go to a store and get delivered to the house.
The share of online sales is increasing every year. Revenues reached 103.4 billion euros in 2019, an increase of 11.9% compared to 2018. The payment method used in

the majority of cases for this type of structure is usually the credit card. (Blogdumoderateur.com)

Fintech startups offer solutions tailored to e-commerce companies. First, there is the modernity of their interfaces, the speed of execution of software and the possibility of using several means of payment. Then there is security, which is to reduce the rate of fraud by using technologies like Big Data and artificial intelligence that can recognize customer data. This is an important advantage for the e-commerce sector which needs to develop a relationship of trust with customers. However, the fraud rate on online transactions would be $25.6 billion according to (Moneyvox.fr/ 2020)

2.1.4 Mobile Payment

Paying and receiving money via a smartphone facilitates money transfers. This service has been developed for convenience stores in order to compete with e-commerce. This service avoids excessive commissions for merchants using a banking terminal. It is a system that saves a huge amount of time for the management of the cash register and avoids human error.

2.1.5 Services For Clients

The virtual wallet has been developed mainly for smartphones and allows ephemeral creation, storage and conversion of all bank cards and loyalty cards by scanning them in the system in order to make payments at the checkout or on the internet. This service makes it possible to secure the use of the bank card, usually on the internet by allowing customers not to transmit their sensitive data such as: the credit card number; crypto code on websites. This service is ergonomic and automatic. There is no longer any need to enter the card data every time when you need to make an online transaction. All cards are centralized in the smartphone and then become less cumbersome in the physical wallet.

2.1.5 Funds Transfer

Fintech companies know how to compete with banks that offer this service at a high cost, especially when it comes to international transfer. The costs of an international transaction range from six to seven percent of the transaction amount when it passes through a bank. TransferWise, a Fintech company offers the same service but for 0.5% of the transaction amount. (Fintech Report 2020)
In developing countries, this service is very popular and allows the diaspora to send money to their relatives who have remained in the country of origin. It is important to note that only a minority of the population has a bank account and mainly uses the telephone as a means of payment in these countries.

2.1.6 Currency Issuance And Management

In recent years, several cryptocurrencies have emerged: Ethereum; Litecoin Dogecoin; Cardano; Ripple and many others. Bitcoin is the champion of virtual currencies with a current price of fifty thousand dollars. Unlike other currencies,

cryptocurrencies use the Blockchain system and are decentralized. That is, they are not issued by a central bank.
The main advantage is the low cost of transactions. However, the anonymity behind cryptocurrency transactions can potentially be used to finance illegal activities such as money laundering, terrorism... Fintech companies have mainly developed by offering customers a kind of 'Forex crypto' which allows the conversion of traditional currencies into virtual currencies and vice versa. This service also allows merchants to accept payments in bitcoin or other cryptocurrencies and then quickly convert it into central currency.

2.1.7 Financing And Savings

Crowdfunding is a way for a company or a person to raise funds without going through a banking intermediary. Investors and fund seekers are connected via an online platform so that everyone can find their interest. Generally, it is the addition of many small investors that can achieve the amount of financing needed for a project. There are four main types of crowdfunding :

- Equity crowdfunding
  The institutional or private investor finances the company in order to have shares in the company. In this case, he becomes a shareholder and can therefore expect to receive financial consideration if the project is successful.

- Crowdlending
  Crowdlending is more like what banks offer. That is, investors lend money to the company and in return receive the reimbursement of the nominal with interest.

- Crowgiving
  It is generally used for funding association or humanitarian causes. The principle is simple: people go to the platform to make a donation, the amount they want. The investor expects to receive nothing in return. This solution facilitates intuitive and spontaneous donations. .

- Reward based
  In return for financing, the investor will receive a symbolic reward, often from the goods created by the company or a service. Generally, the reward is proportional to the investor's contribution.

2.1.8 Investment Management

Unlike traditional banks, they are robot advisors designed to manage customers' assets through big data analytics as well as powerful algorithms. Their services include automated portfolio planning, automatic asset allocation, risk assessments, account rebalancing and other digital tools. This technology is very popular in the United States and these robots currently manage twenty billion dollars in assets, and according to some analysts, this amount could increase sharply in the coming years.

FINTECH has democratized this sector. In the past it was difficult for small portfolios to invest with little equity; small investors were forced to fend for themselves because the services of financial advisors were very expensive. With robot advisors, it is now possible to invest with little financial means and to keep a great discretion on fortune, while having reasonable management fees.

2.1.9 Historical Fact

It is true that for the past three years, the term fintech has been very popular in the world. But people forget that fintech has been around since the middle of the 20th century. It was in 1950 that the first credit cards appeared on the market to replace physical money. Then, a decade later, ATMs arrived to replace bank tellers. All these technologies revolutionized the banking system and impacted civil society at that time. This has reduced costs and improved customer service.

Then there were other innovations, starting with the digital processing of equities in 1970 and the emergence of computers in central banks in 1980. Finally, the democratization of the Internet came in the 1990s. This revolution has allowed the development of online commerce and brokerage websites have emerged to replace telephone brokerage. It is therefore important to note that technology has been revolutionizing the banking and financial world for several decades.
These technologies have made it possible to create more sophisticated tools for risk management, payment processing, cash management and data analysis. All these tools improve the financial system and increase economic productivity. (lesmeilleurfonds.com 2021)

These technologies have led to the creation of more sophisticated tools: risk management tools; Payment processing; cash management and data analysis.

2.2 Empirical Literature Review

2.2.1 Current Context In WAEMU Zone

2.2.2 A traditional financial system

The West African financial system is still very old despite the digital tools used by people on a daily basis. Local transactions are mainly in cash. The purchase and sale of products is done in specific places dedicated to exchanges. Regardless of the amount of the product, it is exchanged: product for cash. Not all of these daily transactions are subject to any tax levied. And so leaves no financial trace.

This type of system does not benefit the authorities or the banks. First of all, it does not allow governments to collect taxes effectively. Second, people save little because they use cash for their day-to-day operations. The WAEMU financial system already contains few banks (123 banks) against more than 2000 banks in the EU area. There is a great inequality in the distribution of bank branches in the countries. (figure 5)

Only the major capitals concentrate on the banking institutions. For example, in Ivory Coast, the city of Abidjan contains all banking institutions. There are an estimated 25 bank branches for 4 million people in Abidjan alone. Côte d'Ivoire, Senegal and Burkina Faso are the three countries that carry the monetic activity in WAEMU, in terms of the number of banks, cards issued, acceptance infrastructures and transactions. The other countries of the union have very, very little monetic activity. (figure 6)

The WAEMU area has a hundred and twenty-three million inhabitants for 3,698 ATMs and 7,015 electronic payment terminals. The number of magnetic cards is 6,296,787, of which 76% are backed by a bank account and 24% are prepaid. In 2018, the volume of monetic transactions reached 94 million for a total of 10,160 billion CFA francs or 17 million Swiss francs. The paradox is that South Africa alone has 48.8 million bank cards for a transaction volume of 5.6 billion estimated at 72 billion Swiss francs. (Report BCEAO 2018) (figure 7; 8)

In the WAEMU area, the main types of banking transactions are made up of withdrawals (91%), followed by payments (8.30%) and cash advance (0.54%). The average transaction is valued at 106,444 FCFA or CHF 178.- in 2018 compared to 76,269 FCFA or CHF 128.- in 2017, an increase of 39.56% in 2018. (BCEAO Report 2018)

The high withdrawal rate here shows that the market is dominated by the use of cash. And this does not in any way promote the financial inclusion of local households and businesses. These figures also show that households save as little as possible. This means that banks do not have enough resources to support the local economy. Because they do not receive savings, they cannot lend. Under these conditions, there is no monetary value added to the existing money supply. It is by making loans that most of the monetary creation is realized. This financial environment is an obstacle to the proliferation of banks in the market.

2.2.3 Current Banking Regulations

The rules (EMV) that govern the current financial system date back to 1995. Today, for the diversification of financial activities, BCEAO and GIM-WAEMU have launched a number of initiatives, not regulations, to better monitor and control the security (prevention against fraud) related to the risk of digital transactions.
The aim was to require credit card issuers to comply with PCI-DSS and EMV security standards and the promotion of contactless card issuance and the completion of the data collection and processing automation (COCOTIER) project. (BCEAO Report 2018)
A financial system not adapted to the current digital challenge and regulations dating back several years helps to strengthen the informal economy.

2.2.3 Informal Players

Generally, the idea of the informal economy often refers to the image of small unorganized producers and craftsmen operating on the periphery of the formal economy. But the reality on the ground is quite different. In the union, informal activity affects all sectors of economic activity. Smallholder farmers co-exist with large holders in informal operations in well-organized and politically well-connected networks.

Large operators are businesses that can employ hundreds of people and sometimes have fixed locations. These companies are somewhat known to the trade register and the tax administration. Many of them pay a flat-rate tax because of the difficulty that tax authorities face in tracking their operations: the sincerity of the record-bookkeeping and financial documents are sometimes difficult to authenticate. Therefore, the tax authorities generally apply a single tax system with minimum account-keeping obligations.
According to Omar Thiam, the tax administration makes theoretical estimates to determine the tax payable to them.
These large informal players have a very different organizational structure from formal enterprises. Indeed, in informal companies, a single person concentrates without much transparency all the decision-making powers from management to the most insignificant of tasks. And the employees just do the job. Small informal businesses, on the other hand, are more in line with the idea of the informal economy that exists alongside the formal one. Most of them operate in the commerce, transport, cottage industry and many other sectors. (Informal businesses
from French-speaking West Africa Book)

2.2.4 Lack Of Access To Credit

Informal sector companies cannot provide the administrative and financial documents requested by banks to access credit. Lack of access to finance in particular means that companies have fewer opportunities to invest in their operations and, as a result, have a lower level of capital intensity and therefore reduced productivity.

2.1.5 Institutional Structural Problems

Institutional factors are very important in explaining the expansion of the informal sector. First of all, the authorities are weak in setting up a digital economic system that meets the needs of the local market. Then there is a total absence of effective and transparent rules governing business, and finally, the poor provision of public goods and services are decisive in the choices of entrepreneurs to opt for formalization. Formalization means better access to public services, but also the enforcement of rules, especially those concerning tax collection. The choice to operate in the formal sector involves fixed costs related to the registration and upgrading of formerly informal activities and variable costs (taxes and social contributions).

The structure of the incentives that businesses face determine to a large extent the informal sector in West Africa. The foundations of a formal market economy, such as property rights, the execution of contracts are not guaranteed by local authorities. In this context, informal institutions substitute the State in the provision of public goods, and therefore perpetuate informal activities within the administration. (see video 1)

The foundations of a successful and efficient economy are known and the strategic investments that the local financial system needs are visible. But investments are misguided. The authorities prefer to contract loans with international banking institutions to invest in projects that only serve their political interests, with the aim of being re-elected and staying in power for life. These projects simply promote statesmen and have no objective to create a clean and transparent economic and financial framework for the inclusion of businesses and households. Since the independence of the WAEMU countries, development aid of several hundred billion euros has been granted to them by international organizations, the International Monetary Fund, the World Bank and the European Union. But the contribution of all these investments did not contribute to development. According to the World Bank and the IMF, the WAEMU countries are among the heavily indebted poor countries. (World Bank, 2019); (video 2)

2.1.6 Consequences

This informal economy has strong economic impacts (drop in productivity, loss of tax revenue, endemic public deficit, brake on foreign investment, etc.) thus limiting their attractiveness and economic competitiveness. The informal sector helps create a bellicose business climate for formal businesses, especially foreign investment. The dualistic nature of West African economies, characterized by a large unregulated and untaxed informal sector, is an obstacle to sustained and steady growth.

Small units in the formal sector, made up mainly of foreign companies, have to bear a disproportionate tax burden, which considerably overwhelms their competitiveness. These high taxes and charges are likely to produce huge costs for formal businesses and, conversely, are advantages for the informal sector. It is not uncommon to see formal businesses with partially informal activities.

Employees in the informal sector are much more exposed to poverty and precariousness than others. In general, while the informal sector represents a source of income for people with very few options, it cannot be a sustainable source of growth and income generation. The informal labor market is completely deregulated and workers do not benefit from social protection. The lack of banking institutions massively fuels the use of cash. Added to this, the difficulty of States to issue digital currency in the payment of salaries of public sector employees. (Until now the payment of salaries of public sector employees is done in cash via the public treasury)

Tax evasion is another well-known social cost of the informal. There is an important difference between the formal and informal sectors in their contribution to GDP and tax revenues. The informal sector does not contribute to tax revenue, although it represents more than half of GDP. The contribution of informal activities to GDP in the developed countries is 20%. Whereas in the WAEMU, it represents 80% of GDP (Informal businesses from French-speaking West Africa Book)

The poor condition and lack of renewal of public goods, roads, schools, structures and many others are indicative of insufficient tax revenues. Governments are trying to impose taxes on small informal businesses, mainly through flat-rate taxes, but the

results are very disappointing. Large informal enterprises are able to pay much more than they do, but resort massively to under-reporting of income and use their political influence despite the added value created in this sector.

In Burkina Faso, the agricultural sector is 100% informal. In general, tax evasion from informal activities is very significant. In 2008, the Burkinabe tax administration collected XAF 226 billion, or 380 million francs, while the informal sector contributed less than two billion of this total. (Informal enterprises of French-speaking West Africa Book).
The informal economy is responsible for reducing the tax base in countries with structural budget deficits and extremely high debt levels.

2.3 Conclusion of Literature Review

Theoretical and empirical analysis have made it possible to juxtapose fintech and the economic problems of the WAEMU
This data is extremely informative and suggests that there is a close connection between these two terms. A value advantage that fintech could bring to their economic systems

Adopting Financial Technologies would be imperative for the development of a digital environment. A digital ecosystem is essential for the development of fintech in Africa. Because fintech is a service of the digital economy

3. Methods

3.1.1 Overview and Investigation Methodology

The impact of fintech in Africa will be addressed in the first part of this segment. It will give an overview of the technological objects commonly used in Africa.

We will analyze by comparison West Africa and other regions of Africa that have adopted fintech.
The research strategy will be discussed in the second part of this chapter. We will give you the details about the process of our research. And the methods applied.

We conducted interviews in Ivory Coast to understand the evolution of fintech on the ground.
Ivory Coast is the economic leader of the WAEMU zone, it holds forty per cent of the money supply and has great political and economic influence over the other countries of the region. It was therefore important that the collection of information to carry out this research could take place in that country. (figure 9; 10)
The data collected to complete this study comes from key players directly established in the market. They are actors in the formal and informal sector.

The third segment will be devoted to interviews conducted as part of this research. It will be interesting to highlight the main elements that result from this.

3.1.2 Smartphones And Telecommunications Network Overview

Mobile communication networks are developing and covering almost the continent as can be seen on the map.(See Figure 1)
Telecommunications companies like MTN; ORANGE; AIRTEL and others had already grasped the consumption potential that Africa represents. Africa represents a population of 1.216 billion people, 41% of whom are under 15 years old. (Google 2016)

This young and growing population has an excessive appetite for smartphones. Chinese manufacturers like TECNO; XIAOMI; HUAWEI; ITEL largely dominate the market. These are mainly smartphones estimated at 200 U.S. dollars.

In 2018, Deloitte experts estimated that 660 million inhabitants would be equipped with a smartphone in 2020. A forecast no doubt largely achieved with the deployment of 4G on almost the entire continent and which will be reinforced by the mobile operator Orange which announces 5G in Africa between the second half of 2021 and 2022. These investments for the deployment of 4 and 5G on the continent would not be possible if there was not a large consumer market behind. (Jeune Afrique 2019) (Agencecofin.com 2021)

In 2020, 4G covered 63% of the population or 75.6 million of the population in the WAEMU area. An estimated 24% of the poorest people connected to the internet. (Africa Development Dynamics 2021)

In Africa, smartphones and the Internet have revolutionized information and the way we communicate. People have access to various sources of information rather than reading local print newspapers that are often biased. People have access to the same information via their smartphones, despite geographical inequalities between the urban and rural areas.

International communication costs were very high in Africa, but became free with apps like WhatsApp; Viber; Facebook and many others, giving consumers more choice. One thing is certain, technology is making changes and increasing the number of services to give people more choices.

One of the most famous financial technologies in Africa is mobile money. This service allows you to transfer money via smartphones with an Internet connection. Mobile money is a service managed by external cash-in and cash-out infrastructures. They are electronic money agencies that have the role of converting electronic money into central currency and vice versa.

The 2018 Global System for Mobile Communications Association (GSMA) Report recorded 866 million mobile money accounts worldwide for a transaction volume of US $ 40.8 billion. Of this total, 395.7 million mobile money accounts were registered

in Africa alone, almost half of the total with a transaction volume of US $ 26.8 billion.
(GSMA 2018 Report, page 13).

According to GSMA, one third of these mobile money accounts remain active. The main consumers of this service are: Benin, Botswana, Burkinabe, Ivory Coast, Gabon, Ghana, Kenya, Lesotho, Rwanda, Swaziland, Tanzanian, Ugandan and Zimbabwean. (GSMA Report 2018, page 9).

The percentage of people with mobile money accounts in WAEMU countries is divided as follows: Senegal (67%); Ivory Coast (70.4%); Burkina Faso (68.4%); Togo (71.9%); Benin (74.5%). (Africa Development Dynamics 2021)

25% of active mobile accounts on 300 million registered accounts in sub-Saharan Africa. (Mobile monetary measures). 75 million mobile money accounts are active for an estimated population of 1 billion. These low numbers are relatively positive signs for the evolution of financial inclusion. However, this service could be more effective if the authorities establish regulations to digitize the economy as a whole. It is important to remember that fintech is at the service of the digital economy. It's not just about adopting fintech to innovate. We need to develop the whole ecosystem that goes with fintech.

Fintech, especially mobile money, is much developed in East Africa. These countries have understood that the performance of fintech depends on the digitalization of the economy. East Africa holds the record for mobile payment in the world.
Its sales from online commerce brought in $598.million from 2014 to 2018. The percentage of companies with a website is 35.4% (Africa Development Dynamics 2021)

3.1.3 Cryptocurrency in Africa

This tool could diversify trade in the Union compared to traditional currencies. It would solve the problems associated with excessive inflation of the local currency. Citizens of countries hit by hyperinflation in Africa have resorted to cryptocurrencies. For example, South Sudan's inflation rate was 24.5% in 2019, up from 83.5% in 2018,according to the African Development Bank (AfDB).

Inflation in Zimbabwe had forced the authorities to print one hundred billion Zimbabwean dollars banknotes. Each hundred billion note had a value of 40 US dollars. At that time, many people in the country bought in Bitcoins rather than in local currencies affected by hyperinflation. These currencies are alternatives to the disastrous policies of central banks. (Wikipedia).

Zimbabwe-based start-up Golix saw an opportunity by installing Bitcoin ATMs.

With the increasing number of people connected to the internet in Africa, more people can have access to cryptocurrencies. To this end, Kenya is also the fifth country in the world that holds Bitcoin. (France24 - 2018)

If no law governs the exchange of cryptocurrencies in Africa. There is no guarantee that the authorities will not change their minds. However, the notoriety of cryptocurrencies favors their popularity on the continent. For Africans who fear the government's arbitrary takeover of the financial system, cryptocurrency represents a solution.

Several cryptocurrency projects have been launched in Africa:

Luno, a South African exchange platform now with 1.5 million customers worldwide. Luno is the first platform born in Africa in 2013.

Other cryptocurrency transaction services are flourishing in Africa. ABRA, a start-up, operating in Malawi and Morocco. GeoPay in South Africa and BitMari in Zimbabwe.

BitPesa, established in 2013 in Kenya, facilitates the transfer of virtual money worldwide via smartphone. In Kenya, LocalBitcoins.com recorded a transaction volume of more than $1.8 million in December 2017, proving its profit-making nature.

3.1.4 Blockchain in Africa

Foreign companies are experimenting with blockchain technologies in Africa. This is the case of AGORA, a Swiss company, used blockchain technology to help ensure transparent elections in Sierra Leone in 2018. (Businessinsider.fr, 2018)

In Ghana, start-up Bitland is using blockchain technology to eradicate corruption related to land titles. Its business model provides a permanent registration of land titles and their owners in a given database. This database is accessible and serves as a liaison with the authorities to resolve land disputes.
The uses of blockchain in African countries could be innumerable and diverse with the remaining problems.

In May 2018 Cardano, a blockChain and cryptocurrency project signed a memorandum of understanding with the Ethiopian Ministry of Scientific Research. This memorandum implies the use of blockChain in the agro-industrial sector. This agreement provides Blockchain training to Ethiopian youth.

Crypto Savannah is a Kenyan technology center that develops blockchain in Africa and works for gender equality through AWIBI (African Women In Blockchain Initiative). Interest in blockchain is not waning. In 2018, the Kenyan government announced its intention to use blockchain technology in a massive social housing project.

In the same vein, StudEx, an organization that ensures the conservation of the animal species, uses blockchain technology and other tracking technologies to track and study endangered animals. (Young Africa 2020).

Blockchain could be a solution for tracing and managing prescription drugs. This technology could stop counterfeit medicines and simplify recalls of prescription medicines at any point throughout the pharmaceutical industry.

Using blockchain to prevent the spread of counterfeit medicines could save those living in extreme poverty from unimaginable suffering. These disadvantaged people are likely to consume counterfeit medicines. Since they are cheaper in the hope that they will have the same effect as legitimate drugs. But in most cases, these drugs lead to death. According to the World Health Organization, 1 out of 10 medical products in developing countries is of inferior quality or falsified. And 42% of these falsified medical products are sold in Africa. (WHO 2017)

3.2 Research Process

3.2.1 Research Strategy

This research on fintech in West Africa has benefited from an in-depth analysis involving key players from different industries.
The Fintech theme is very popular in the world. It is the subject of several analyses covering its advantage, risk and evolution in the economy. Some sources analyze the impact of fintech on the economy. While other sources focus on existing financial technologies, their evolution and many others.
The collection of information has been enriching in that it has allowed us to have a broad vision of fintech. This allowed us to study the problem of this thesis from a wide angle.
Several data from various sources such as the World Bank; the Central Bank of West Africa; GSMA; FRANCE24; Businessinsider.fr; Jeune Afrique and many others were used in the development of this work. While some sources contradict each other, others agree. In this case, it was important to carefully compare the sources, in order to avoid erroneous information.
The decisive aspect in this work is the interview carried out in the field, which makes it possible to realize the gap between what is stated in the reports and what is done in the field.
The people who participated in the interview were impartial despite the companies they represented.
The interview brought together professionals from the telecommunications sector, people from the informal and formal sector as well as people from civil society in Ivory Coast. We will give you the details of what emerges from these interviews.

Coming from West Africa, we chose this topic because of the problems that undermine and delay WAEMU countries. In comparison with other regions of Africa where fintech has helped to lay the foundations for structural development. Fintech and existing technologies like mobile money attract favorable views. But the situation of the economic structure is not favorable. It was important to identify and gather all opinions without exception.

3.2.2 Research Approach

Several approaches exist to collect the information that will determine the outcome of this work. Here positive and normative approaches have been used in the process of seeking information.
Positive evaluation is based on facts, reports... And the normative approach focuses on the clarity and transparency of the assumptions surrounding the issue in order to facilitate the debate.

Even if positivism is based on the collection of factual or empirical and quantifiable data, they may be insufficient. And that's why we used normative evaluation to distinguish between "what is" and "what needs to be."
It was important to combine these two approaches in order to make a deep analysis of the data collected and their uses. The importance of factual information in this work has allowed us to carry out theoretical and practical inductions and deductions

3.2.3 Induction Vs Deduction Methods

According to the French Dictionary Larousse, induction is an operation that consists in observing a fact and questioning oneself until finding its origin. This method is concerned with the quality of the data insofar as it makes it possible to place the fact in its genesis.
However, the inference focuses on the conclusion drawn from a fact or experience. In this case, it is the result of a quantity of information. These methods have allowed us to better address the issue in order to deliver reliable theories and comments on the subject.

3.2.4 Panel, Cross section and time series

This thesis contains a lot of primary and secondary sources dating from 2009 to the present day.

We have discovered several studies analyzing the economic problems of West Africa. And articles and report on technological innovations dating from 2018 to 2020.

The primary source comes from a collection "Developing Africa" created in 2009. This collection focuses on major West African socio-economic problems. The French development agency and the World Bank participate in the preparation of this study every year. This literature, based on real facts, sets out the state of African economies. This textbook is very popular in West Africa, because it allows to feed the reflection of researchers, political decision-makers, students.

Secondary sources consisting of articles and report on technological innovations dating from 2018 to 2020 helped to highlight the benefits of technological innovations. These sources were strategically crossed in order to see and analyze the link between WAEMU's economic problems and fintech.
We also made comparisons with other parts of Africa that had the same problems as WAEMU. But these regions have been able to overcome their problems with technological innovations.

With regard to the chronology of sources, it is important to point out that empirically some problems are earlier than the date of the sources.
The other sources focus on the impact of the digitization of the West African economy.

3.2.5 Sampling

To collect the information during the audio interviews, we applied the random sampling method. In other words, we have not taken into account gender equality. We interviewed 14 people, 5 women and 9 men
Among these people, we discovered that many people had mobile money accounts. But only used it a few times. However they all had latest generation smartphones with internet.
Two people were familiar to me among the people who participated in the interview. But the other people were selected and interested in the street. They did not know that the interview was done as part of my memory work. The age range was between 25 and 45 years.

3.2.6 Quantitative and Qualitative Research

The survey was an audio interview and the objective was to collect a quantity of information regarding the nature of local financial transactions, the evolution of mobile money, the situation on e-commerce, daily means of payment and many others.
As the question of this thesis was broad, the questions were not specific.
The idea behind this interview was to understand the behavior of economic actors.
Qualitative research was done by judgment by comparing the data collected through the interviews with those from primary and secondary sources. There were 14 questions in total

3.2.7 Hypothesis, Theories, Surveys, Interview and Limitations

3.2.8 Assumptions

To try to solve the problem of this thesis, we will formulate impartial hypotheses. These proposals are as follows:

Fintech could not contribute to west Africa's economic development

Fintech could contribute to west Africa's economic development

Hypothesis testing

Below, the null hypothesis (HO) and the alternative hypothesis (HA) of the thesis:

H0: $\mu=0$ Fintech would not contribute to West Africa's economic development

ha: $\mu \neq 0$ Fintech would boost West Africa's economic growth

Proposal 1 – Fintech would promote economic growth.

Fintech could establish the dematerialization, automation and digitalization of the private and public sectors. WAEMU countries could move from the primary to the smart economy.

People would have access to simple and cheaper banking services. People would no longer need to physically go to state or private agencies to carry out an operation. They could do it from their homes or offices 24 hours a day. This system would allow the emergence of new actors, but also the destruction of powerful and highly recognized organizations.

The formalization of informal businesses would involve digitalization, and this would allow the authorities to move from primary tax policy to intelligent tax policy.

Proposal 2 – Fintech would not contribute to economic development.

If the daily transactions were done by cash most of the time. If mobile money services were used without the development of a digital environment. These technology would serve no purpose.

3.2.9 Empirical Survey questionnaire

The survey is the most important part of this work because the answers come directly from the economic actors present on the Ivorian market. Sometimes secondary sources diverge from reality and that's why we did these interviews.

The questions focused on the financial and business habits of economic actors in different sectors: entrepreneurs in the informal and formal sectors; civil society and telecommunications agents.

The issues had to be specific to their industry. So the questions were different for each of the speakers.

Questions for telecommunications agents focused on the situation and evolution of digital payment services in the market. They are agents of the two major telecommunications companies in ivory coast that are MTN and ORANGE. These companies created mobile money subsidiaries in 2008 for Orange Money; 2009 for MTN. They operate in the WAEMU countries.

These operators partnered with banks to become mobile money agencies because at the beginning of their creation, they did not have authorization from the central bank (BCEAO) to issue electronic money. This was the case of the operator Orange associated with BICICI, a subsidiary of BNP Paribas and MTN associated with SGBCI, a subsidiary of Société Générale. In 2015, these operators received approval to issue their electronic currencies.

The questionnaire for merchants in the formal and informal sector focused on their online activities, the means of payment accepted to access services and products, and the keeping of accounts.

The questionnaire for ordinary citizens focused on the frequency and purpose of the use of digital payment services.

3.2.10 Limitations

We would have liked to interview more people from different sectors of activity. Having more different points of view would make it possible to understand the strength and the problem of this work. The interview was conducted in the city of Abidjan. However, we would have liked to involve more cities in our survey. For lack of time, and with the health situation, we stayed in Abidjan.

3.3.1 Data Analysis

3.3.2 Research Setting

The objective of the questions was to reach the conclusion of whether fintech is a factor of economic growth for WAEMU countries.

Fintech being a term covering many innovations, the questions asked were not specific to a digital payment service or other. The purpose of the questions was to analyze the behavior of economic actors. And establish a clear judgment on the matter.

There were a total of 20 questions. questions for each sector of activity. The survey was attended by 19 persons, as follows:

Two men working for Orange and MTN.

For the informal sector we selected 5 women and for the formal sector, 2 men were selected. Then finally we interviewed 10 people, including 5 men and 5 women. This audio interview was conducted from Monday 19 to Friday 20 November 2020 in Abidjan.

3.3.3 Survey-Questionnaire Data

-Telecommunications Sector (MTN /Orange Group)

Interview 1: Faye Cyriaque customer advisor at Orange Mobile for 10 years

Can you give us a history of the evolution of mobile money in ivory coast?

Before the mobile money service was limited to C2C money transfer. That is to say, it was mainly people who wanted to send money to their loved one only in Ivory Coast. We were limited to (the cash in and cash out service in the years 2010 to 2014). At that time, people would come with cash to the Orange agency and indicate the city where they wanted the money to be sent. And that money was sent in the form of a call credit or credit communication to their family. Transaction fees vary depending on the amount sent.

This service has been very successful. And upstream we were already preparing Orange Money to be a bank. We were waiting for the approval of the central bank to be an issuer of electronic money and a deposit structure like a bank. In 2016 Orange Money became a bank.

Notoriety	
Impact	Very strong
Degrees of uncertainty	weak

What kind of financial innovation do you offer?

We have integrated digital technology into our services and expanded the scope of our operations. The Orange Money app works like a virtual wallet and registering a new account is done in 2 minutes anywhere in the world. It is possible to scan and store credit cards in the app. Orange mobile money has 10 million subscribers.

It is now possible to send money via Orange Money to all countries in West Africa. If you have a mobile money account with Orange, you can consult your account 24 hours a day with the mobile application and pay your bills by bank transfer.

We also provide VISA or PREPAID magnetic cards to our customers to enable them to make payments at merchants equipped with bank terminals.

We guarantee the interoperability of our other mobile operator services with those of banks in West African countries

Notoriety	
Impact	strong
Degrees of uncertainty	strong

What obstacle does it face?

We are faced with a lack of banking culture in Ivory Coast. This lack is probably due to the ignorance of a majority of people. Most of the exchanges are in cash and e-commerce is not developed here. People use their mobile account to make deposits and withdrawals for security reasons. But above all mainly to transfer money to their loved ones. However, this service was not created solely for money transfers. The other services are hardly used.

notoriety	
Impact	Very Strong
Degrees of uncertainty	weak

What are your expectations?

We want to reach more people. Have a lot of users and see the use of cash decline even in the smallest daily transactions. We conduct awareness campaigns to educate the population on the use of mobile money services.

notoriety	
Impact	weak
Degrees of uncertainty	strong

Interview 2 Stéphane Adou advised customer at MTN Mobile for 7 years.

What kind of financial innovation do you offer?

We have different kinds of innovations right now. We have the digitalization of mobile money and the API (programming interface application) which allows you to integrate payments on a website or an application.

Today, we can issue electronic money. This allowed us to digitize the mobile service. We offer our users the choice to pay their bill by bank transfer. The majority of consumers use our services to send money to their loved ones. We have 8 million subscribers

notoriety	
Impact	Very strong

Degrees of uncertainty	strong

What obstacle does it face?

notoriety	
Impact	Very Strong
Degrees of uncertainty	weak

Our services are confronted with the significant use of cash in daily transactions

-Civil Society

Is cash the most used means of payment?

Answers	Selected	percentage
A Disagree	0	
B 50/50	0	

C Agree	10	100%

Every day, people use cash in their operations. To eat, buy alcohol, move, buy clothes, people use cash.

Do you have a bank account?

Answers	Selected	percentage
A Disagree	6	60%
B 50/50	0	
C Agree	2	20%

Among those interviewed had a savings account without a magnetic card, nor access to e-Banking. In addition to account management fees. Magnetic card and e-Banking costs are very high

Do you use mobile money services?

Answers	Selected	percentage
A Disagree	0	

B 50/50	0	
C Agree	10	100%

People use mobile money services to send money to their loved ones in rural areas

How often do you use mobile money?

Answers	Selected	percentage
Zero	0	
Less than 4 times	8	80%
Less than 8 times	2	20%
More than 10 times	0	

The majority of people say they use it 3 times a month and it is usually between the 27th and the 15th of the month that they send money to their family.

-Formal sector

What type of payment do you accept?

Answers	Selected	percentage
A Cash	9	90%
B 50/50	0	
C Crédit card	1	10%

80% of people prefer to use cash in their everyday race. And only 10% largely made up of expats.

Do you have an internet sales website?

Answers	Selected	percentage
A Disagree	10	40%
B 50/50	0	
C Agree		60%

60% of companies have a website. But the activities are mostly done in physical stores.

Do you make sales via the internet?

Answers	Selected	percentage
A Disagree	70	70%
B 50/50	0	
C Agree	3	30%

10% of music streaming websites make sales via the internet.

Are you subject to tax?

Answers	Selected	percentage
A Disagree	0	
B 50/50	0	
C Agree	10	100%

4. Findings

4.1 Outcomes of Research

The research has provided valuable insights into the contribution of fintech to the economic development of West Africa.

Fintech has not yet reached its full potential in the WAEMU area. The investigations have been able to prove this in general.

4.1.1 research questions and answers

Can fintech contribute to the economic development of West Africa?

According to the data collected from the participants in the survey, although it arouses interest, financial innovations are confronted with the use of cash in daily exchanges. The majority of stakeholders acknowledged that the mobile money service does not work everywhere. The information gathered has led to the impression that people are using financial innovations. But their use remains limited by the lack of digitalization of services.

To the sub-questions of this study «Can fintech be a vehicle for economic change in West Africa? What impact will fintech have on their economies? »

The interview revealed that 100% of stakeholders have mobile money accounts to send money to their family. Their family and close friends also have mobile money accounts as well. All this data shows that the mobile money service has a significant impact on the West African community. However, current financial innovations are too limited to foresee economic change.

4.1.2 Patterns

Even though mobile money is a very widespread service in West Africa. It faces a predominance of the informal sector in the market where transactions take place in cash. This does not allow the optimal function of fintech.

5. Conclusion

5.1 Summary

After analyzing the WAEMU area, we note that several elements are delaying their economic development. There is still a long way to go despite the little progress made on mobile money.

5.2 Conclusions

Fintech is a tool of the digital economy. So it meets the need of the digital economy. Financial technology outside its ecosystem cannot be effective as it is in the WAEMU area. The fact that mobile money struggles to appeal to people is due to the fact that

daily transactions are mostly carried out in cash. It is not enough to have a bank account or a mobile money account to be included financially. But people need to be able to have a bank account and use it for their daily expenses in a system that complies with this type of technology. The digital transformation of the economy is necessary. And it must bring together all stakeholders, private and public sector, to coordinate their efforts towards technological innovation. Even if the benefits of technologies are very important. however, they carry some risks. In itself, data is not a danger. But it is rather the character of the person who holds the data that is decisive. If it is an authoritarian state or a person with bad intentions, the data will indeed be used for criminal or fraudulent purposes. On this point, we will have to rethink our current political systems in order to be more transparent. And establish strict rules protecting personal data.

Fintech offers various quality services at low costs. These services and its ecosystem are solutions that respond directly to the problems of West African countries.

5.3 Limitations of the research

As we said above, we were limited by time and sanitary restrictions. Indeed, we would have liked to have had many more points of view. And involve more cities in our survey.

5.4 Recommendations for further research

We affirm that fintech can contribute to the economic development of West Africa. This development must involve the effective support of the authorities to promote the digitalization of West African economies. The number of people owning a smartphone continues to grow on the continent. And governments must use this factor to integrate digitization into the economic value chain. They must put in place mechanisms limiting the amount of physical money in favor of scriptural money. This will allow merchants and other actors to acquire digital payment tools.

The digital economy is based on the collection of information analyzed by machines. This information comes from our commercial, social and personal activities carried out on the internet.
This data makes it possible to understand, anticipate and even predict people's behavior. All this data can be used for sociological, commercial, psychological, financial, security, humanitarian purposes...

In other words, these data can be used for development to solve socio-economic problems; stimulate growth and innovation. It is important to note that the collection of information is at the heart of all new technologies.

Digitalization could improve employment in the WAEMU area. For young graduates and qualified people, this would solve the obstacles linked to regional inequality. The differences in development between the regions are considerable. Indeed, some urban cities often located on the edge of the coast concentrate the majority of formal

enterprises. while the other less developed intermediary cities concentrate colleges, universities, state services and also informal activities.
All young people living in urban and rural areas would have the same opportunities via digital job platforms. Formal companies would waste less time finding qualified and available people. In addition, companies would clearly communicate their human resource needs.
For companies, digitalization would mean more openness to the interregional and international market. It would allow them to develop internet sales channels and create this ecosystem favourable to the use of financial technology. These innovations provide access to a new way of analyzing, anticipating and managing financial flows while maintaining better control over activities and expenditure management. Without a digital economic environment, fintech cannot work.

The digitization of state services could solve the administrative burden responsible for the expansion of informal activities. Digitalization would make it possible to eliminate intermediaries to facilitate the registration of intellectual property or to register a company. The establishment of a legal document: passport; criminal record; ID card and many others would take less time. And state structures would be much more effective.
Governments could collect data for a variety of purposes. These data could be analyzed in order to solve or improve the state structure.

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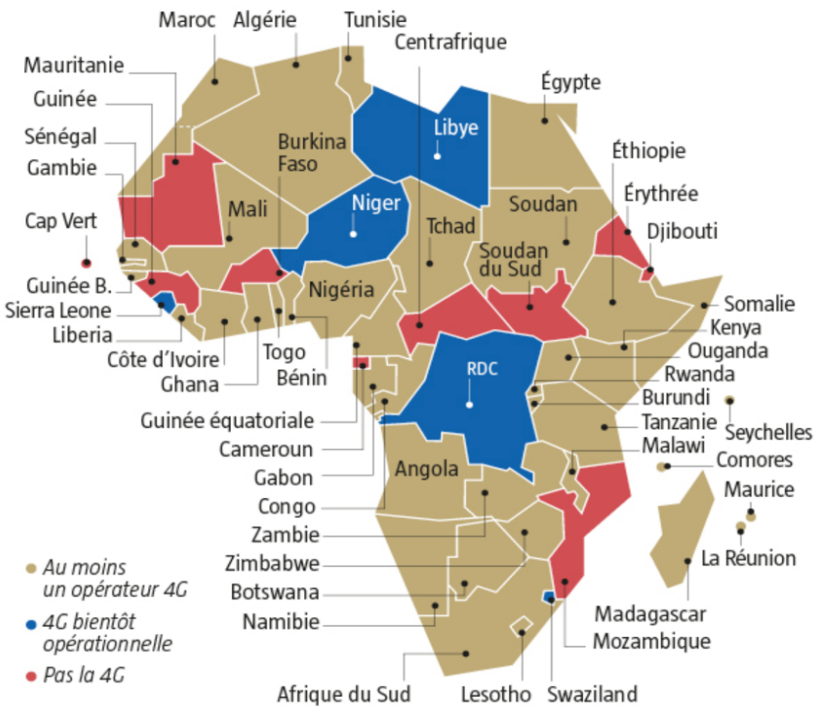
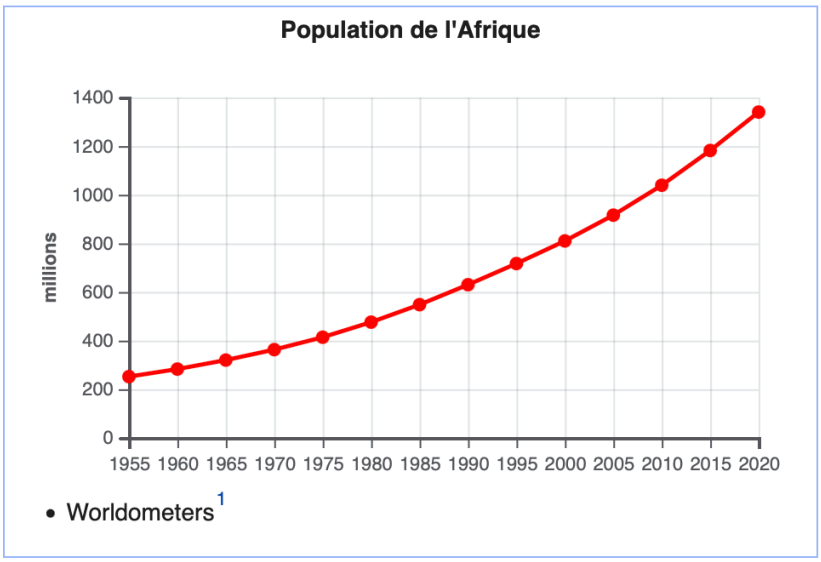
Appendices

Figure 1



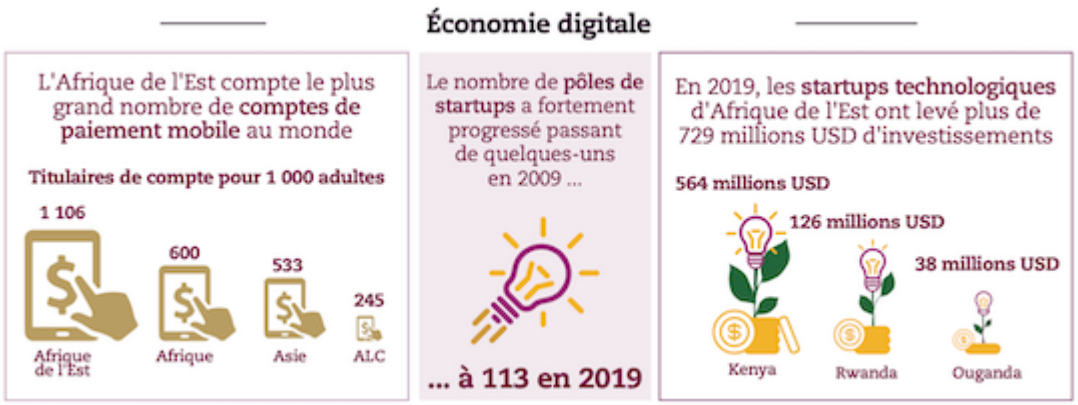
4G network in Africa

Figure 2



African Population

Figure 3



Est Africa

Figure 4

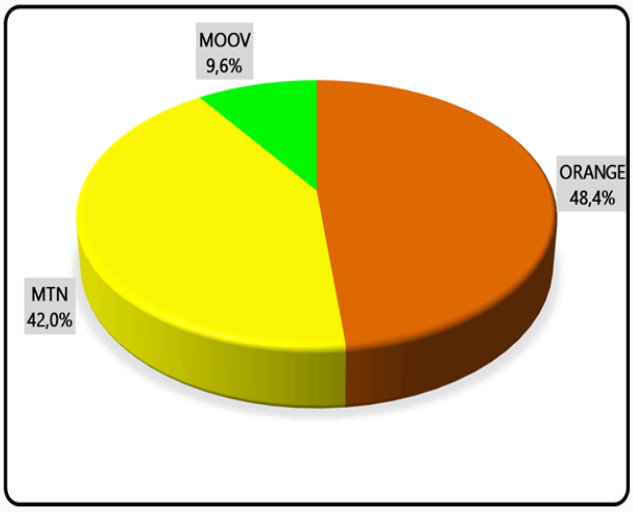
2. Parc d'abonnés au mobile money

2.1 Parc d'abonnés au mobile money au 31 décembre 2020

ORANGE	MTN	MOOV	TOTAL
9 847 106	8 563 327	1 954 703	20 365 136

Nombre d'abonnés au mobile money au 31 décembre 2020

2.2 Part de marché au 31 décembre 2020



Parts de marché selon le nombre d'abonnés mobile money au 31 décembre 2020

Figure 5

Tableau n°1 : Paysage de l'écosystème monétique régional de l'UEMOA

PAYS	Nombre de banques	Nombre de cartes	Nombre de GAB	Nombre de TPE
- BENIN	15	626 478	322	94
- BURKINA	15	709 533	455	282
- COTE D'IVOIRE	27	2 833 969	1 307	2 658
- GUINEE BISSAU	5	50 472	58	22
- MALI	14	583 894	525	210
- NIGER	14	141 164	206	71
- SENEGAL	25	866 188	561	3 167
- TOGO	13	435 089	264	511
UEMOA	128	6 296 787	3 698	7 015

Source : BCEAO, 2018

Figure 6

Encadré n°1 : Situation des Groupes bancaires dans l'UEMOA, en 2018

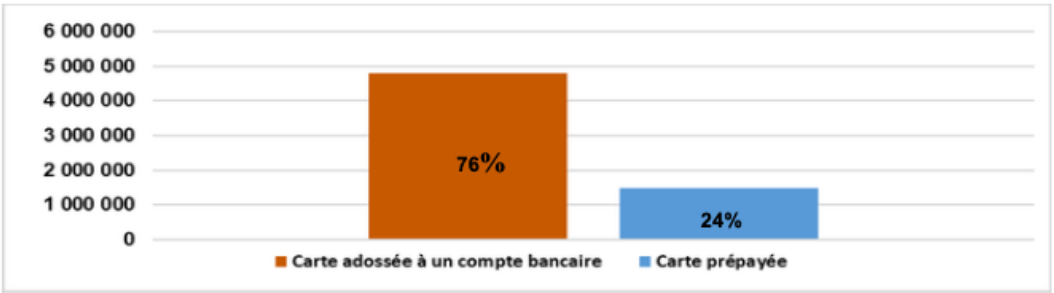
L'UEMOA compte 30 groupes bancaires dont 99 établissements de crédit affiliés. Parmi cet effectif, 12 groupes bancaires et leurs 77 filiales sont établis dans l'Union, et 5 de ces groupements sont issus de quatre pays de la zone, notamment le Burkina Faso, la Côte d'Ivoire, le Mali et le Togo.

Groupes	Pays d'origine	Nombre d'établissements
ATLANTIC BUSINESS INTERNATIONAL (ABI)	Maroc	9
ATTIJARIWAFA BANK	Maroc	9
ECOBANK	**Togo**	**8**
BANK OF AFRICA (BOA)	Maroc	8
ORAGROUP	**Togo**	**8**
BSIC	Libye	7
CORIS BANQUE INTERNATIONAL (CBI)	**Burkina Faso**	**6**
SOCIETE GENERALE	France	5
NSIA BANQUE	**Côte d'Ivoire**	**5**
BNP PARIBAS	France	4
BDM	**Mali**	**4**
UBA	Nigeria	4
TOTAL		**77**

Source : BCEAO, 2018

Figure 7

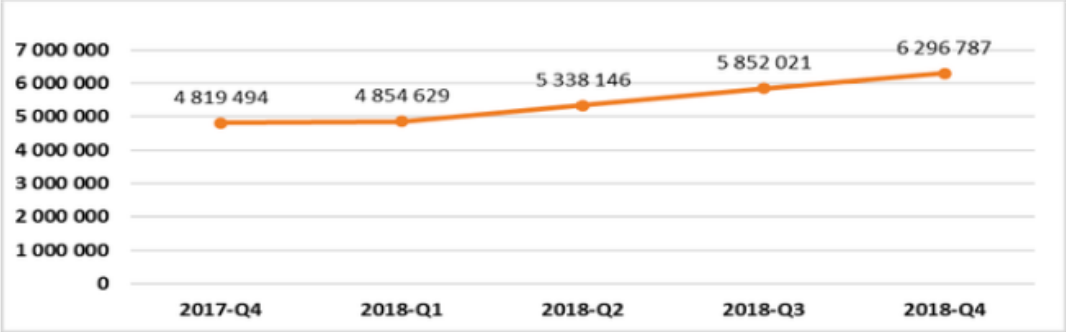
Graphique n°2 : Type de cartes dans l'UEMOA



Source : BCEAO, 2018

Figure 8

Graphique n°1 : Evolution du nombre de cartes en circulation de 2017 à 2018



Source : BCEAO, 2018

Figure 9

Graphique n°5 : Répartition des cartes par pays

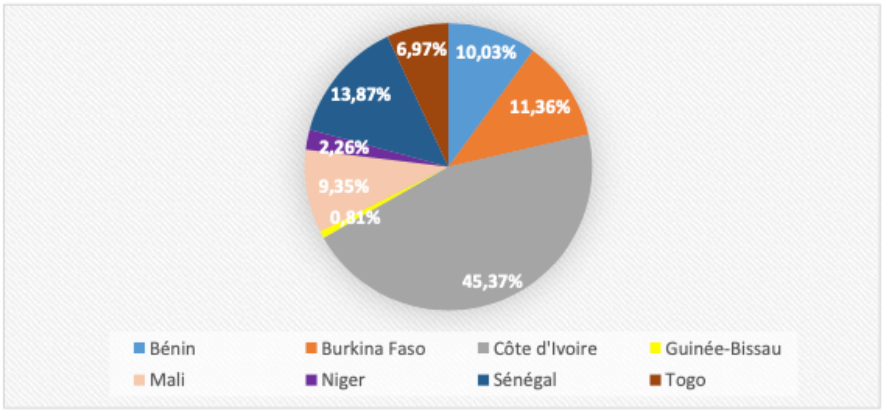
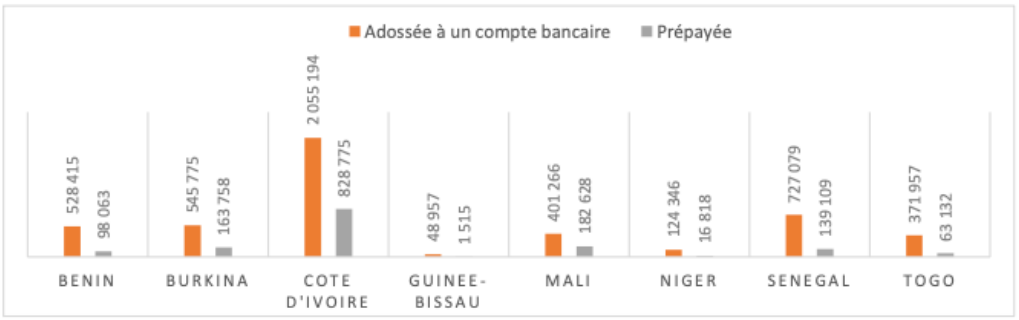


Figure 10

Graphique n°6 : Répartition des types de cartes par pays



Source : BCEAO, 2018