Master's Thesis of International Studies

INCREASING FINANCIAL ACCESS OF SENEGALESE WOMEN

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Abstract

INCREASING FINANCIAL ACCESS OF SENEGALESE WOMEN

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According to the International Financial Corporation (IFC), economies can achieve their potential when everyone can fully participate in the formal economy without discrimination (IFC Field Note 10). Financial inclusion means that everyone has access to formal financial services. An effective access means that the services and products that are available are appropriately designed, are secured and respond to various needs of the population (NSFI 2022-2028).

Access to financial services is a big concern for Senegalese people, particularly women. Women face several constraints, which revolve around the fact that many classic services offered by financial service providers are not suitable for the demand side and the classical banks are often reluctant to lend money to female entrepreneurs. These constraints trap women in the informal labor market with a small scale of production.

This proposal will be an examination of the access to financial services of Senegalese women by analyzing disaggregated data of the 2021 Global Findex survey and Database conducted by World Bank and look how women engage financial services. We will state and test hypotheses on factors that may contribute to achieving an inclusive financial access for Senegalese women.

Keyword: financial inclusion, financial services providers, credit access, mfis, gender gap

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ACRONYMS

GoS: Government of Senegal

AFdB: African Development Bank

ANSD: National Agency of Statistics and Demography Senegal

F CFA: Francs CFA

FPs: Financial Providers

ICPE: Economic Policy Coordination Instrument

IFC: International Finance Corporation

IFIs: International Financial Institutions

IFPRI: International Food Policy Research Institute

IMF: International Monetary Fund

NFSI: National Financial Inclusion Strategy

NPIA: National agricultural investment program

MFB: Ministry of Finances & Budget Senegal

MFI: Microfinance Institution

MMC : Mobile Money Company

NBFI: Nonbanking Financial Institution

PAP 2A: Adjusted and Accelerated Priority Action Plan 2 (Plan d'Actions Prioritaires 2 Ajusté et Accéléré)

PSE: Plan Sénégal Emergent

PQDES: Quadrennial Economic and Social Development Plan

RAC: Annual Review (Revue Annuelle Conjointe)

UNDP: United Nations Development Programme

WB: World Bank

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1. Study Background

Financial inclusion can be defined as using or accessing formal financial products. Lacking access to finance is one of the main constraints for low-income people and entrepreneurs to lift themselves out of poverty (Levine 2008 p7). As of 2021, 1.4 billion people (adults) worldwide still did not have an account within a financial institution or a mobile money company and 56% of unbanked people were women (Global Findex Report 2017 GFDX p4). According to Global Findex Report 2021, **4,232,890** people are unbanked in Senegal (WB).

Figure 1: Gender gap in financial inclusion worldwide

Source: Global Findex data 2021

Credit is one of the most important elements providing an individual's economic status (Jane R Chapman Challenge 75.40). The formal one is provided by financial sector. Financial sector is a set of organizations, markets, instruments and the legal and regulatory framework that let transactions to be made by expanding credit. (World Bank). Financial Institution is an institution involved in the business of providing financial services to clients who keep a credit, trust, deposit or other financial account or relationship with the organization (Cornell L Scholl). A nonbank financial institution (NBFI) is a financial organization that does not get a full banking license and cannot collect deposits from the public. NBFIs are a source of consumer credit (along with licensed banks) and do ease alternative services, such as individual or collective investment, risk pooling money transmission, and check cashing…(World Bank). Informal channels such as saving clubs are used as an alternative to complement formal borrowing or saving. Locally known in Senegal as “Natt”, Tontine, or “Susu” in neighboring countries, they work by pooling monthly or weekly members’ deposits and disbursing the whole amount to different members. This system uses trust and reciprocity within family and social bonds is adopted in many low-income countries, where social cohesion is particularly important. These clubs can promote savings through social motivation in remote areas.(D Mollenkamp, P Rodriguez, P Velasquez 2022).19% of adults in Sub Saharan Africa used a savings club as of 2013 (Demigurck Kunt p300).

Women entrepreneurs are lacking access to formal financial services that inhibit their possibilities to improve productivity, to use modern technologies, and diversify their production. Gender inequalities in the credit market have hindered their productivity compared to male counterparts.

<u>Figure 2</u>: Gender gap in financial inclusion in Sub Saharan Africa

Source/ Global Findex 2017

Female entrepreneurs, whether they are educated or not, often fail to apply for credit due to the intersectionality of low financial literacy, class, fear of failure and risk aversion (H Morsy IMF March 2020). Women are still working mainly in the informal economy as the classic financial sector perceives the informal sector as highly risky and focuses on men entrepreneurs and formal businesses. Physical distance, withdrawal fees, minimum balance, the cost of opening and maintaining a formal account are common barriers often cited for not using formal accounts (Demigurc Kunt 2013 p299).

1- PURPOSE OF THE RESEARCH

2-1 Research Purpose

The purpose of this research is to **review the main constraints to women's access to suitable financial services and design policy recommendations that may enhance financial growth of female users**.

2-2 Research Objective

The objective of this research is to examine the constraints that hinder women's access to credit.

2-3 Research Questions

We specifically ask the following two research questions, in line with the purpose and objective stated above:

1- **What are the determinants of women's access to formal channels of financial services and the significance of the factors affecting women's access to formal financial services**?
2- **How can we increase the financial access of Senegalese women?**

2-4 Expected Result

We will use disaggregated data to answer the research questions stated above. We will then use results from our analysis to create an approach and emit policy recommendations that may contribute to increasing women's access to credit.

2- Background

In the early sixties just after the independence, the Senegalese Government placed economic growth on the top priority of their political agenda. In 1961, the first Quadrennial Plan for Economic and Social Development (Plan Quadrennial de Développement Économique et Social - PQDES) aimed to allocating resources for food and vulnerable groups in order to provide social and financial inclusion to women and children (Evolution of Nutrition Policy in Senegal Andrea Spray p15, WB 2018). Senegalese women are the main caregivers of the household and play a major role in achieving sustainable development. According to the National Agency of Statistics and Demography (ANSD), Senegalese women contributed around 1,000.5 billion F CFA (USD~2,690,700) in the formal sector (24.5%) and around

1,680.5 billion F CFA (USD1,609,018) in the informal sector (33.5%) in 2017 (ANSD Report UN Women we count project 2022).

CURRENT SITUATION OF EXPENDITURES DEDICATED TO WOMEN IN SENEGAL

POLICIES IMPLEMENTED

The Senegalese government has engaged in a New Economic Program with the International Monetary Fund in January 2020 (Economic Policy Coordination Instrument ICPE). One of the 3 pillars of this program aims **to increase financial access to enterprises particularly SMEs** (ESRIF 2022-2026).

The Second phase of the national development strategy Plan Sénégal Emergent (Senegal Emergent Plan), which is the umbrella policy harmonizing policies for different sectors), supports the environment for selected sectors.

Different set of policies have been implemented:

- The National Financial Inclusion Strategy 2022 – 2026
- The National Strategy for Food Security and resilience 2015- 2035 (Stratégie nationale de sécurité alimentaire et de résilience 2015–2035)
- The "startup package" to develop entrepreneurship, improving the environment for incubators (GoS ,2018a IFC 2020, 16)
- The Development strategy of Microfinance and Social Economy and Solidarity

In 2020 the GoS has disbursed in total 210,621,718,112 F CFA / USD 368,219,786 and 130 billion of loans have been budgeted for the first semester of 2021 (Ministry of Finances DRS report 2021).

Source: DPB/DGB/Ministry of Finances & Budget of Senegal, data PIP 2021-2023 4091192673.

FUNDS & AGENCIES IN SENEGAL: The Government of Senegal has implemented several agencies and funds to ease credit access to entrepreneurs and women.

AGENCY FOR THE DEVELOPMENT AND SUPPORT OF SMES (ADEPME) RAPID GENERAL DELEGATION FOR WOMEN & YOUTH EMPLOYMENT (DER/FJ) STABULATION SUPPORT FUND (FONDSTAB) MICROFINANCE IMPULSE FUND (FIMF) NATIONAL MICROFINANCE FUND (FONAMIF) SOVEREIGN WEALTH FUND FOR STRATEGIC INVESTMENT (FONSIS) NATIONAL CREDIT FUND FOR WOMEN (FNCF) NATIONAL FUND FOR WOMEN’S ENTREPRENEURSHIP (FNPEF) NATIONAL PROMOTION AGENCY FOR YOUTH (ANPEJ) NATIONAL FINANCING GUARANTEE FUND FOR AGRICULTURAL PRODUCTION PRIORITY INVESTMENT GUARANTEE FUND (FONGIP)…

Women’s active participation is needed not only in the implementation of financial and non-financial services, but more importantly, in the design and conceptualization of these services to produce sustainable inclusive economic growth.

3-1 Definition of financial inclusion & exclusion

World Bank: According to the World Bank, financial inclusion means that people and companies have access to and use affordable financial products and services to satisfy their needs in terms of payments, transactions, credit, savings and insurance channeled in a sustainable way. Financial inclusion has been recognized as an enabler for seven of the seventeen Sustainable Development Goals (SDGs). Progress has been made on financial inclusion: according to the World Bank report of 2017, 1.2 billion more people own bank accounts than in 2011, despite the fact that a gap between female and male access is noticed. In Sub Saharan Africa, female owners of bank accounts are only 37% compared to their male counterparts with 48% (World Bank). Sub Saharan African women are more likely to use informal financial services.

Jonhen and Mubhoff (2022): Financial inclusion can be defined as total formal credit usage including conventional and digital credit.

Leyshon and Thrift (1995): analyzed financial exclusion as processes preventing poor and disadvantaged social groups from accessing the financial systems.

Carbo et al. (2005): determined being financially excluded as "the inability and/or reluctance of particular societal groups to access mainstream financial services" (Morsy & Youssef p4 July 2017).

3-2 Definition of Access to credit

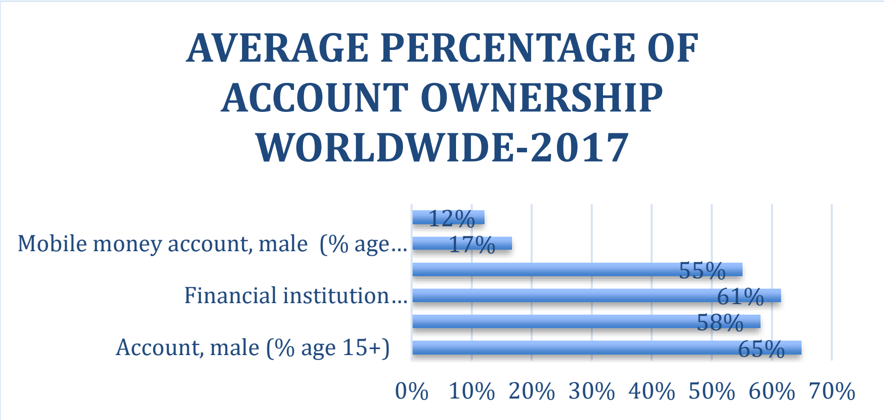
- **Accessing formal credit** is different from participating in formal credit programs that households choose to do. According to IFPRI's research, many credit studies are confusing these two concepts. Indeed, the participation is more related to demand side issue (borrower's choice) while accessing credit is related to a supply side issue (possibilities of lender choices of credit limit) (IFPRI 2000 p18,19).

- **Delgado/ Zeller et al / IFPRI studies**: Accessing credit can significantly improve livelihood of poorest households lacking savings and needed agricultural inputs. Accessing to credit decreases the costs of capital intensives assets related to family labor and push labor-saving technologies. Therefore it's a significant factor for development, particularly in many African countries (Delgado 1995; Zeller et al. 1997; IFPRI July 2000 p1).

- **Duong & Izumida, 2002; Kohansal & Mansoori, (2009)**: Credit is an indispensable tool for achieving socio-economic transformation of rural economies in most developing countries (MIDA case of Ghana).

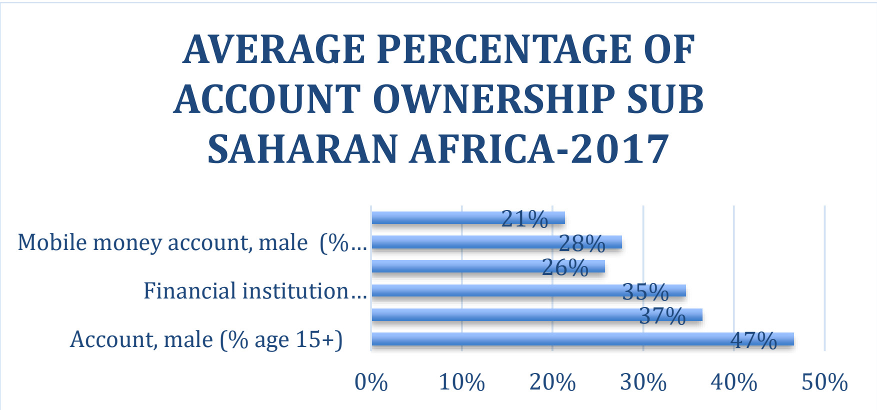
- **Juan Somavia (2007)**: microcredit is a tool playing a critical role in increasing women agency, independence and participation at community level and within households (Juan Somavia, ILO).

<u>Figure 3</u>: Account ownership percentage worldwide in 2017



Own Calculations based on Global Findex dataset 2017

<u>Figure 4</u>: Account ownership percentage In Sub Saharan Africa 2017



Own Calculations based on Global Findex dataset 2017

3-3 Key concepts of women credit constraints

Worldwide, women-led businesses face a **USD 320 billion access to credit gap**, although they are said to have lower non-performing loan rates. In Sub Saharan African, the cost of gender gap issues is estimated at **USD 95 billion** (Women Invest Capital WIC 2022).

In the credit market, the gap between female and male borrowers is significant. Study conducted by Women Invest Capital Senegal shows that **43.9%** of Senegalese female entrepreneurs who lend money do so from relatives (WIC 2021). According to the IFC Report, **87%** of men borrow from formal institutions compared to **38%** of women (IFC Field Note 10).

- **IFPRI**: Based on their research, being credit constrained for both indivisible and divisible goods mean that the borrower gets less than the amount he would have borrowed if the constraint didn't exist (IFPRI 2000 p17). There is a difference between being credit constrained and being credit rationing (binding credit constraint) (IFPRI 2000 p18).

- **IFC**: Women tend to have limited experience in taking loans and working with financial institutions. For poor women, access to save and build assets can be as important to credit.

3-3-a DEMAND SIDE

Identifying barriers affecting women's capacity to borrow will help financial services providers to design suitable programs and services (Women access and use credit in Nigeria 2022).

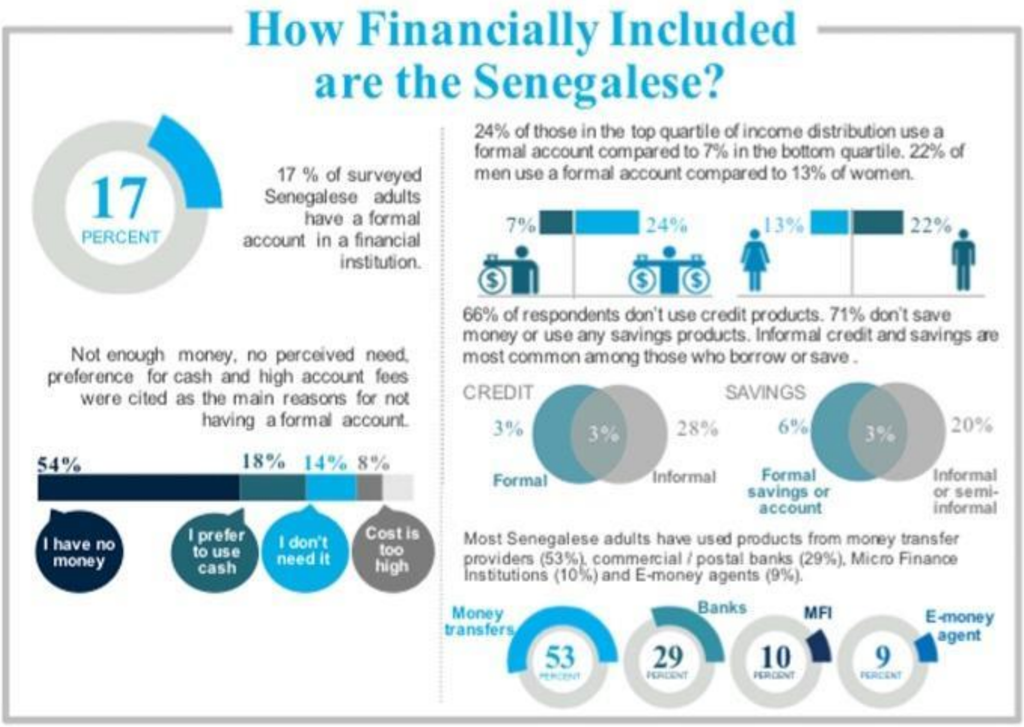
- **Gender limit access**: Women are mainly working in the informal sector. They do not possess productive assets such as lands that can be accepted by Commercial banks, Microfinance Institutions. Usually, they face several constrains to access to formal financial services mechanisms that require collateral and rely on informal sources of funding (Fundraiser). According to FAO and World Bank, they are less likely to lend and save money or own bank accounts in countries with barriers in ownership rights (FAO 2019, WB 2018).

- Regarding the **gender gap in time use**, many women still face time constraints that limit their mobility and ability to travel long distances and use formal financial services if the financial institution is far from their homes. The delivery mechanism is not adapted (i.e. cash inflows and outflows seldom occur simultaneously and leaves women without an option but to get an external source of funding to meet their expenditures) (Amedi et al 392).

● **Gender gap in identification** is one of the constraints. Many female entrepreneurs do not have official administrative documents (NIC) needed by banks and microfinance institutions (Klapper, 2016; Napier et al, 2013; FAO, 2019).

● **Digital and educational gender gap**: many women lack access to information and knowledge particularly on financial and non-financial products, services and rights (WB, 2014). Financial illiteracy and numeracy limit them to benefit from services & manage transactions. In spite of the relevance of the sector, most entrepreneurs find it difficult to save enough capital to establish economically viable agriculture ventures (Olowa, 2011). According to UNCDF, adults with tertiary or higher education are four times more likely to access formal accounts (UNDP, 2016).

Figure 5: Financial Inclusion in Senegal (World Bank)



Source : World Bank Report 2016 No: ACS18885

3- 3-b SUPPLY SIDE

- Financial service providers (FSPs) are still facing difficulties in providing tailored financial services. These difficulties relate to their challenges to understand the rural diversity of the informal sector. They lack capacities on gender well trained and experienced staff. They do not initiate preliminary consultations with women before designing financial products and miss key information to design gender tailored financial products and services institutions (products didn't overcome women constraints) and to implement gender mainstream policies for financial services provided by them.

- The scarcity of the resources and the seasonal nature of some activities (e.g. agriculture) increases the risk and pushes many Microfinance Institutions to create high transaction costs for their services in rural areas (CGAP 2003).

Credit studies mainly used two methods to measure household access to credit:

- **1st method:** infers the presence of credit constraints from violation of assumptions of the life cycle or permanent income hypothesis. The test life cycle permanent income hypothesis has been criticized for being inconclusive (IFPRI, 2000).

- **2nd method:** collects information directly from households' surveys in order to know whether households consider themselves to be credit constrained based on their loan application, rejection or not. Some scholars argued that the classification of being constrained or not based on qualitative questions is insufficient (IFPRI 2000). **Jappelli/ Feder et al**.'s **Detection of credit constraints by directly asking households** has been first applied by Jappelli (1990), who explored data from an American 1983 survey of consumer finances and revealed the determinants of the likelihood of a household being constrained. Feder et al. in 1990 used the methodology to examine data from a household survey in China. The approach is based on qualitative questionnaires using information about households' experience and participation in the credit market.

- Studies about Credit in Lesotho's smallholder agricultural sector (C Mootsoari et al.) used the logistic regression model in order to analyze factors affecting Lesotho's smallholder farmers' access to credit. The framework shows that farmers decide from a hierarchy of preferences in decision making about the financial resources to utilize (Spio, 2002), Laper et al. (1995). They did not demand loans and use their own equity capital accumulated. Accessing to credit is determined by several factors: land ownership, pension, remittances availability of family labor, degree of farm and non-farm income, savings and repayment ability (C Motsoari et al. 2015).

3-4 Conceptual framework

For female borrowers from financial institutions due to insufficient collateral, low assets; they have less favorable credit conditions as short term credits, higher interest rates, and smaller credit sizes. Therefore, to achieve their long-term financial goals, women need more opportunities for saving, borrowing, transferring and investing funds (NSFI 2022-2028). Some providers have focused on new programs using holistic country driven approaches:

- **The Program for Rural Outreach of Financial Innovations and Technologies (PROFIT)**

Created by different investors, this financing mechanism targeting women and youth combines two blended financing instruments: a **credit line and a risk sharing facility**. They provide capital, technical assistance to small rural enterprises and create incentives for lenders to issue more agricultural loans. They did not launch new financial institutions and use the existing ones. Through this program, the Microfinance Institutions in rural areas have targeted 135,000 smallholder farmers, and were able to reach more than 234,000 smallholder farmers over the same period (Ezra Anyango AGRA 2006).

8KEYS POINTS OF PROFIT'S FINANCING MECHANISMS

- PROFIT provides funds at the prevailing market rates.
- Cost reductions based on risk-adjusted lending rates, and no subsidies provided to avoid distorting the market.
- Promotes sustainability of different activities by creating a specific strategy for each area of investment.
- Build public-private partnerships with Government of Kenya; two financial institutions, the Agricultural Finance Corporation (AFC) and Barclays Bank of Kenya (BBK) have implemented the risk sharing
- Promotes a sustainable wide range access to cost effective financial services to vulnerable rural households and an effective management of assets
- Capitalize on existing investments, projects involving community mobilization, groups formation

● PROFIT has initiated a technical assistance agreement with the government of Kenya, in order to lead the execution of the risk sharing facility and business support services and strengthen commercial lending from banks to empower farmers and other participants of the value chain to access loan capital.

● Provides technical assistance to the supply side (financial service providers in order to help them be able to design tailored services and products needed by target groups members), and the demand side including SMEs, savings and credit cooperative organizations and smallholder farmers. Build the capacity of PROFIT target groups with low business experience.

Source: Program for rural outreach of financial innovations and technologies

● The Affirmative Finance Action for Women in Africa (AFAWA) – AFRICAN DEVELOPMENT BANK

The initiative launched by the African Development Bank aimed to ease women access to finance through a holistic approach using three pillars:

- Increasing access to traditional market credit instruments such as lines of credit, trade finance and equity investments as well as innovative financial instruments such as the AFAWA Guarantee for Growth (G4G)

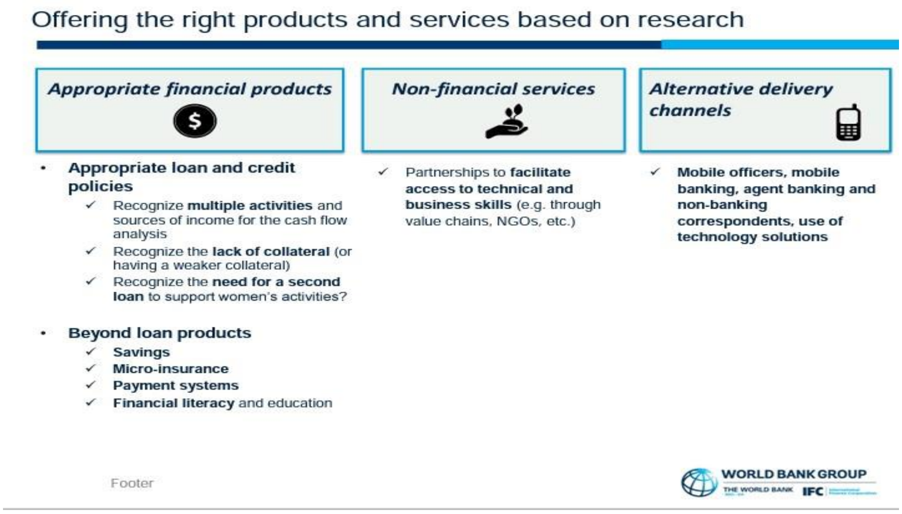
- Providing Technical Assistance for Financial Institutions and women entrepreneurs

- Improving regulatory policies constraining female entrepreneurs' productive growth (by reducing collateral requirements, increasing their business skills and releasing $ 3 billion dedicated to 27,000 female entrepreneurs in the next 5 years) (AfDB 2020).

Source: African Development Bank

THE WORLD BANK FEMALE AGRIFINANCE MECHANISM

The program uses a holistic approach and combines several services: access to credit market, training programs on financial literacy and education, saving mechanisms, micro insurance and innovative payment system.



Source: World Bank Group

CHAPTER 2: DATA AND METHODOLOGY

2-1 DATA

Our study will be based on secondary level data qualitative research and quantitative data from the Global Findex Survey and Report 2021 World Bank microdata (Financial Inclusion, Digital Payments, and Resilience in the Age of COVID-19 World Bank: Washington, DC). It provides many indicators, analyzing how adults in 123 countries worldwide manage their finances daily and plan for the future· This survey was supervised by Gallup, Inc, in association with its Gallup World Poll.

Our research uses country level data of Senegal for 2021, which covers 1000 respondents. We will use the data of 2021 and a set of complementary approaches to measure financial flows dedicated to women.

The Findex survey made indicators using surveys and interviewers randomly selected. Around 40 indicators are related to our main dependent variable, which is account ownership. 9 variables will be used for our analysis and these indicators relate to payments, education, location, borrowing preferences (A Demirgüç-kunt & Leora klapper 2013).

In Senegal, the survey was conducted in-person in Wolof and French between August 17 and September 9 in 2021. The sample size is 1000, meaning that 1000 interviews were conducted. Respondents were randomly selected within the selected households and data weighting has been used to ensure the national representativeness of the sample (Findex report 2021 Survey Methodology p119; Demigurc-kunt & Leora Klapper. 281 2013).

2-2 METHODOLOGY

Our research aims to analyze how Senegalese people, particularly women interact with financial providers in formal, semi-formal and informal channels and how they use financial services to save, lend money and identify who owns a formal account in financial institutions using logistic regression model.

LIST OF VARIABLES

The survey that we use includes 119 variables. Based on our research question the following variables have been selected in order to help us know the relevant constraints and the factors impacting women's access to financial services. This process has allowed us to settle on the below dependent and independent variables of interest.

Table 1: Presentation of variables used

DEPENDENT VARIABLES	INDEPENDENT VARIABLES
Account ownership female 15+	Gender
Has an account at a financial institution	Age
Has a mobile money account	Education
	Income
	Employment
	Urbanicity

2-3 Empirical Result

This part presents and analyzes the findings of the study:

We use a logistic regression model to answer our research questions. The logistic regression is of the form:

ECONOMETRIC MODEL

$$log\left(\frac{\pi_i}{1-\pi_i}\right) = \beta_0 + \beta_1 X_{i1} + \beta_2 X_{i2} + \beta_3 X_{i3} + \beta_4 X_{i4} + \beta_5 X_{i5} + \beta_6 X_{i6} \quad (1)$$

Here, π_i is the probability that the dependent variable (such as having a mobile money account) takes the value of 1 and $1 - \pi_i$ is the probability that this dependent variable takes the value of 0 for individual i. The ratio $\frac{\pi_i}{1-\pi_i}$ is thus the ratio of the probability of having a realization of the dependent variable (e.g. having an account) to not having a realization of the same dependent variable (e.g. no account) for individual i. X_{i1} is a dummy variable representing the gender of individual i and takes the value of 1 if the individual is a female and 0 if the individual is a male. X_{i2} is a variable representing the age of individual i in years. X_{i3} is a categorial variable representing the education level of individual i in terms of years of schooling completed. X_{i4} is a categorical variable showing the income quintile of the individual i, where higher values correspond to higher income quintiles. X_{i5} is a dummy variable that takes the value of 1 if individual i is employed and 0 otherwise. X_{i6} is a variable that reflects whether individual i lives in an urban area. The coefficient e^{β_j} gives the factor by which we would multiply the odds of having a realization of the dependent variables if we were to change the variable X_{ij} by 1 unit while holding all other variables constant.

2-3-a Descriptive statistics

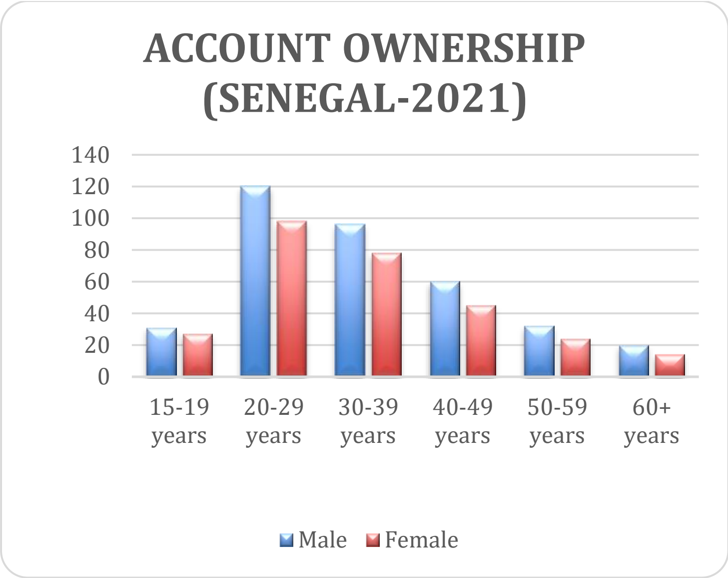
Among 1000 respondents, 498 are women and 502 are men

Table 2: Composition of the sample

AGE	Observations		Account Ownership		Financial account		Mobile money account	
	Male	Female	Male	Female	Male	Female	Male	Female
15-19 years	68	72	31	27	16	10	26	24
20-29 years	161	154	120	98	56	37	111	92
30-39 years	116	127	96	78	61	45	86	60
40-49 years	82	70	60	45	38	22	47	32
50-59 years	41	42	32	24	16	15	28	18
60+ years	34	31	20	14	13	9	14	7

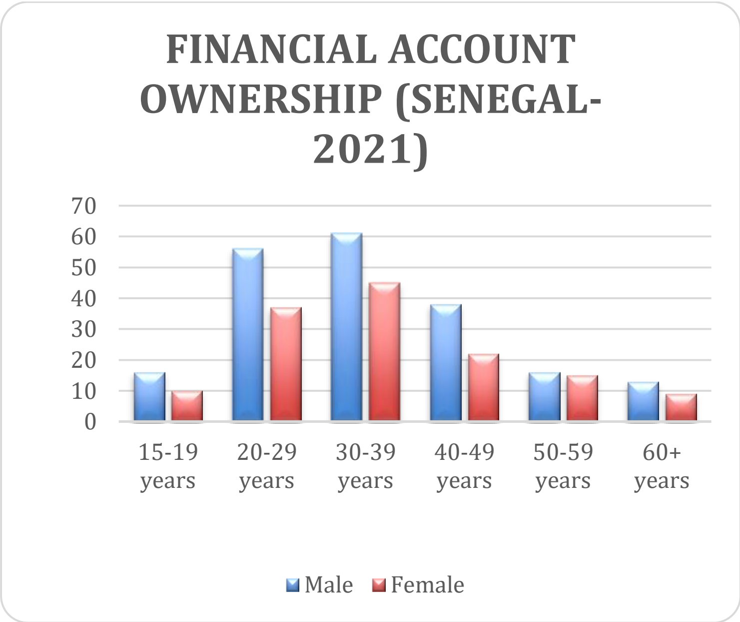
Own calculation based on the dataset

Figure 6: Account Ownership



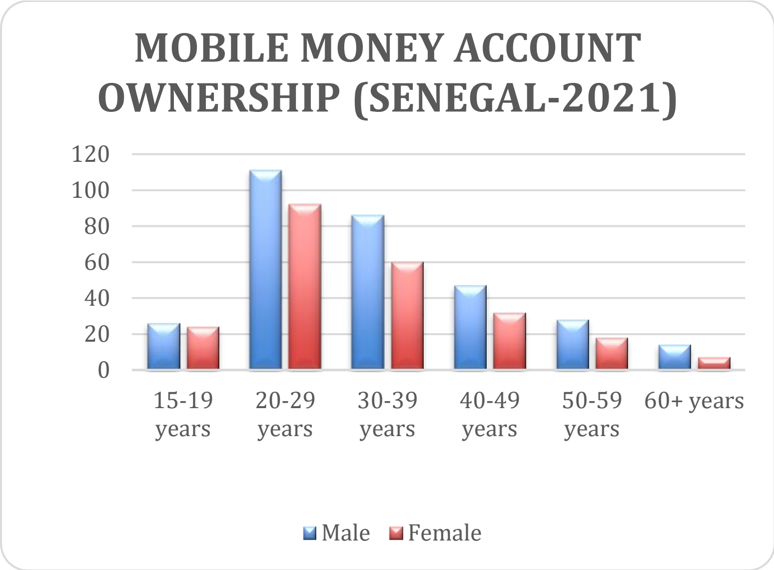
Own calculation based on the dataset

<u>Figure 7</u>: Financial Institution Account Ownership



Own calculation based on the dataset

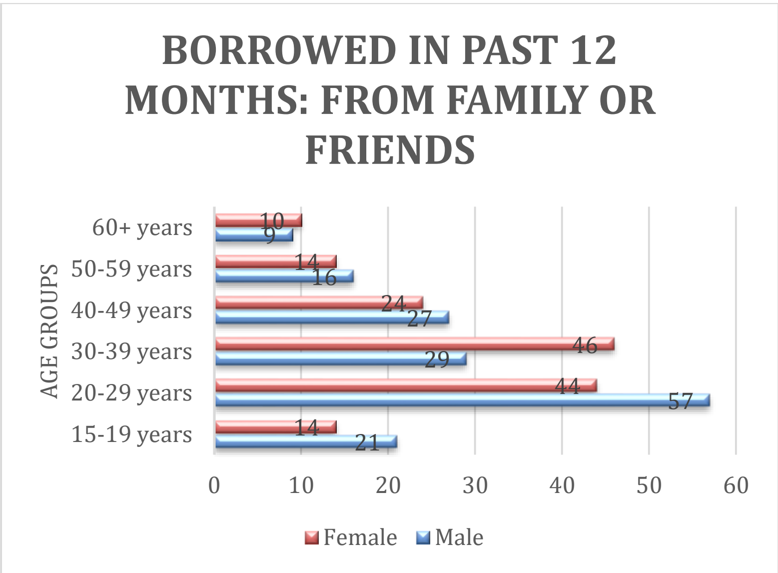
Figure 8: Mobile Money Account Ownership



Own calculation based on the dataset

LENDERS PREFERENCES

Figure 9: Borrowed from Family or Friends in past 12 months



Own calculation based on the dataset

Figure 10: (Women) Borrowed from Family or Friends in past 12 months in rural and urban areas

Own calculation based on the dataset

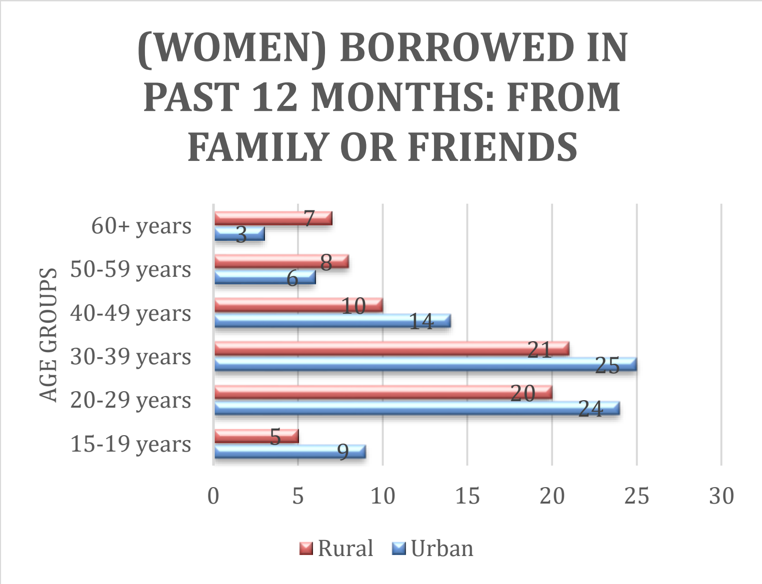


Figure11: Borrowed from Financial Institutions in past 12 months

Own calculation based on the dataset

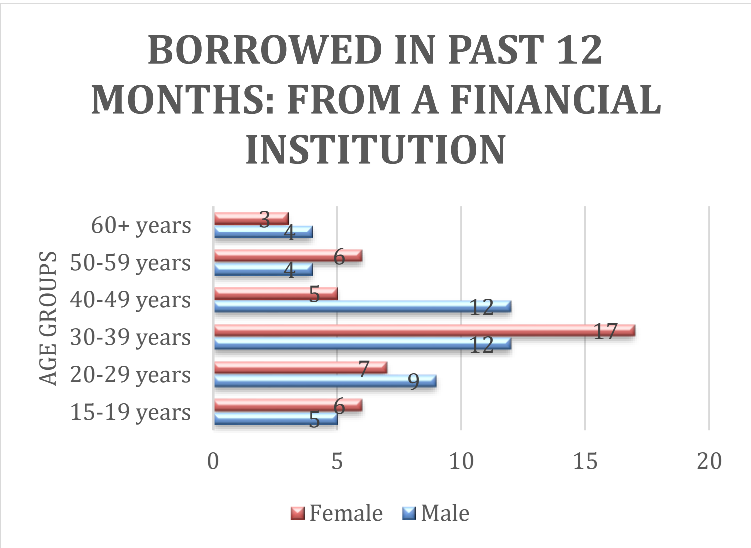
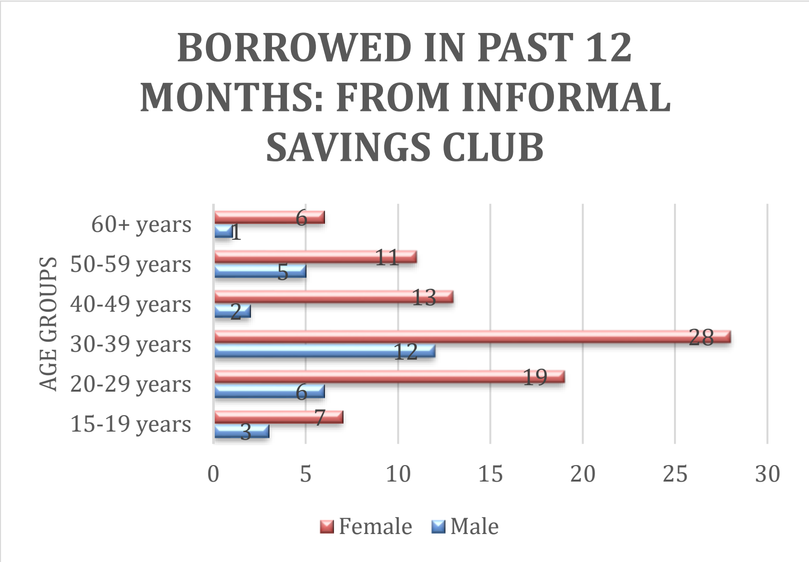


Figure 12: Borrowed from Informal Savings Clubs

Own calculation based on the dataset



These figures disaggregated by age and gender corroborate previous findings on male dominant position in account ownership both in financial institutions and mobile money accounts. The average of account ownership for male is higher for each raw.

To access to financial services 48.9% female respondents of our sample have borrowed from their network family friends.... Only 48.8 % female respondents have borrowed from formal financial institutions. In our sample lending from unformal channels is higher for women. For women the highest percentage is noticed among 20 to 39 age groups. 74% of female respondents of our sample borrowed from informal savings clubs who lack of legal protection for consumers.

Mobile Money Companies are not providing loans in Senegal, only sending and receiving remittances services are provided by their applications. The significant percentage of usage of financial services from twenties to forties could be explained by the use of internet and the mobile phone ownership, so old age is more constrained by their digital capability.

In the next section we analyze the factors explaining the gender difference on financial access.

2-3-b Logistic Regression Model

LOGISTIC REGRESSION:

We estimate the model in equation (1) using STATA and present the results in the below table.

Table 5 : Results of logistic regression (with actual coefficients)

VARIABLES	(1) Account ownership	(2) Financial inst. Account	(3) Mobile money account
Gender	-0.339**	-0.309**	-0.393***
	(0.147)	(0.144)	(0.141)
Age	0.0119**	0.0205***	-0.00427
	(0.00519)	(0.00514)	(0.00501)
Education Level	0.909***	0.537***	0.856***
	(0.144)	(0.122)	(0.131)
Income Quintile	0.248***	0.0529	0.278***
	(0.0546)	(0.0543)	(0.0530)
Employment	0.882***	1.066***	0.723***
	(0.154)	(0.175)	(0.153)
Urbanicity	-0.210	-0.276*	-0.251
	(0.159)	(0.163)	(0.155)
Constant	-2.028***	-2.645***	-1.806***
	(0.475)	(0.477)	(0.456)
Observations	998	998	998

Standard errors in parentheses
*** $p<0.01$, ** $p<0.05$, * $p<0.1$

We can rewrite the results of the above table by transforming the actual coefficients into odd ratios. To do so, we apply an exponential transformation to all the coefficients. We obtain the below table:

Table 6: Results of logistic regression (with odd ratios)

VARIABLES	(1) Account ownership	(2) Financial inst. Account	(3) Mobile money account
Gender	0.712**	0.734**	0.675***
Age	1.012**	1.021***	0.996
Education Level	2.482***	1.711***	2.354***
Income Quintile	1.281***	1.054	1.320***
Employment	2.416***	2.904***	2.061***
Urbanicity	0.811	0.759*	0.778
Constant	0.132***	0.071***	0.164***
Observations	998	998	998

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 7: Results of logistic regression (age groups)

VARIABLES	(1) Account ownership	(2) Financial inst. Account	(3) Mobile money account
Gender	**-0.392*****	**-0.334****	**-0.436*****
	(0.150)	(0.145)	(0.144)
Age groups:			
15-19 years	**-0.587***	**-0.911****	0.0919
	(0.325)	(0.354)	(0.342)
20-29 years	0.311	**-0.654****	**1.039*****
	(0.299)	(0.307)	(0.312)
30-39 years	0.505	0.0323	0.861***
	(0.307)	(0.308)	(0.319)
40-49 years	0.373	-0.178	0.501
	(0.327)	(0.327)	(0.336)
50-59 years	**0.648***	0.0225	**1.034*****
	(0.362)	(0.362)	(0.369)
Education Level	**0.914*****	**0.557*****	**0.848*****
	(0.148)	(0.124)	(0.134)
Income Quintile	0.240***	0.0382	0.278***
	(0.0553)	(0.0548)	(0.0540)
Employment	**0.756*****	**0.986*****	**0.613*****
	(0.158)	(0.179)	(0.158)
Urbanicity	-0.185	-0.252	-0.226
	(0.161)	(0.164)	(0.158)
Constant	**-1.764*****	**-1.556*****	**-2.585*****
	(0.490)	(0.491)	(0.497)
Observations	998	998	998

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Due to collinearity the age group 60+ was removed.

2-4 RESULTS

Our **results show that women are less likely to own financial institution and mobile money accounts**. We discuss below the **coefficients, magnitude, and significance** of each of our independent variables.

Gender: Gender is a variable that takes the value of 0 for males and 1 for females. The odds of having an account are multiplied by a factor of 0.676 as the variable 'Gender' goes from 0 to 1. This negative relationship is significant at the 5% level. This significant negative relationship between being a female and owning an account is also present when the dependent variable is the ownership of a financial account or the ownership of a mobile money account. The first row of results thus **suggests that the probability of owning an account is lower for women relative to men** in our dataset, holding all other factors constant.

Age: 'Age' is a discrete variable that reflects the age of the respondent in years. We create a dummy variable for each of five age brackets. For example, the variable '15-19 years' is a dummy variable taking the value of 1 if the respondent's age is between 15 and 19 years and is 0 otherwise. The dropped (or reference) age group in the regression is the 60+ age category. The coefficients for all the age dummies are thus relative to this reference group. Relative to this reference group, individuals in the **youngest cohort of 15-19 years are less likely to own an account or to have a financial account** relative and this decrease in the odds is significant at the 5% level. The trend for this **youngest cohort is reversed when it comes to owning a mobile money account** (i.e. **they are more likely to own a mobile money account than the oldest cohort**), but this relationship is not significant. Older age cohorts, specifically those in the 20-29, 30-39 and 50-59 are all more likely to have a mobile money account than the cohort of 60+ and this increase in the odds is significant at the 5% level. The negative relationship between age and ownership of a mobile money could be related to the fact that **mobile phone penetration and usage rates are higher among the youth and these are key drivers of having a mobile money account**. For account ownership and account at a financial institution, the coefficients are generally not significant, suggesting that the oldest cohort of 60+ is no different than the other younger cohorts for these two variables (with the exception of the youngest cohort of 15-19, as stated above).

Education: 'Education' is a variable that groups people into 4 groups depending on their reported education levels, with higher value corresponding to higher educational attainment. The odds of having an account increases by a factor of 2.49 for respondents in our sample as the variable 'Education' increases by 1 unit. The odds of having a financial account increases by a factor of 1.75 as the variable 'Education' increases by 1 unit. The odds of having a mobile money account increases by a factor of 2.34 as the variable 'Education' increases by 1 unit. All these positive correlations are significant at the 1% level, suggesting that, in line with the current literature, educated people are more likely to own an account.

Income Quintile: 'Income Quintile' is a variable that groups people into 5 quintiles depending on their reported income levels, with higher quintiles corresponding to higher income levels. The coefficients associated with the variable 'Income Quintile' **suggests that the odds of having an account is positively correlated with the income level of the respondent**, though this relationship is only significant for ownership of general account and mobile money account. For the ownership of an account at a financial institution, the odds increase by a factor of 1.039 as we move to higher income quartile, but this increase is insignificant.

Employment: 'Employment' is a dummy variable that takes the value of 1 if the person is employed. For all three dependent variables, the coefficients associated with this variable show that **being employed increases the odds of having a bank account** by a factor of around 2 to 3. This positive correlation is significant at the 1% level.

Urbanicity: This variable takes the value of 1 if the respondent lives in rural areas. We observe a **negative relationship between this variable and our three dependent variables** of interest: the odds of having an account change by a factor of around 0.8 as we move from rural to urban areas, all else equal. However, **this negative relationship is not significant for any of the three** dependent. This lack of significance suggests that differences in account ownership rates between urban and rural areas might not be a stark as we may initially believe.

Taken together, the results from this logistic regression **suggest that educated and employed males are more likely to own an account** than their counterparts with different characteristics.

CHAPTER 3: CONCLUSION & RECOMMANDATIONS

FINANCIAL RESILIENCE OF SENEGALESE WOMEN

We found that socio- economic variables such as education level, income, age and employment… could explain the gap in financial access. Based on our research except the variable urbanity who lacked of significance, the other variables gender, age, education level and employment weakened women's account ownership.

The probability of owning an account is lower for women relative to men in our dataset. These findings reflects the point of many credit studies pointing out that the financial services provided by class in the financial sector do not take into account gender differences.

In many developing countries, formal borrowing channel has increased over the past decade (WB 2021), but 80 millions of people are still lacking access to formal services, save and borrow semi formally (Global Findex 2021).Among the surveyed, educated people are more likely to own an account and respondents living in urban areas are more likely to own an account. The odds of having an account are positively correlated with income and being employed increases the odds of having a bank account as well.

The major source of credit for Senegalese women is informal or semi-formal. They borrow within their networks: families, friends and saving clubs 'Natt'. 74% of female respondents have borrowed from informal saving clubs compared to 26% of male respondents of the sample. 48.9% of female users have borrowed respectively from family and friends, showing that formal channels might not meet all their financial needs. When we use 'natt', in case of failure of the agreement, the consumer is not legally protected (D Mollenkamp, P Rodriguez, P Velasquez 2022). The reasons are not only related to financial constraints, in Sub Saharan Africa 30% owners of mobile money accounts are not capable of using it alone and need help. Most of the time they prefer paying utility bills in cash (WB 2021). Our sample has shown that young people are more likely to own mobile money due to a high phone penetration and usage rates. Credit markets (conventional and digital) are complementary and using digital innovations might be a great opportunity to change female access to credit and other financial services. Digital credit remotely removes accessibility and collateral constraints (Johnen & Muhboff). In this sample male respondents have dominant position in account ownership both in financial institutions and mobile money accounts.

RECOMMANDATIONS

The share of men and women financially included by usage of formal financial services credit included may be increased as well by different policies focusing on these five followings points:

-National Identification Ownership: Identification is a pre-requisite for accessing credit and other financial services. Lacking national identification hinders actions enabling financial resilience; implementing an efficient inclusive Digital Identification Program in remote areas is needed.

-Mobile Phone Ownership: In Sub Saharan Africa 35% of adults do not have a phone (Global Findex Report 2021). Women are less likely than men to use mobile phones and usually get lower digital credit scores (Brailovskaya et al.2021). Increasing mobile phone ownership will expand the use of financial services.

-Accessible Internet: The absence of interactions among forties to sixties in our sample pointed out their limited access and usage of the internet (Tables 9&10). Government policies diversifying Mobile Network Operators and loosening usage barriers will be useful in this area and market regulations defining interest rates caps.

-Education /Capability: Senegalese borrowing and saving from formal sources are more capable and aware than those using informal sources or don't borrow at all. Inexperienced women may not gain from account ownership increase. Enhancing financial literacy level and numeracy through training programs dedicated to women could be coupled with conception by Financial Providers of basic machines, tools for users and capability enhancing programs. Female youth and elders are consumer segments that Financial Providers should be investing in.

-Digital Banking: Operators and banks partnerships can offer digital credit product reasonable interest rate and repayment period (Johnen & Mubhoff 2022. 2). A credit study done in Kenya by Jonhen & Mubhloff highlighted that credit digital lending monopole without adequate regulation may contribute to increasing gender gap in financial inclusion (2022.3). Affordable financial services might increase investments and consumption of Senegalese women. Financial Services Providers may use existing data like credit registry and demographic characteristics in Senegal to tailor services offered.

INCREASE SOURCES OF FINANCIAL INCLUSION

The obstacles may be removed by talking several measures in three different areas:

-1st : POSITIVE POLICY ENVIRONMENT

A well designed regulatory framework can promote positive habits and behaviors and high awareness of financial services and products (WB 2016). Consumer's protection through relevant policies is crucial for reaching financial inclusion and increased credit access. The Covid crisis pushed governments to loosen financial fees. In Rwanda and Kenya governments made different policies promoting digital finance usage and reduced transaction fees (Global Findex Report 2021). We can take the opportunity to change behaviors, increase legal rights of borrowers and promote affordable inclusive financial tools for all of us.

-2nd: DIGITALIZATION OF FINANCIAL SERVICES. Traditional gender roles born by women impact female access and usage of conventional financial services. Household dynamics can be easily integrated in the digital credit market where credit has a larger number and benefits to credit in a short time by lifting usage of traditional data and promoting automated credit approval process (Johnen and Mubhoff 2022). It could be beneficial for Senegalese women who often lack of collateral and have less control over resources. Their access to finance, will help reduce costs of digital transactions, channel wage payments and remittances (Findex Report 2021)

-3rd: TARGET THE MOST VULNERABLE UNBANKED Despite the growing number of account ownership in developing countries (from 42% to 71% ten years later Global Findex 2021). Women and the poorest are not fully benefiting from financial services. Substantial amount of credit does not necessarily mean that a large share of the population has access to it. In Vietnam, the private sector credit line amounts to 112% of the GDP while the formal account ownership for adults is estimated at 21% (Demigurck Kunt 2013 p 290). Their efficient participation in a fairer distribution of incomes in the labor market is weakened by the use of informal channels. In Sub Saharan Africa around 15% of GDP losses may be due by gender gap in the labour market and those left behind (Beck and de la Torre 2007, Beck, Demigurck- Kunt and Martinez Peria 2007a H Morsy and H Youssef 2017 p2, 2007).

SUGGESTIONS FOR ADDITIONAL STUDIES

Digital credit is identified as the main enabler of financial inclusion for all. In many credit studies borrowers from semi-formal channels are not considered being financially included and are not bound by the regulations of the formal credit market. It limits semi-formal lenders to access to formal credit services. Women are more likely to get lower credit scores than men. Further studies on law regulations, enforcement practices, and gender differences in informal, semi-formal credit markers adding socio-cultural, political factors need to be done in order to protect female consumers. Governments, Institutions or Financial Service Providers looking to conduct credit research may look further segmentations on consumer preferences with specific products related to social norms. Increasing regulations may give us a wide variety of financial services offers and raise chances to get credits.

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Abstract

세네갈 여성의 재정 접근성 향상

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