



# **Digital Financial Services**

## **Paving the way for women's financial inclusion in Tunisia**

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# **Degree Thesis**

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Digital Financial Services: Paving the way for women's financial inclusion in Tunisia

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## **Identification number:**

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## **Abstract:**

In an era marked by digital transformation and an increasing emphasis on financial inclusion, this thesis explores the pivotal role of mobile banking in addressing the multifaceted challenges faced by women in Tunisia. Leveraging a comprehensive research framework, this study investigates the adoption and utilization of mobile banking services among Tunisian women, with a keen focus on their satisfaction, financial empowerment, and inclusion. Through a combination of quantitative surveys, and data analysis, this research uncovers the intricate dynamics between mobile banking access, financial literacy, socio-cultural factors, and women's participation in the formal financial system. The findings illuminate the profound impact of mobile banking as a catalyst for financial inclusion, shedding light on its potential to bridge gender-based financial disparities and empower women economically. Ultimately, this thesis contributes valuable insights to the fields of gender studies, financial inclusion, and digital finance, offering a nuanced understanding of the transformative potential of mobile banking for empowering women in emerging economies.

## **Keywords:**

Mobile Banking, Financial Inclusion, Women, Tunisia, Gender Empowerment, Digital Finance, Traditional Finance.



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# 1 Research Topic

## 1.1 Introduction

Financial Inclusion is a set of methods that enable individuals, that are excluded from traditional banking circuits, to access affordable and adapted financial products. Regardless of personal net worth or company size, individuals can improve their life situations, save, and support their families. In developing countries where population are more so often excluded from traditional bank financing, financial inclusion has proven a positive impact, leading to growth (Ajide, 2020), generating wealth (Mader, 2017), and increasing consumption (Beck, Demiurgic, and Levine, 2004).

In 2014, the world bank Findex data indicated that only 20% of Tunisian women held an account in a formal financial institution. Four years later another report from the world bank demonstrated that poor women from rural areas were the most excluded from financial services. Across the country only one third of employees were women, and for equal work – similar title and position, women were paid 15% less than their male peers. Additionally, in 2018, only 18 to 23% business owners were women. Furthermore, compared to some other Arab countries Tunisia has the most progressive laws on women's rights, yet this did not exactly translate into women's participation in the economy.

To reinforce Tunisian women's financial inclusion, there is a need for financial education, knowledge, and access to services. Addressing this urgency, the Tunisian Government recognized financial inclusion as a priority area in governmental programs and aimed to modernize the financial sector (World Bank Group, 2018).

The topic of financial inclusion also reemerged at the front scene during the pandemic. Financially excluded population and minorities were challenged by this unprecedented economic crisis. Access to banks and other financial services became even more difficult in an environment where financial services were already scarce.

In parallel, the adoption of digital financial services has increased substantially during and post-pandemic, particularly in developing countries. About 40% of adults in developing countries

made a digital merchant payment, and one-third reimbursed a utility bill directly from an account for the first time after the onset of the pandemic (World Bank Group, 2021).

It is fair to say that the world has been undertaking for years a digital shift with the proliferation of digital financing services. Nevertheless, the pandemic seemed to have accelerated this shift and paved the way for the expansion of financial technologies all over the world.

Developing economies seem to have been positively impacted by financial digitalization on multiple levels post-pandemic. According to the world bank report from 2021, account ownership rose from 63% to 71% of people in developing countries, making it an increase by 8 percentage points. Furthermore, the gender gap that has been stagnant at 9% points for several years has dropped down to 6%. Moreover, receiving digital payments such as wage payments, catalyzed the use of other financial services, such as saving, storing, and borrowing money. In short, evidence is pointing out that mobile banking, and other digital financial services, are the gateway to financial inclusion in developing countries.

## **1.2 Research Aim**

Literature to date has focused on different angles regarding financial inclusion as whole; Why is financial inclusion essential to developing countries, the barriers to women's financial inclusion, the gender gap within financial inclusion, digitalization of financial tools and their benefits to developing countries. However, little study has been dedicated to the correlation between adoption of financial technologies by women in Tunisia and their financial inclusion.

With a large majority of Tunisian women being still unbanked and a potential room for growth in the Tunisian overall market, it is crucial to define a solution to speed up financial inclusion. Additionally, in a society where cash is becoming scarce and financial digital tools are booming, it is valuable to identify how to include financially excluded individuals in the mix.

Therefore, the aim of the study is to recognize how digital financial services can empower women's financial inclusion and thus, regulates the prevailing gender gap in the Tunisian economic market.



### **1.3 Research Questions**

The problem this study addresses revolves around the following: “How can mobile banking foster financial inclusion of women in Tunisia?”. To do so, the study is divided into two research parts.

The primary objective of the first section in this thesis is to provide a comprehensive analysis of the influence of mobile banking on the financial inclusion of Tunisian women.

What is the impact of Mobile banking for women in Tunisia?

The second segment of the thesis intends to find out what are preferences of Tunisian women in terms of utilizing traditional banking services or mobile banking. Additionally, the section aims to identify the significant factors that play a role in influencing their decision-making process. Thus, identifying areas of improvement to enhance the effectiveness of mobile banking initiatives.

What are the factors that influence the use of mobile banking?

## 2 Theoretical Framework

### 2.1 Financial Inclusion

#### 2.1.1 Concept and Evolution

##### A. What is Financial Inclusion?

Financial inclusion is a highly contested term, due to the numerous actors, contexts and range of places it can be applied to (Kirwan, 2021). The Center for Financial Inclusion (CIF) has been tasked to define the term to settle an agreement between all key actors for an effective interpretation. Updated on October 2018, CIF determines financial inclusion as:

*“a state in which all people who can use them have access to a full suite of quality financial services, provided at affordable prices, in a convenient manner, and with dignity for the clients. Financial services are delivered by a range of providers, most of them private, and reach everyone who can use them, including disabled, poor, rural, and other excluded populations.”*

There are other definitions, with subtler or clearer differences, that are used interchangeably depending on the context or the intervention that is drawn to the term. Hence the ongoing never-ending tension over Financial Inclusion’s proper definition.

In his book titled Financial Inclusion, Samuel Kirwan discusses the polarity of Financial Inclusion’s definition. He revised why there are so many controversies regarding the term and its use. As a solution, he proposes a theory of “three axes in which financial inclusion, as well as programs, interventions, initiatives, and instruments, can be positioned”.

- The First axe: describes reforming conditions and reforming the subject.
- Second axis: denotes the primary objective of financial inclusion.
- The third axis: describes the difference between financial inclusion and the increased use of specific services.

This theory helps to map out which definition is the most appropriate in different case scenarios. In addition to this concept, Kirwan points out a key distinction between “developing

and developed contexts” qualified in his terms by the distinction between “Global North and Global South”.

*“... in the Global South, financial inclusion programs tend to focus upon changing conditions, whether geographical, technological, sociological or to do with the approach and practices of financial services, while in contrast, in the Global North, the predominant focus in policy programs has been upon changing the financial subject.” (Kirwan, 2021).*

This divergence is crucial to mention as this thesis's aim is to study the financial inclusion of women in Tunisia. As the latter is part of the Global South, financial inclusion is about removing geographical, historical, and financial barriers to enable individuals to achieve their higher potential (Kirwan, 2021).

## **B. The importance of Financial Inclusion**

At the G20 summit in Seoul financial inclusion has been recognized as a pillar in the global development agenda, which prompted the World Bank to establish reforms and objectives of universal access to financial services. Since 2011, 60 countries have updated their reforms to foster an improvement in financial inclusion.

Empirical studies have shown that there are several benefits to financial inclusion. Primarily, it is considered a major strategy to achieve economic goals and contribute to economic growth (Siddik, 2017; Demirguc-Kunt et al, 2013). To support that idea, Rym Baccour develops it in her study as a domino effect. Through the increase of actors, volume, and value of financial systems, financial inclusion prompts the efficiency of financial intermediaries. In return, the development of financial intermediaries enables the diversification of risks which in consequence prompts financial stability. The latter contributes directly to new businesses being born, which diminishes the utilization of informal or non-regulatory financial services (Baccour, 2020).

Macroeconomically, financial inclusion “*pushes forward the evolution of the whole financial systems through the emerging of new economic models*” (Baccour, 2020), which confirms the hypothesis of (Benhabib & Spiegel, 2001) that economic growth is supported by financial intermediaries through the increase of a total factor of productivity.

On top of that (Yusifzada & Mammadova, 2015) did highlight that access to financial services brought more benefits to lower-income individuals.

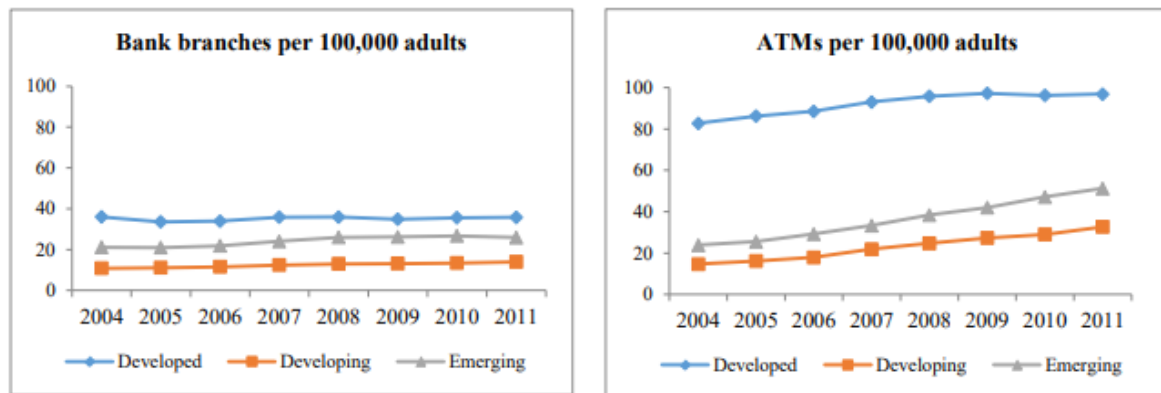


Figure 2-1 Bank Branches and ATM's (Yusifzada & Mammadova, 2015)

As Figure (2-1) demonstrates that there is a clear upward trend in access to ATMs, especially in developing and emerging countries. However, as the (Yusifzada & Mammadova, 2015) analysis demonstrated, developed countries have a considerable advance. Another important point their study divulges is that offering services outside banks' office buildings through external ATMs did improve access and use of ATMs.

On a micro economical level, financial inclusion increases levels of employment by fostering the growth of small and mid-size enterprises (Ajide, 2020), which are enterprises that are generating the most jobs in a growing economy (Baccour, 2020). Consequently, financial inclusion enables individuals to increase their life quality and well-being (Mader, 2017) which simultaneously drives up consumption (Beck, Demiurgic, and Levine, 2004).

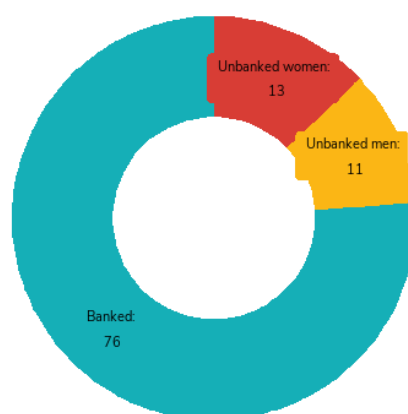
## 2.1.2 Women's Financial Inclusion

### A. Gender Gap in Financial Inclusion in Developing Economies

Account ownership reached 76% in 2021 worldwide. Both high-income and developing economies have registered growth. However, developing economies have seen most of that growth during the past decade. Data gathered by (World Bank Group, 2021) attest to that claim by registering a rise from 42% in 2011 to 71% in 2021 in account ownership in developing economies. Although individual economies have all seen growth at different rates. For

example, Nigeria's account ownership increased by 16% while South Africa's registered an increase of 25% or more (World Bank Group, 2021).

**The majority of unbanked adults worldwide are women**  
All adults with and without an account (%), 2021



*Figure 2-2 Percentage of unbanked individuals by gender ( World Bank Group, 2021)*

Yet, inequalities between genders are persisting. Globally, 13% of women are unbanked, compared to 11% of men (see figure 2-2). The gender gap in account ownership in developing economies has been hovering at 9% for- several years and has finally fallen to 6% in 2021. (World Bank Group, 2021). However, as the report suggests, different trends could be observed in individual economies.

**Developing economies have varied widely in how effectively they tackle the gender gap**  
Adults with an account (%), 2017–21



*Figure 2-3 Gender Gap through different economies (World Bank Group, 2021)*

According to Figure (2-3), In Peru and Mali, account ownership for women doubled which reduced the gender gap notably. In opposition, Cote d'Ivoire's gender gap doubled. Bangladesh demonstrates no growth in overall account ownership, although (World Bank Group, 2021) cites that growth in mobile money accounts for women, explains the narrowed gender gap. Meanwhile, Tunisia registers neither growth nor decline in gender gap.

Pakistan has also seen account ownership doubling since 2011, however, as (Arnold et al., 2020) describe most growth was driven by male account ownership. Additionally, in Ethiopia, since 2014, account ownership by man increased twice as much as the increase among women.

The negative gender disparity could be explained by financial inclusion barriers faced by women generally while trying to access financial services. (Benyacoub, 2021; Arnold et al., 2020; Demircuc-Kunt et al, 2013)

## **B. Financial Inclusion Barriers**

Women do face greater challenges than men to be financially included in developing societies and they are several reasons that attest to that inequality. (World Bank Group, 2018; Ziadi, 2014; Özşuca, 2019).

As defined previously, The CIF's financial inclusion definition highlights the following four main key works.

- **Access:** *"The availability to a given person of affordable and appropriate financial services."* (Accion , 2018)
- **Usage:** *"The act of employing or utilizing a financial service."* (Accion , 2018).  
Usage is often used as a proxy for access because it can be measured directly.
- **Affordability:** *"Describes products for which the price is in line with the client's ability to pay for them"* (Accion , 2018)

- **Quality:** *“Quality includes the following traits: affordability, convenience, product-fit, safety, dignity of treatment, and client protection. Quality refers to product design and delivery traits that enhance the value of services to clients.”* (Accion , 2018)

Essentially studies have determined that access, usage, affordability, and quality are some of the most important and common barriers to the financial inclusion of women in many developing countries.

First and foremost, CFI’s account on Normative constraints to women’s financial inclusion specified that social and gender norms play a major role in women’s access to financial services. Social norms are *“implicit and informal rules, attitudes, behaviors, and values that the majority accept and follow”*. Gender norms on the other side are a *“subset of social norms that pertain to how people of a particular gender are expected to behave”* (Arnold et al., 2022). The negative impact of norms is that they shape and narrow people’s thinking, putting certain aspects of living in specific boxes, additionally they influence how people should live, behave, and make decisions. Research has also shown that norms are difficult to measure as they can be different and specific in different environments (Arnold et al., 2022).

Tunisia, Niger, Morocco, Chile, and Bahrain are among 30 economies where married women cannot for example perform some actions in the same way as married men. (World Bank Group, 2018).

*Table 2-1: Gender norms influencing behaviors. (Arnold et al., 2022).*

Emmanuel		Grace	
Behavior	Norms	Behavior	Norm
Handles the money	Men are the financial Providers	Cares for children and elderly parents/ in-laws	Women are the caregivers
Speaks with vendors	Men can talk to strangers, other men	Household chores Restricted mobility	Household duties are a woman’s job
Makes household and business decision	Men are the head of household	Makes the pots and cups (impacts time use)	Women support spouses in all activities

Through the fictive story of Emmanuel and Grace in the table (A) above; the report argues that Grace's access and ability to use formal financial services were influenced by care responsibilities, education levels, and paid work.

This idea is supported by Bouchra Benyacoub in her study of barriers for financial inclusion of women in Morocco. Women that had completed Upper Secondary Education and have been or are enrolled in a university were more likely to have at least one bank account. Women that also earned 3000dh or higher, which is 280 equivalents in euro, were also more likely to have a bank account. (Benyacoub, 2021).

Additionally, financial education promotes the understanding of offered and available financial tools which promotes their use of them. In the same study conducted by Benyacoub, 73% of respondents affirm that they need financial education. When asked to identify specific financial terminology only 18,2 % knew what Bank checks are, 10,8% knew what microcredit serves as and only 2% were familiar with Term Deposit. See table (B) below. (Benyacoub, 2021).

*Table 2-2: Distribution of respondents by their knowledge of finance. (Benyacoub, 2021)*

	Percentage
Bank Check	18.2 %
ATM	16.4%
Fund Transfer	15.5%
Disposal Account	11.6%
Savings Account	14.1%
Microcredit	10.8%
Mourabaha*	7.3%*
Treasury Bond	4.0%
Term Deposit	2.0%

The lack of education and knowledge about offered products and possibilities generates a mistrust of financial services in general. Therefore women do not seek the services that are already accessible for them (Benyacoub, 2021). 36% of unbanked adults worldwide cited the high cost of financial services as hindering their ability to get access to any financial services (World Bank Group, 2021). Additionally, affordability is indeed affected by social and gender norms. (Arnold et al., 2022).



Tunisia amongst 16 other countries have gender bias in personal income tax regulation, it translates simply that women tend to pay higher taxes on their income, which therefor may affect women's choice of even entering the workforce. (World Bank Group, 2018). Besides financial institutions have been built into a criterion that heads of households, which are often men, have access to collateral through assets or social networks. (Arnold et al., 2022). Alongside that argument, women are perceived by banks as riskier clients (World Bank Group, 2018), which results in formal financial services catering mostly to existing clients and not develop quality offerings to a market segment that clearly needs it. The lack of care and quality tailored services yields into women feeling disappointed in banks and strengthen the mistrust between both parties (World Bank Group, 2018; Benyacoub, 2020).

This argument is reinforced by Manar Korayem's statement *"Banks wait for women to approach them, which eliminates a considerable number of women from the start"* (World Bank Group, 2018).

As a result of what has been mentioned so far, the low use of financial products entertains the vulnerability of financially excluded individuals. Maintaining the excluded in a vicious cycle of; no-access to needed financial products, inability to survive income shocks, and inability to invest, save and plan, which resumes in an inability to grow and improve their life situations. (Demirguc-Kunt, Klapper & Singer, 2013)

The barriers previously discussed do bring in light several areas worth of focus for policy makers, governments, organizations, and institutions to make changes for women's economic empowerment. Emerging evidence points out that digitalization of finance and mobile banking might be the tipping point to achieve faster rates for women's financial inclusion. (Arnold et al., 2022)

## **2.2 Digitalization of the financial sector**

### **2.2.1 Mobile Banking's Concept & Evolution**

Literature has been found to have a divide regarding the terms mobile banking and mobile payments. As (Chitungo-Kasai, 2013) explains, sources have argued that mobile banking and

mobile payments are analogue terms, used interchangeably with mobile finance as well. On the other side, studies determine mobile payments as a function within mobile banking. This study will adopt the later explanation and adopt mobile banking and mobile payments as two separate entities.

(Accion , 2018) defines Mobile Banking, as the provision of transactional or non-transactional financial services, meaning the act making monetary transactions or accessing financial services, using a mobile device. (Singhal et al., 2019) further explains that mobile banking consists of three interrelated concepts: Accounting services, brokerage services and financial information, all three on mobile phones. Services offered by mobile banking vary from bank to bank around the world. In brief, the essence of mobile banking is providing customers with easy and effective access to finance without the handling of cash (Jayathilaka & Madhavika, 2021).

Over the years, mobile banking has evolved and transformed owing to technological advancement. (Singhal et al., 2019) establishes that the primary M-Banking services and payment schemes were to be born in 1999. Paybox, a German company assisted by the Deutsch Bank, and Mobi Pago, a Spanish initiative later renamed as Mobi Pay, were the early starters of Mobile banking journey. Other initiatives and pilot surveys were tested but got rapidly discontinued or never became famous among users because *“of the unattractive phones that were required to access the services.”* (Singhal et al., 2019). Until recently, mobile banking was carried out using SMS services mostly, nowadays most banks are offering applications that can be installed into customer’s mobile device (Jayathilaka & Madhavika, 2021).

Traditional Banking have a structural organization that is more rigid than mobile banking. As both offer similar services, the main difference is characterized in which platforms are used and processes that go behind those services (Baccour, 2020). Two features seemingly have attracted customers to mobile banking. Firstly, mobile banking offers instantaneous and automated services which facilitate their use. Secondly, mobile banking enables saving money both for the bank and its customers. As online transactions result in savings, banks offer customers better interest rates or rewards for maintaining their online account. (Singhal et al., 2019).

As Covid-19 Pandemic evolved from a health crisis to a large-scale economic crisis it accelerated the use of mobile banking globally. (Arnold et al., 2020; World Bank Group, 2021; Ben Youssef, 2021) In 2020, mobile money accounts reached 300 million, estimating a growth of 17% over one year (Arnold et al., 2020). Accessing financial resources in developing economies for rural individuals was already difficult, but the pandemic seemed to highlight inequalities between high-income and low-income countries and individuals. The pandemic reshaped the way consumers behaved, but also how society cared for its people and especially the ones mostly in need (Baccour, 2020).

### **2.2.2 Mobile Banking in Developing Economies**

Bills Gates from Microsoft wrote in 2015 and predicted *“By 2030, 2 billion people who don’t have a bank account today will be storing money and making payments with their phones. And by then, mobile money providers will be offering the full range of financial services, from interest-bearing savings accounts to credit to insurance.”*

In 2017, Global Findex data highlights that mobile phone ownership is spread amongst the unbanked. 1.1 billion unbanked adults, meaning two – thirds of those, have a mobile phone. (World Bank Group, 2017) According to (Baccour, 2020) citing [Owens, 2013], the utilization of mobile technologies to improve financial inclusion of unbanked individuals has increased since 2004. On top of that, a decade later, 2014, the Global Findex Survey began to investigate the use of mobile money services of their survey respondents (World Bank Group, 2021). While comparing gathered data from 2014, 2017 and 2021, survey disclosed that mobile money accounts contributed to 8% increase in account ownership in developing economies, whereas financial institution accounts ownership did barely increase.

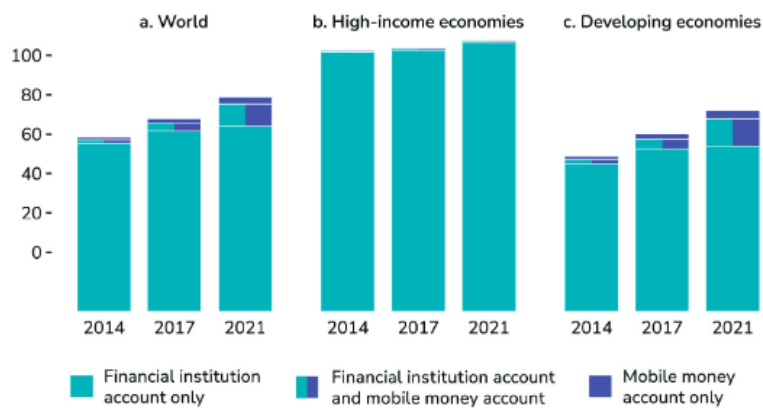


Figure 2-4 Account ownership (World Bank Group, 2021)

Ghana for example, has been stagnant in financial institutions accounts since 2017, yet has seen an increase of 21% of mobile money accounts. Zambia on the other hand has noted that overall account ownership remained stagnant from 2017-2021, but simultaneously mobile money account ownership increased by 14% (World Bank Group, 2021).

According to (World Bank Group, 2021), mobile money accounts were majorly concentrated in East Africa. Since then, mobile account ownership has spread to West Africa and beyond. Growth has been happening but at different rates across countries. (World Bank Group, 2021) uses the data to argue that mobile money accounts are “*not an addition for people that already have an account*”, but instead they are keys that guarantee access to financial services.

Several studies and success stories, such as India and Kenya for example, also support the idea that mobile money and banking are key enablers for financial inclusion as they remove previously discussed barriers to access affordable and quality assured financial services. As discussed previously, mobile banking satisfied customers by offering immediate and efficient services, enabling simultaneously to save money. Yet, as (Chitungo-Kasai, 2013) describes, these advantages are tremendous for individuals that live in rural areas. Where traditional financial institutions are not to be found, mobile banking removes the geographical constraints, bringing a service that is immediate, secure, and efficient. However, as other studies point out, several areas in developing countries have yet to have access to mobile coverage or internet for mobile banking to be used. Nonetheless as success stories of India and Kenya do point out, mobile banking has been effective in driving financial inclusion forward.

As demonstrated previously, studies have found out that women are less likely to be financially included in developing economies. (Chitungo-Kasai, 2013; Baccour, 2020; Arnold et al., 2020) argue that mobile banking could be solutions to narrow the prevailing gender gap in several economies.



*Figure 2-5 Account ownership & Gender Gap (World Bank Group, 2021)*

As figure (2-5) suggests, within all age groups, there is barely a notable difference between men and women's ownership of mobile accounts. On the other hand, men are at least 5% are more likely to own a financial institution account. It is important to note that adults who are older, over 51 years old, are less likely to have a mobile account than their younger peers (World Bank Group, 2021); This trend could be explained that technology can seem daunting to older consumers who may prefer traditional banking and financing methods.

**In Sub-Saharan Africa mobile phone ownership offers large opportunities among the unbanked**  
Adults without an account (%), 2017

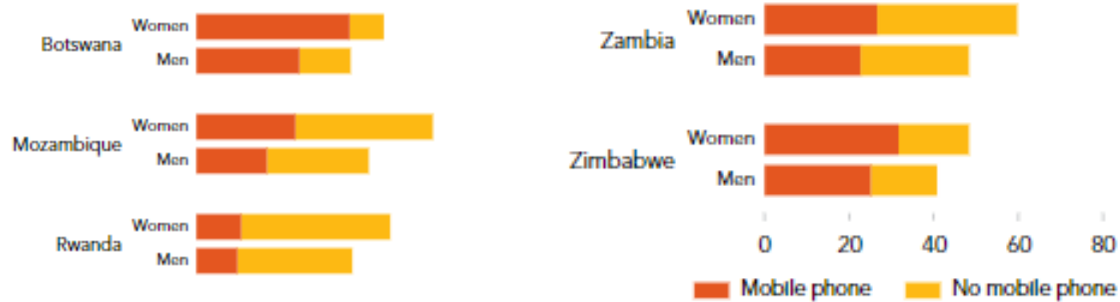


Figure 2-6 Percentage of account & mobile phone ownership (World Bank Group, 2021)

However, as account ownership gender gap seems to be alleviated with, the use of mobile phones (World Bank Group, 2017; Arnold et al., 2020), it seems important to note that in contrast owning a mobile phone still differs between gender. (World Bank Group, 2017) reveals that among unbanked women and men that globally unbanked women are 10% less likely to own a mobile phone.

In Sub-Saharan African countries, women are 11% less likely to own a mobile phone. Still in contrast, the Graph from the same study shows that in Botswana and Senegal, unbanked women are as or even more likely to own a mobile phone. (Arnold et al., 2020) contests those findings by asserting that there continues to be a 15% gender gap in mobile phone ownership overall.

In (Arnold et al., 2020) study, gender gap in mobile phone ownership is similarly explained as the gender gap in account ownership. According to gender norms, women are less likely to own a phone. However, as data by (World Bank Group, 2021), the gender gap in mobile phone ownership is smaller, and more women than man who own a phone decide to use informal financial services.

## 2.3 Tunisia's Landscape

Tunisia has seen rapid economic growth in 2000's becoming more open and integrated; however, it came to halt in 2011, during the revolution. Afterwards, the government's ambitious

agenda aimed to pursue a strong and sustained economic growth. GDP saw an expansion of an average of 4.2% prior to the revolution, between 2000 and 2010, yet the growth rate was of 1,7% post revolution, between 2011 and 2019 (IMF, 2020).

The multiple governments that succeeded each other brought political instability and poor governance. This chaos resulted in an inability to correctly implement reforms, build a stable business climate, and generate higher levels of investments (Youssef, 2021).

As a matter of consequence, foreign direct investment declined sharply after the revolution registering a decrease of 47% from 2012 to 2019 (World Bank Group, 2020). To tackle this negative trend the government passed legislations to simplify procedures to permit foreigners to work and do businesses.

Post revolution, public expenditure has also risen, therefore increasing Tunisia's public debt. Between 2010 and 2019, public debt increased by 95%, from an estimate of 40% of GDP to an estimate 73% of GDP. (Kwasi et al., 2020). From 2019 public debt continued to rise and have been estimated at 86.6% of GDP in 2020. (World Bank Group, 2020). Public debt is putting Tunisia at greater risk to resist to financial shocks. Additionally, it also reduces available liquidity for private sector, hindering private investments and attractiveness of the Tunisian Market. (Kwasi et al., 2020)

The poverty rate have been declining since 2010. Data demonstrates a decrease of 40.15% in 15 years, from 25.4% in 2000 to 15.2% in 2015 (Youssef, 2021). Additionally, less than 1% of Tunisian population fall below US\$1.90 of earner income per day, which entails that Tunisia is already achieving Sustainable Development Goal of eliminating extreme poverty. Yet, a closer look to data reveals that rural areas and youth are disproportionally affected by poverty (Kwasi et al., 2020).

The general unemployment rate registered its lowest point in 2008 at 12.4%. In 2011 year of the revolution, it spiked up to 18.3%, then decreased steadily until 2019 where it reached 15.1%. This decrease was halted due to covid, and unemployment rate reached 16.8% in 2021 (World Bank Group, 2020). In comparison, women unemployment rate was estimated at 24.7% in 2021. As (Youssef, 2020) argues, women and youth are the most affected by unemployment.

### 2.3.1 Women in the Financial System in Tunisia

Tunisia counts a large number of local and foreign-backed banks from the public and private spheres, yet many Tunisians were unable to access financial services. Proximity to financial services is an important building block of improved financial inclusion, and on this metric Tunisia had 18.2 commercial bank branches per 100,000 adults in 2013 compared with 24.1 in neighboring Morocco (World Bank Group, 2018). Moreover, interior regions of Tunisia are underserved due to the concentration of banks in the coastal area, which leaves a part of the population unable to find accessible traditional banking services.

(World Bank Group, 2021) Account ownership of women over 15 years old was identified to be of 28,75% in Tunisia, while neighboring countries, Morocco, and Algeria, registered respectfully 32,70% and 31,19%. Financial penetration in Tunisia is slower, yet not at all time low compared to other developing countries.

Indicator	Value
Account (% age 15+)	36.85%
Account, female (% age 15+)	28.75%
Account, male (% age 15+)	45.14%
Borrowed any money from a formal financial institution or using a mobile money account (% age 15+)	10.33%
Borrowed any money from a formal financial institution or using a mobile money account, female (% age 15+)	9.45%
Borrowed any money from a formal financial institution or using a mobile money account, male (% age 15+)	11.22%
Saved at a financial institution or using a mobile money account (% age 15+)	14.79%
Saved at a financial institution or using a mobile money account, female (% age 15+)	11.48%
Saved at a financial institution or using a mobile money account, male (% age 15+)	18.17%

*Figure 2-7- Financial Inclusion disparities between men and women (Global Findex Database, 2021)*

As presented in figure (2-7), 28,75% of women own an account while 45,14% of men do, which is a considerable difference of 16,39%. The disparity is not specific to account ownership only, women borrow less than men by 1,77% and save less by 6,69%. These differences are lower than account ownership but still remarkable.



Since 2011 the Tunisian government recognized gender disparities on economical level and identified financial inclusion as a priority area, which prompted the authorizing and the establishment of credit institutions dedicated to low-income people. The government also created a modern regulatory agency called ‘the Microfinance supervisory authority’. Beyond micro-lending, the Tunisian Ministry of Finance aimed to modernize the entire financial sector in Tunisia by 2020; however as further data and studies suggest; modernization is slow, and reforms take time to put in place and record change (World Bank Group, 2018).

Furthermore, as Chedly Ayari, Governor of Bank of Tunisia, stated Tunisia is achieving progress dynamically if different parts of the country and as much as the solution for financial inclusion revolves around money and resources, a big part can be tackled through culture and education. Ayari summarizes it as the need for a ‘*cultural revolution*’. (World Bank Group, 2018)

### **2.3.2 Mobile Banking in Tunisia**

#### **A. Digital Technologies: Diffusion is rapid, yet Penetration is low**

Tunisia’s digital infrastructure has been improving during the past years, owing to the waves of new digital technologies that are, as of consequence, fostering opportunities for growth. The country’s economic landscape is observing and will continue to undergo a major transformation lead by digital services that are removing sectoral barriers, introducing modification and improvements to available services, and launching new range of services and goods.

Within the two last decades internet penetration has increased exponentially, in 2020, 72% of the Tunisian population was using the internet. Mobile phone ownership and usage observed the same trend. Data from (World Bank, 2020) states that in January 2020 17.77 million mobile connections were registered. That number increased to 17,84 million in January 2021.

Compared to other African countries Tunisia is a ‘*mobile focused country*’, offering good internet speed and quality. Most of the population has access to at least 3G internet. Nonetheless due to better infrastructure and public services, big cities have better quality of bandwidth and coverage, leaving poorer regions underserved (Youssef, 2021).

Compared to Europe or Asia, Tunisia's internet infrastructure is lacking progress and falling behind. Furthermore, as many countries have implemented 5G, Tunisia is facing challenges to do so. Infrastructure matters, the higher the quality of it, the more it increases e-uses which consequently has positive effects on productivity and growth (Youssef, 2021).

## **B. Mobile Banking Post Covid-19**

Covid 19 has reshaped the way society operates. Tunisia, like globally had to undertake measures to survive this sanitary crisis. Due to isolation and restriction of movement, the government opted for digital technologies to enable to use of banking services. Concretely, a digital wallet has been deployed from May 6, 2020. This new solution allows every Tunisian to create their virtual wallet on their mobile, to receive money, and to pay with it with ease. Individuals registers to the platform by choosing one of the 3 public banks (BNA, BH and STB) or the Post Office. As soon as eligibility is verified, the user receives a code and can withdraw his money (cash out) from any distribution point: post offices, bank branches and ATMs. The project was able to succeed thanks to the great mobilization of several ministries, the BCT, the Post Office, the banks, the SMT, the CNI and others for the distribution of social aid. Objective which has been achieved since was more than 350,000 registrations. (Baccour, 2020)

It seems that Covid-19 encouraged and strengthen the use of mobile banking in Tunisia. Perhaps it did but it also unveiled the underdevelopment of the digital area in Tunisia, and the low level of use of remote services during this period testifies to this. When talked about the use of digital, it essentially implies e-commerce, electronic payment, and digital finance. (Youssef, 2021) demonstrates the favorable impact of digital activities on the economy: financial inclusion, decashing, transparency of financial transactions, reduction in the operating costs of the State, improvement of the liquidity of the financial system, to name a few. Yet there is a lot of room for improvement to promote the use of digital banking, in Tunisia. International players such as PayPal, Uber, Amazon, etc., as well as certain international activities such as Data Mining and Crowdfunding do not exist. The application for an international payment card is also not given to everyone. Few banks can provide remote services, other than ATM withdrawals or account statements. In some countries, these transactions are routine thanks to online payments and mobile payments. (Youssef, 2021)

In Tunisia, digital banking is a real investment problem due to the paradox of the Tunisian financial sector: many banks but very little competition. *“The fragmentation of the Tunisian banking system and the monopole detained by the SMT, partner of the banks in charge of payments and withdrawals by bank card, could explain, despite the notable progress and the undeniable achievements already made, the disappointing performance of the online payments sector since these two factors are hampering the effectiveness of the digitalization of payments.”* (Baccour, 2020).

### **3 Summary of discoveries**

A significant finding highlighted in the literature is the persistent gender gap in financial inclusion, particularly in developing countries. Women in these regions encounter greater challenges compared to men when it comes to achieving financial inclusion. These challenges encompass issues related to access, usage, quality, and affordability of financial services.

Several factors contribute to this gender inequality in financial inclusion. One key factor is limited access to financial services, which can be attributed to barriers such as lack of education and societal norms and beliefs that hinder women's participation in the formal financial sector. These factors collectively build and reinforce the challenges women face in achieving financial inclusion in developing societies.

The literature also introduces the concept of mobile banking, defined as the provision of financial services using a mobile device, which includes both transactional and non-transactional services. Mobile banking has the potential to bridge the gender gap in financial inclusion by offering convenient and accessible financial services through mobile devices.

However, the review notes that the penetration of mobile banking is occurring at a slow rate, which is the case in Tunisia. One of the significant challenges in expanding mobile banking services is the issue of connectivity. Insufficient network coverage and internet access in rural or remote areas can impede the adoption of mobile banking, limiting its potential to promote financial inclusion to the population that needs it.

In summary, as this research paper aims to investigate, could Tunisian Women benefit from mobile banking to narrow the existing gender gap. What are the factors that could enhance women's knowledge and access to mobile banking?

### **3 Research Design**

In this section of the thesis, the author intends to describe and justify the chosen method of conducting the empirical study. This chapter includes the research approach, used method, data collection process, how the data is analyzed, and the study's trustworthiness.

There are two main methods of research to choose from: quantitative and qualitative. The former is a set of techniques, strategies and assumptions used to study a phenomenon through logical numerical patterns and statistical procedures. Data is often collected and analyzed through questionnaires, structured observations, or experiments. Qualitative research on the other side focuses on the 'why' rather than 'what' of social phenomenon.

Qualitative research involves the collection of data through stories, conversations, interviews, life experiences, and other similar data sources. (Coghlan D, Brydon-Miller M, 2014). There further exists the mixed methodology approach which is the combination of elements from quantitative and qualitative research in order to explore and answer research topics. This method can be used to gain a greater understanding and picture of a research problem.

For the empirical part of this thesis, the quantitative method was chosen as the main research method in a questionnaire. However, the author deemed it was important to collect unique insights from the participants, which came in the form of open-ended questions in the survey.

#### **3.1 Methodology**

As discussed in the introduction the thesis seeks to answer the following questions:

1. What is the impact of Mobile banking for women in Tunisia?
2. What are the factors that influence the use of mobile banking?

To best understand and answer each of these questions, the author decided to approach the thesis topic through a quantitative research perspective. This method is found by the author to be the most suitable for three main reasons. Firstly, "quantitate data is objective and relies on concrete numbers and fewer variables, which can remove biases and make the findings more accurate." Secondly, quantitative research is often used to study a fact or a phenomenon of the

population, which is exactly what this thesis aims. Lastly, the quantitative method allows for reaching a larger sampling size, which allows for making a more accurate generalized analysis and conclusion (Kothari, 2004). Therefore, a questionnaire was chosen as a data collection instrument.

By incorporating qualitative research methods, in the form of open-ended questions in the survey, the author aims to delve deeper into understanding the reasons behind women's reluctance to adopt mobile banking and explore their perceptions of this technology. This approach enables the researcher to gain insights into the subjective experiences and perspectives of women regarding mobile banking, providing a nuanced understanding of their attitudes, beliefs, and concerns.

Both primary and secondary data were used for the research. Primary data is data collected through researching while secondary data is what already exists in the document storage and has been statistically compiled and analyzed (Kothari, 20004). Primary data was gathered through a questionnaire whereas secondary data was gathered from compiled statistical data published by the World Bank and Tunisian Federal Bank.

## **3.2 Structure of the Survey**

In this research work, a quantitative study was conducted using a questionnaire survey, addressed only to women, and consisting of 27 questions relating to demographic, socioeconomic, professional, and financial characteristics. (See appendix for the full survey in English and French).

Questions 1 to 5 are introductory questions which permit to situate the survey participant within the sampling population or not. The main body of the survey (Questions 6 to 27) consists of open and closed-ended questions.

A matrix was designed to understand the participants view of Traditional financial institutions and mobile banking and rating their characteristics on the same scale.

Multiple choice questions were also used to determine which tools the participants mostly used. Questions 17, 22, 23 and 27 were designed as open-ended questions, to enable participants to add further information and are considered as a form of qualitative research questions.

The survey was created on SurveyMonkey, in English and French, and was distributed via social networks and university institutions in Tunisia. Social networks include Facebook groups, Facebook and Instagram Ads, and Reddit.

The results of the French survey were afterwards translated by the author. The questionnaire's sample size was 100 participants in total.

### **3.3 Sample Design**

In line with the research questions and purpose of the study, the thesis will focus on literature and data produced within the last 5 years. As the financial landscape in Tunisia is evolving, it is crucial to keep numbers up to date. The thesis aims also to demonstrate the shift in financial inclusion pre- and post-pandemic, therefore the need for recent data.

The background of this research paper will discuss in the first-place mobile banking and other financial digital tools. However, the study will not dive deep into Fintech, as it is too large a topic to grasp.

The thesis aims to respond to how digital financial services can empower Tunisian women's financial inclusion, consequently, surveys in methodology intends to be addressed to women in Tunisia only.

Therefore, participants of the study should fit into the category of:

- Individual identifying as female.
- Individual living in Tunisia.
- Individual Over the age of 18 years old.

## **3.4 Validity & Reliability**

### **3.4.1 Importance**

Within all research, validity and reliability are key aspects that should meticulously be considered, as they can make the difference between good and bad research. (Brink, 1993)

Validity measures how well the author's chosen research methodology fits the original key objectives and research questions of the thesis, while reliability defines how objective and sustainable the questions of the study are.

The significance of upholding the principles of validity and reliability in research cannot be overstated, as they serve as the fundamental pillars of methodological rigor and the assurance of credible findings. Validity ensures that the measures employed accurately capture the essence of the phenomena being studied, preventing erroneous conclusions. However, reliability ensures that the results obtained are consistent and dependable, guarding against random fluctuations.

Validity and reliability enhance the overall credibility and integrity of the research, building trust among peers, reviewers, and readers in the study's outcomes. Additionally, these findings enable meaningful comparisons between studies and the generalization of results to broader populations or contexts. In various fields, from healthcare to policy development, valid and reliable research serves as a foundation for informed decision-making. Furthermore, by developing a robust body of knowledge, these findings contribute to the overall advancement of scientific understanding and the accumulation of knowledge. Ultimately, upholding validity and reliability in research is essential for maintaining the integrity of research outcomes and ensuring their various applications have a solid basis in evidence and accuracy.

Brink noted that reliability and validity are significantly influenced by one key factor, which is error. Error, an inherent aspect of all research endeavors, exhibits an inverse relationship with both validity and reliability. According to Brink, major sources of error in research occur from the researcher, the sample or subject participating in the research, the social context, and the method of data collection and analysis.



### **3.4.2 Framework**

Through a transparent evaluation of validity and reliability critical aspects, the author strives to provide a comprehensive understanding of the methodological robustness that underpins this research endeavor.

#### **A. Validity**

To build a solid foundation for this study, the initial step involved a rigorous review of the existing literature and research pertaining to mobile banking and financial inclusion, with a particular emphasis on Tunisia and the specific obstacles encountered by women in this context. By undertaking this extensive literature review, the study was able to develop a comprehensive set of survey questions and interview protocols that accurately reflected the multifaceted nature of mobile banking and its effect on the financial inclusion of women in Tunisia. This ensured that our measurement instruments were aligned with the research objectives and provided a robust framework for collecting data and analyzing findings.

#### **B. Reliability**

By identifying and acknowledging potential biases upfront, the author endeavors to minimize their impact on the objectivity and credibility of the research findings. Through meticulous attention to detail and adherence to rigorous research practices, the author ensures the dependability and sustainability of the study's questions and data collection methods. By proactively addressing biases, the author strengthens the reliability of the study and enhances confidence in the research outcomes.

1. Answer order bias: People perceive primary options as ‘correct’ but also the last options as the most recent and therefore the easiest to remember and pick. Limiting the option list and including a free response option helped to capture choices that the author missed to include in the answer options.
2. Social desirability / conformity bias: meaning that people answer questions thinking it will make them look good or better. Questions related to lifestyle choices, beliefs, values, income, and emotions may be misrepresented. The author has recognized that cautious question phraseology and cross-referencing answers for consistency can help identify and diminish the impact of social desirability bias.

### **3.4.3 Limitations**

One of the limitations of this thesis is the potential presence of sample bias. Most participants included in the study were from the capital and areas surrounding it, resulting in a skewed representation that may not accurately reflect the experiences and perspectives of individuals from rural areas. This sample bias limits the generalizability of the findings to the broader population of interest.

A significant portion of the respondents possess a bank account, which means that the study is inadvertently excluding a substantial segment of the population that lacks access to banking services. By missing the segment of the population without access to banking services, the opportunity to identify financial exclusion issues and potential areas of development is hindered.

Another limitation is the constraint imposed by time and resources. The availability of resources to deliver the survey in areas that could not be reached through social media posts may have resulted in limited geographical coverage. This limitation may have restricted the diversity of participants and potentially overlooked important insights and nuances from individuals who were not easily accessible.

These limitations should be acknowledged in order to provide a transparent assessment of the study's scope and potential impact on the validity and generalizability of the findings. Future research endeavors should aim to broaden the sample to include participants from diverse geographic areas and allocate resources accordingly to ensure a more comprehensive representation.

## 4 Data analysis

### 4.1 Demographic Statistics

The survey conducted involved the participation of 100 respondents, with a notable majority hailing from the capital city of Tunis and its suburbs. Interestingly, the age distribution among the participants appears to be relatively uniform, with a significant 28% falling within the age bracket of 33 to 44 years old. This demographic diversity within the survey sample from Tunis suggests a potentially well-rounded and representative dataset for analysis.

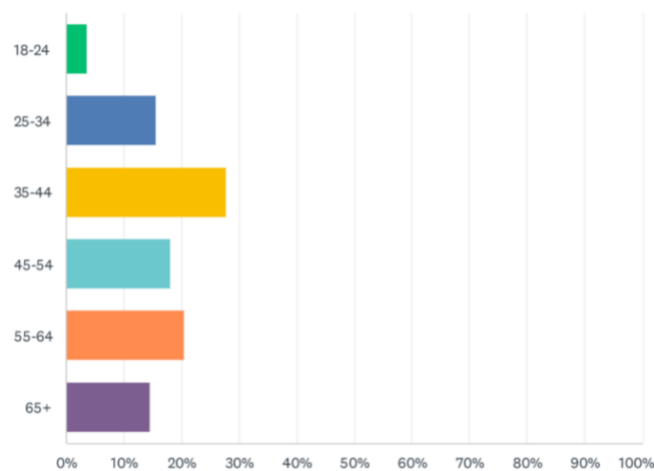


Figure 4-1 Age range of survey respondents

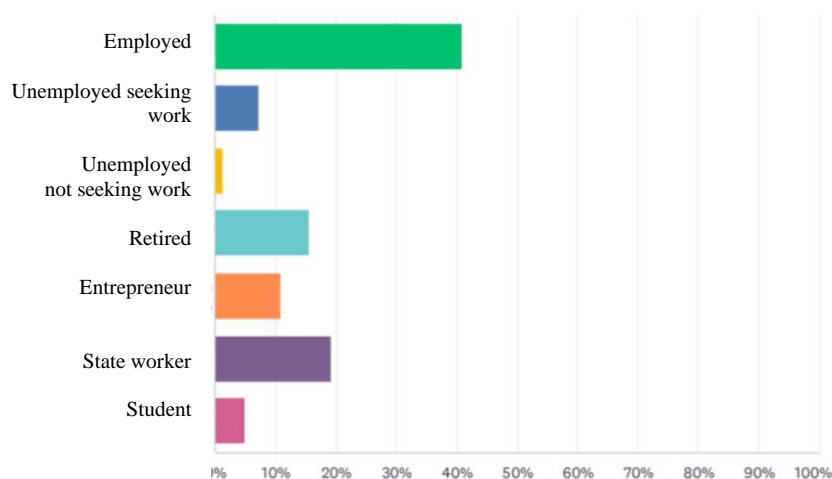
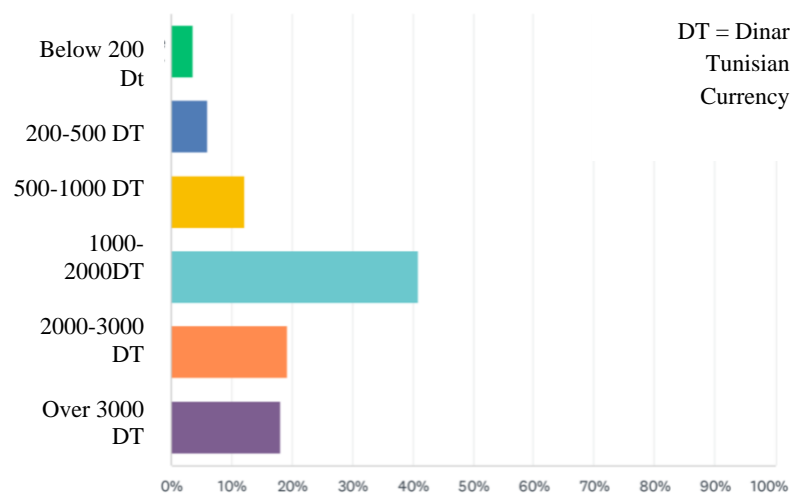


Figure 4-2 Survey respondents work status

The survey data presents an interesting snapshot of the educational and employment landscape among the respondents. A significant majority of those surveyed have pursued higher education, with only a small fraction, specifically 5%, having stopped their education at the high school level. In terms of employment status, approximately 70% of the respondents are actively engaged in the workforce, illustrating a dynamic and varied range of occupational backgrounds within the survey sample. Among these, 19% of individuals hold positions as civil servants, representing a stable and government-oriented workforce. Furthermore, 10% of the surveyed population identify as entrepreneurs. 10% are unemployed.



*Figure 4-3 Income range of survey respondents*

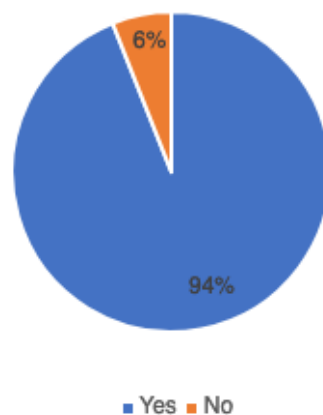
The income distribution among women in the survey reveals a spectrum of financial situations. Notably, 10% of women are earning below 500 Dinar per month, and 12% of women earning from 500 to 1000 Dinar per month, highlighting a segment of respondents facing significant financial challenges. In contrast, a substantial proportion, approximately 41%, fall within the income bracket of 1000 to 2000 Dinar per month, indicating a relatively stable financial position for a considerable portion of female respondents. Moreover, there is another notable group, comprising around 20% of women, who report earnings ranging from 2000 to 3000 Dinar per month, suggesting a subset of respondents with somewhat higher income levels.

Interestingly, 19% of women in the survey earn over 3000 Dinar per month, indicating a minority of respondents who enjoy a more comfortable financial situation. These findings underscore the diverse economic circumstances among the surveyed women, ranging from

those facing financial difficulties to those with more robust incomes. It is crucial to consider this range of income levels when assessing the financial landscape and needs of the female population in the survey.

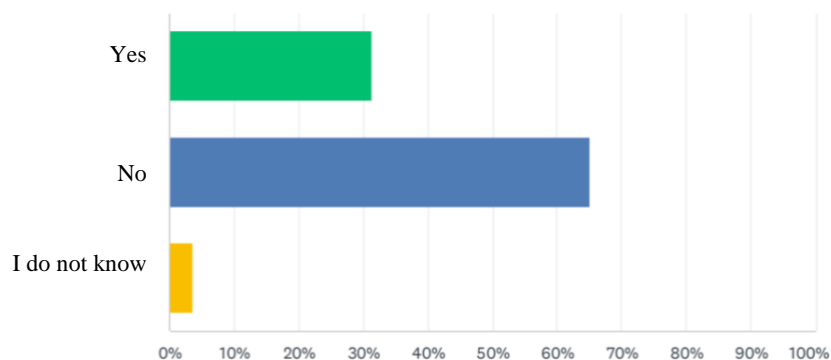
The sample used for the analysis in this survey is notably diverse, comprising individuals from a wide range of backgrounds and demographic profiles. It includes participants of varying ages, from young adults to seniors, reflecting generational diversity. Moreover, the sample consists of individuals from different socioeconomic backgrounds, educational levels, and employment statuses, making it a rich and multifaceted dataset. This diversity within the sample ensures a more comprehensive and representative understanding of the subject matter under investigation, enabling a nuanced analysis that takes into account the perspectives and experiences of a heterogeneous group of respondents.

## 4.2 Relationship to Finance



*Figure 4-4 Account ownership of survey respondents*

A striking 94% of the surveyed individuals possess a personal bank account, indicating a high degree of financial inclusion and engagement with the formal banking sector among the respondents.



*Figure 4-5 Percentage of surveyed receiving financial education*

The survey results reveal an interesting perspective on financial education among the respondents. A substantial 65% of those surveyed reported that they have not received any form of financial education either during their school years or in the workplace. This statistic highlights a potential gap in financial literacy and underscores the need for improved educational initiatives in this crucial area. Additionally, 4% of respondents admitted to being uncertain about whether they have received financial education, indicating a level of ambiguity or lack of awareness surrounding this important aspect of knowledge. These findings emphasize the importance of promoting financial literacy and ensuring that individuals have access to essential financial education to make informed financial decisions throughout their lives.

*Table 4-1 Percentage of financial confidence of respondents*

	Percentage
Extremely Confident	13.25
Very Confident	24.10
Somewhat Confident	43.37
Not so Confident	16.87
Not at all Confident	2.41

The survey reveals varying levels of financial confidence among respondents. 13% are extremely confident, 24% very confident, and 43% somewhat confident in their financial abilities. However, 17% express not-so-confident sentiments, and only 2% lack any confidence

at all. These findings highlight the diversity in financial self-assuredness within the surveyed population, underscoring the importance of targeted financial education and support.

### 4.3 Traditional Banking

A significant 91% of survey respondents reported using or having used traditional banking methods, highlighting the enduring relevance and prevalence of conventional banking services in the financial lives of the Tunisian women population.

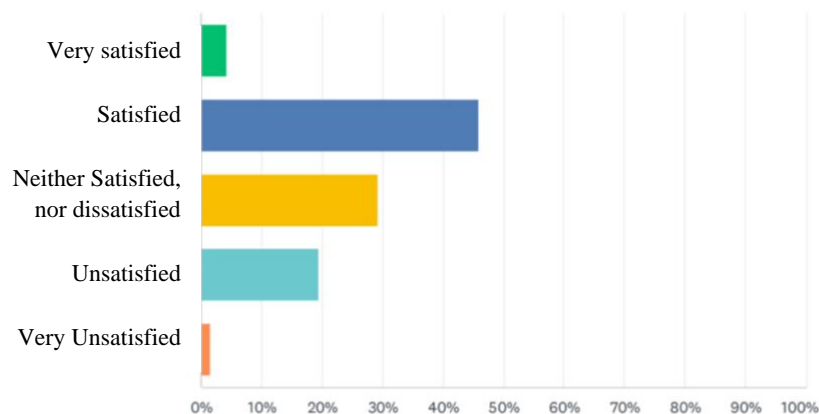
*Table 4-2 Review of Traditional Banking*

	Very Above Average	Above Average	Average	Below Average	Very Below Average
Accessible	9.72	35.00	51.39	11.11	2.78
Affordable	2.99	26.87	40.30	19.40	13.43
Ease of use	9.72	22.22	47.22	16.67	5.56
Efficiency	7.04	28.17	40.85	19.72	5.63

The surveyors' ratings shed light on how they perceive the quality of certain characteristics of traditional finance, including accessibility, affordability, ease of use, and efficiency. It is noteworthy that a significant majority, ranging from 41% to 51%, evaluated all of these criteria as falling into the "Average" category, indicating a general sense of moderate satisfaction with these aspects of traditional finance. On the positive side, a high portion of the surveyed individuals, ranging from 22% to 28%, rated all of these criteria as "Above Average," reflecting a substantial level of contentment with these attributes.

However, there were some interesting nuances in the findings. Affordability, in particular, received a lower rating, with 13% scoring it as "Very Below Average." Additionally, 19% and 20% of respondents deemed efficiency and affordability to be of "Below Average" quality.

The survey suggests that there is generally more satisfaction than dissatisfaction among the respondents when it comes to these key characteristics of traditional finance. While there are areas for improvement, the overall sentiment leans toward contentment with the accessibility, affordability, ease of use, and efficiency of traditional financial services.



*Figure 4-6 Satisfaction rate of traditional banking users*

The survey offers a comprehensive view of the sample's satisfaction with traditional financial services. A small but contented 4% expressed being "Very Satisfied," while a significant 46% reported being "Satisfied," indicating a generally favorable perception of these services. Additionally, 29% fell into the category of "Neither Satisfied nor Unsatisfied," showcasing a level of neutrality in their views. On the other hand, 19% of respondents expressed being "Unsatisfied," while just 1% conveyed being "Very Unsatisfied." These findings demonstrate a mixed sentiment within the sample, with a substantial portion leaning toward satisfaction but also a notable group with varying degrees of dissatisfaction or ambivalence regarding traditional financial services.

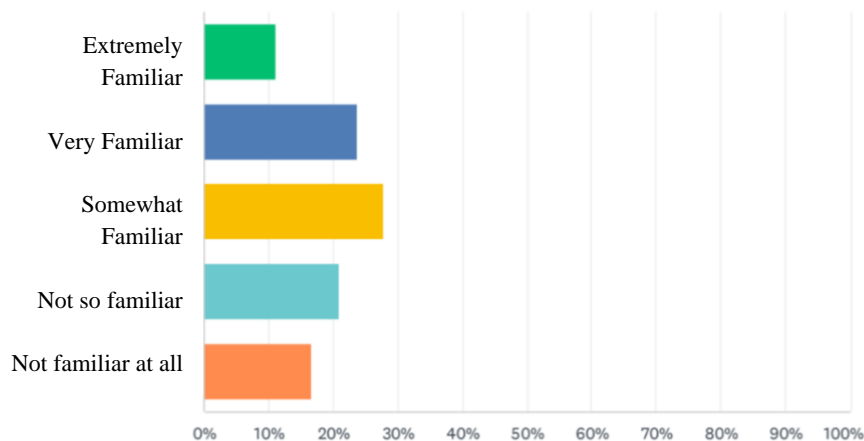
## **4.4 Mobile Banking**

Collected data provide insights into the familiarity of women with mobile banking services. It's encouraging to see that a significant portion, 11%, of female respondents reported being "extremely familiar" with mobile banking. Additionally, a notable 24% stated they are "very familiar," suggesting a substantial number of women who possess a strong grasp of mobile banking. Indicating a high level of proficiency and comfort with these digital financial tools.



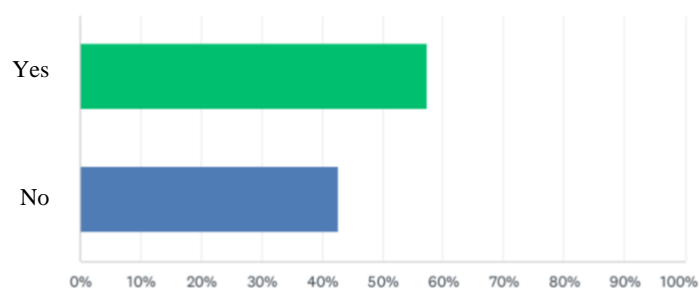
Furthermore, 28% reported being "somewhat familiar," indicating that most women have at least some knowledge and experience with mobile banking.

However, there is also a segment of respondents who may not be as acquainted with mobile banking, with 21% claiming to be "not so familiar" and 17% stating that they are "not familiar at all."



*Figure 4-7 Familiarity with Mobile Banking*

In conclusion, the survey results demonstrate a varied spectrum of familiarity with mobile banking services among women, with a significant portion having some level of knowledge and experience, but also a consequent percentage that may need further education or exposure to these digital financial tools to become more familiar.



*Figure 4-8 Users of mobile banking*

The survey findings indicate a notable adoption of mobile banking, with 57% of respondents reporting that they use or have used this convenient digital banking method. On the other hand,

43% of survey participants have not yet ventured into mobile banking. This data underscores the growing importance and popularity of mobile banking services in today's financial landscape while also recognizing that a significant portion of respondents may still rely on more traditional banking channels.

When inquired about their motivations for utilizing mobile banking services, the majority of women cited the desire for quickness and timesaving, underscoring the importance of efficiency in their financial transactions. Accessibility was another prominent factor that surfaced repeatedly among respondents. Ease of use was also a commonly mentioned aspect, emphasizing the importance of user-friendly interfaces and straightforward operations. Furthermore, women expressed an appreciation for the wide range of services available on the mobile platform, highlighting the convenience and comprehensiveness offered by mobile banking apps.

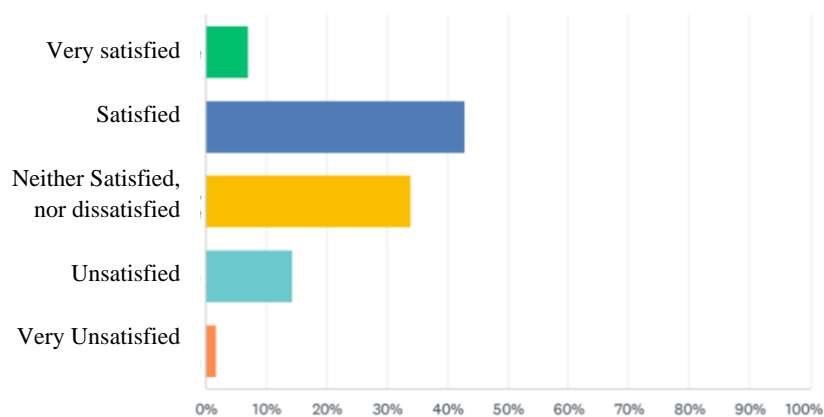
In our study, nearly half of the female respondents, constituting 43%, reported not using mobile banking services. Their reasons for abstaining from mobile banking were multifaceted. The primary factors cited were a lack of familiarity with how to use these services, concerns regarding security, and a general mistrust of the technology. Additionally, a few respondents also mentioned the dearth of information available, connectivity issues, and the absence of human interaction as contributing factors to their decision to forgo mobile banking services. These insights highlight a range of challenges and reservations that women may face when it comes to adopting mobile banking, shedding light on potential areas for improvement and education in the mobile banking sector.

*Table 4-3 Review of mobile banking*

	Very Above Average	Above Average	Average	Below Average	Very Below Average
Accessible	8.77	35.09	38.06	14.04	5.26
Affordable	5.26	19.30	49.12	10.53	15.79
Ease of use	12.07	37.93	29.31	10.34	12.07
Efficiency	15.52	36.21	25.86	6.90	15.52

The ratings provided by women in our study shed light on their perceptions of various aspects of mobile banking. In terms of accessibility, 38% rated it as "average," while an impressive 35% found it to be "above average," indicating a moderate level of satisfaction with the ease of access. When it comes to affordability, 50% rated it as "average," while a quarter (25%) deemed it "above average," and another 25% found it to be "below average," suggesting mixed sentiments regarding the cost-effectiveness of mobile banking services.

Ease of use emerged as a strong suit, with 50% of women rating it as "above average," reflecting a high level of satisfaction with the user-friendliness of mobile banking platforms. In terms of efficiency, 36% considered it "above average," highlighting a positive perception of the service's effectiveness, while 15% expressed a less favorable view, rating it as "not at all" efficient. These ratings provide valuable insights into the strengths and areas of improvement within mobile banking, which can inform efforts to enhance the overall quality of these services for female users.



*Figure 4-9 Satisfaction rate of mobile banking usage*

The data on women's satisfaction levels with mobile banking services reveals a diverse range of sentiments among female users. A small but content 7% expressed being "very satisfied,". A more substantial 43% reported being "satisfied," which suggests that a majority of women in the study hold favorable views of these services.

However, a significant portion, specifically 34%, fell into the category of "neither satisfied nor unsatisfied," indicating a level of ambivalence or uncertainty in their satisfaction. It's worth

noting that 14% of respondents expressed being "unsatisfied," suggesting room for improvement in addressing the needs and concerns of this subset of users.

Lastly, a mere 2% conveyed being "very unsatisfied," highlighting a small but significant group of female users who have had notably negative experiences with mobile banking.

In conclusion, the data illustrates a range of satisfaction levels among women using mobile banking services, with a considerable portion satisfied, but also a notable group that may require further attention and support to enhance their mobile banking experience.

## **4.5 Mobile Banking and Financial inclusion**

Among women who use mobile banking, a significant 94% reported having a bank account, while only 6% did not. In contrast, among women who do not use mobile banking, 92% reported having a bank account, with 8% not having one. While these differences appear relatively small, they do constitute a significant distinction in terms of the presence of bank accounts within each group.

These findings suggest that mobile banking users are slightly more likely to have a bank account compared to non-users, indicating that mobile banking may be associated with higher levels of banking access. This could be an important consideration for financial institutions and policymakers looking to promote financial inclusion and expand access to banking services, especially among women.

The data on mobile banking usage across different age groups reveals a clear trend: as age increases, the adoption of mobile banking services decreases.

Among the youngest age group (18-24 years old), a remarkable 100% reported using mobile banking, indicating a complete reliance on digital financial tools. Among 25-34 and 35-44 age groups, 78% and 73% are respectively users, showing a relatively high adoption rate but with some individuals still opting for traditional banking methods.

As we move into older age categories, we observe a substantial drop in mobile banking usage. For instance, in the 45-55 and 55-64 age groups, only 31% and 53% are respectively using mobile banking, while 69% and 47% respectively do not.

Among individuals over 65 years old, 43% use mobile banking, and 57% do not. This group shows a relatively higher adoption rate compared to some older age categories but still lags behind the younger cohorts.

In conclusion, the data unequivocally illustrates a negative correlation between age and mobile banking adoption. The younger generations are more likely to embrace mobile banking, while older age groups tend to rely on traditional banking methods. This finding emphasizes the importance of tailored strategies to promote digital financial literacy and mobile banking among older populations to ensure inclusive access to banking services.

In comparing the confidence levels of women who use mobile banking with those who do not, some interesting patterns emerge. Among women who use mobile banking, a total of 40% (11% extremely confident + 29% very confident) display a high degree of confidence in their ability to make financial decisions. Additionally, 46% are somewhat confident, indicating a substantial proportion of confidence within this group.

On the other hand, among women who do not use mobile banking, a somewhat similar pattern emerges. A combined 30% (7% extremely confident + 23% very confident) exhibit a high level of financial confidence. Furthermore, 46% express a level of confidence that is somewhat comparable to that of mobile banking users.

However, there is a slight difference in the distribution of lower confidence levels. Among mobile banking users, 15% (9% not so confident + 6% not confident at all) report lower confidence in financial decision-making. In contrast, among non-users, 23% fall into the "not so confident" category, and no respondents reported being "not confident at all."

In conclusion, while both groups display relatively similar distributions of high and somewhat confident individuals, there is a slightly higher prevalence of lower confidence levels among women who do not use mobile banking. This suggests that mobile banking may have a subtle

influence on bolstering financial confidence among female users, although other factors may also contribute to these differences.

## 4.6 Comparison

When comparing the satisfaction levels between users of mobile banking and traditional banking in your survey, several noteworthy insights emerge:

### Mobile Banking

- Mobile banking users display higher levels of satisfaction compared to traditional banking users. A significant 11% report being "very satisfied," and an impressive 66% express being "satisfied," indicating a high degree of contentment among this group.
- Additionally, 17% fall into the category of "neither satisfied nor unsatisfied," suggesting a degree of ambivalence or neutrality in their satisfaction.
- It's notable that none of the mobile banking users report being "not satisfied" or "not at all satisfied," indicating a generally positive perception of these services.

### Traditional Banking

- In contrast, traditional banking users exhibit lower levels of satisfaction. Only 5% report being "very satisfied," and 45% express being "satisfied," indicating a less enthusiastic level of contentment compared to mobile banking users.
- A significant 29% fall into the category of "neither satisfied nor unsatisfied," suggesting a higher level of ambivalence or neutrality in their satisfaction compared to mobile banking users.
- However, the data shows that dissatisfaction with traditional banking services is relatively low, with only 1% stating "not at all satisfied."

### Comparative Insight

- The data clearly demonstrates that mobile banking users tend to be more satisfied with their banking services compared to traditional banking users.

- A higher percentage of traditional banking users' express neutrality or ambivalence in their satisfaction levels, indicating that they may not hold as strong opinions about traditional banking services.
- It's noteworthy that dissatisfaction levels are low in both groups, but traditional banking users exhibit a slightly higher level of satisfaction neutrality.

In conclusion, the analysis highlights a higher level of satisfaction among mobile banking users compared to their counterparts using traditional banking services. Additionally, traditional banking users tend to exhibit more neutrality in their satisfaction levels, suggesting a less clear-cut perception of their banking services. These insights could inform strategies to enhance user experiences and satisfaction in both mobile and traditional banking sectors.

When considering the most critical characteristics that both traditional banks and mobile banking services should prioritize, several key findings stand out from the survey. Accessibility, rated at 26%, underscores the importance of ensuring that banking services are easily accessible to a wide range of users, irrespective of location or demographics. Ease of use, rated at 38%, emerges as a top priority, emphasizing the significance of providing intuitive and user-friendly interfaces to enhance the overall banking experience. Efficiency, with a rating of 29%, highlights the need for streamlined and swift financial transactions, resonating with users who value the effectiveness of banking services. However, affordability, rated at only 7%, suggests that while it is a consideration, it may be of slightly lesser importance compared to other factors. In summary, these insights provide valuable guidance for both traditional and mobile banking services in tailoring their offerings to better meet the needs and expectations of their users, emphasizing accessibility, ease of use, and efficiency as paramount characteristics to focus on.

## **4.7 Suggested development**

Building on the authors research, there are several promising avenues for further investigations to be conducted in this field. Firstly, supplementary research could tackle the limitations of this study. By Broadening the scale of this research and inviting more diverse profile of participants could unravel deeper insights on how to achieve financial inclusion for unbanked and or women from rural areas.

Additionally valuable area of study could be exploring the effectiveness of financial literacy programs tailored specifically to Tunisian women. Assessing how improved financial knowledge impacts their utilization of mobile banking and traditional banking services could provide insights into strategies for enhancing financial inclusion.

Investigating the role of cultural and social factors in shaping women's financial behavior in Tunisia is another substantial direction. Understanding how societal norms, family dynamics, and cultural expectations influence women's financial decisions and access to financial services can help design more targeted interventions.

Furthermore, as technology continues to evolve, keeping abreast of the latest developments in mobile payment platforms and their impact on financial inclusion is crucial. Research could focus on the adoption of emerging financial technologies and how they affect the financial inclusion landscape for Tunisian women.

Ultimately, inquiring into the policy implications of these findings is vital. Investigating how government policies and regulations can be adjusted to better support the financial inclusion of women in Tunisia, especially through mobile payments, can contribute to creating a more inclusive and equitable financial system.

In summary, future research in this area can delve deeper into financial literacy programs, cultural influences, emerging technologies, and policy recommendations to further enhance the financial inclusion of Tunisian women and ensure they have equal access to financial resources and opportunities.

## **5 Conclusion**

This research provides critical insights into the realm of women's financial inclusion through mobile banking, yielding several key observations. It is evident that despite the rapid expansion of mobile banking in Tunisia, a lingering skepticism exists in comparison to traditional banking methods. This underscores the imperative for ongoing educational efforts to inform individuals about the advantages and security measures inherent in mobile banking.



The study demonstrates a notable trend: users of mobile banking tend to express higher satisfaction levels than those relying on traditional banking. This underscores the potential benefits and convenience inherent in mobile banking services, which have the capacity to significantly enhance financial inclusion, particularly among women who face various barriers to traditional banking access.

Opportunities for refinement exist to further bolster financial inclusion via mobile banking. Primarily, it is imperative to institute comprehensive financial education and support programs. Such initiatives cultivate confidence and trust in the utilization of mobile banking services, equipping individuals with the knowledge and skills needed to navigate financial transactions effectively. In turn, this bridges the participation gap and amplifies women's engagement.

Additionally, concerted attention should be devoted to enhancing key aspects of mobile banking to heighten accessibility and user-friendliness. This entails improvements in user interface design to enhance intuitiveness and user-friendliness. By tackling these challenges head-on, government can surmount potential obstacles impeding women's financial inclusion, positioning mobile banking as an inclusive and empowering platform for all.

In conclusion, this research underscores the necessity of acknowledging prevailing skepticism surrounding mobile banking and underscores the ongoing need to enhance its accessibility and user experience. Through the provision of financial education and support and the refinement of mobile banking interfaces, we can contribute to the realization of a more inclusive and empowering financial ecosystem for women. Collaboration among policymakers, financial institutions, and technology providers is paramount to fully unlock the potential of mobile banking in advancing women's financial inclusion and promoting broader socioeconomic development.

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# Appendix

## 7.1 Survey

### 7.1.1 Page 1

#### Welcome to My Survey

This survey aims to understand the key factors of mobile banking and how mobile banking can drive forward women's financial inclusion in Tunisia.

#### Terms & Conditions

You are being asked to participate in this study because you are at least 18 years old, identify as female and currently live in Tunisia. In this survey you will be asked to do the following

- 1) provide demographic information about your age, gender, income, work, romantic relationship status.
- 2) provide information about your use or not of traditional banking and/or mobile banking.

Participation will take 15-25minutes.

Confidentiality is highly taken into account, and we will keep all information confidential. Your name and other identifying information will not be collected.

It is important to remember that your participation is voluntary, and you may quit the survey at any point. You may choose not to answer any questions you are unsure about or not comfortable doing so.

By clicking Ok, you agree to the previous requirements.

### 7.1.2 Page 2

1. Do you Identify as female?  
Yes or no
2. Are you above 18 years old?  
Yes or no
3. Are you currently living in Tunisia?  
Yes or no

### 7.1.3 Page 3

1. In which city do you currently live?
2. Which age group do you belong to?

18-24	45-54
25-34	55-64
35-44	65+

3. Which of the following best describes your current relationship status?

Married  
Widowed  
Divorced  
Single  
Cohabitated  
In a relationship  
Prefer not to answer.

4. What is the highest level of education you have completed?

Did not attend school.  
High school  
University  
Vocational studies  
Middle school  
Primary school

5. Which of the following categories best describes your employment status?

Employed  
Unemployed, looking for work.  
Unemployed NOT looking for work.  
Retired  
Entrepreneur  
Civil servant  
Student

6. What is your approximate average personal income?

Below 200Dt  
200-500Dt  
500-1000Dt  
1000-2000Dt  
2000-3000Dt  
Above 3000Dt

7. Do you have/or had a personal account?

Yes or no

8. Have you previously received financial education in school, as part of external courses or at work?

Yes or no or not sure.

9. How confident do you feel regarding your ability to make financial decisions.

Extremely confident

Very confident

Somewhat confident

Not so confident

Not at all confident

10. Which one of these concepts are you familiar with

Microcredit	Savings Account
ATMs	Money Transfer
Disposal account	Treasury Bond
Bank Check	None of the Above

11. Have you used or do you use any of these services?

Microcredit	Savings Account
ATMs	Money Transfer
Disposal account	Treasury Bond
Bank Check	None of the Above

#### **7.1.4 Page 4**

Traditional banking is characterized by a physical location where customers can visit to access financial services and interact with staff members in person. This type of banking is offered by the big commercial banks, micro finance banks, credit unions, etc.

1. Do you use/have used traditional banking?  
Yes or no

2. If you responded no, explain why.

#### **7.1.5 Page 5**

1. Rate the following characteristics regarding traditional financial institutions:

Accessible: The services are available and offered to you

Affordable: The services are at reasonable price range

Ease of use: The features and the requirements of these services are easy to understand.

Efficiency: The services are provided in a fast way to respond to your specific needs

- Very
- Above average
- Average
- Below average not at all

2. Overall are you satisfied with the services offered by traditional financial institutions?

Very satisfied  
Satisfied  
Neither satisfied nor dissatisfied  
Dissatisfied  
Very dissatisfied

3. How familiar are you with mobile banking.

Extremely familiar  
Very familiar  
Somewhat familiar  
Not so familiar  
Not at all familiar

### **7.1.6 Page 6**

Mobile banking is a banking system provided by banks or financial institutions which allows customers and users to access financial services like withdrawals, transfers, bill payments etc. on their mobile devices.

1. Do you use/ have used mobile banking?
2. If you responded yes, what influenced you to try.
3. If you responded no, what has refrained you from trying.
4. Rate the following characteristics regarding mobile banking.

Accessible: The services are available and offered to you

Affordable: The services are at reasonable price range

Ease of use: The features and the requirements of these services are easy to understand.

Efficiency: The services are provided in a fast way to respond to your specific needs

- Very
- Above average
- Average
- Below average not at all

5. Overall are you satisfied with the services offered by mobile banking?

Very satisfied  
Satisfied  
Neither satisfied nor dissatisfied  
Dissatisfied  
Very dissatisfied

6. What is the most important characteristic that either traditional banking/mobile banking should consider

Accessibility  
Ease of use  
Affordability  
Efficiency

7. Lastly if you are not a user of mobile banking, what could positively influence you to try it out.

Thank you for your time and for completing this survey. Your responses will be saved once you press the complete button.

## 7.2 Results

[Survey Raw Data](#)