

# Financial Inclusion: Empirical Verification among Households in Congo-Brazzaville

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**How to cite this paper:** Leonard, N. S. (2025). Financial Inclusion: Empirical Verification among Households in Congo-Brazzaville. *Theoretical Economics Letters*, 15, 234-248.

<https://doi.org/10.4236/tel.2025.151014>

**Received:** October 8, 2024

**Accepted:** February 24, 2025

**Published:** February 27, 2025

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## Abstract

Congo, like other African countries, has low financial inclusion. However, in recent years, there has been an increase in the number of traditional and microfinance banks. This increase was driven by reforms in the financial and banking sector. However, these reforms have not significantly improved household financial inclusion indicators. This study therefore pursued the following objectives: what are the determinants of household financial inclusion in the Congo? And what are the barriers to household financial inclusion? The methodology used was based on a field survey. The survey involved a sample of 2000 individuals aged 18 and over. The study used econometric analysis, particularly probit models. The results revealed the following determinants of financial inclusion: age, women, income and educational level. As for the barriers to financial inclusion, the following determinants can be noted: low income of individuals; preference for hoarding; the financial conditions required for opening an account. From this study, the following conclusions were drawn: effectively implement the policy of liberalization of the banking and financial system and the overhaul of monetary policy instruments; set up a regulatory and supervisory body for banks and financial institutions in order to promote competition; integrate financial inclusion into national gender policies; develop strategies for the employability of young people and women; promote women's education and promote women's empowerment.

## Keywords

Financial Inclusion, Bank, Financial Institution, Saving, Loan

## 1. Introduction

In countries with low income in sub-Saharan Africa, the share of the population over the age of fifteen having opened a bank account in a formal financial

institution was 24% in 2011 compared to 43% in middle-income countries, more than 90% for advanced countries, and it is less than 10% in the Franc Zone (Guérineau and Jacolin, 2014). Gelbard et al. (2014) find that the role of banks in financial intermediation in sub-Saharan Africa is less pronounced than in other countries, although there has been a catch-up since the years of 2000. According to these authors, in 2013, the ratios of “bank deposits/GDP” in middle-income countries averaged about 43% in sub-Saharan Africa, compared to 121% outside Africa, while these ratios were 30% in low-income countries in sub-Saharan Africa and 34% about Africa's outside countries. Nevertheless, banking systems in Africa have made slight progress, particularly since 2000. Still dominated by public banks and subject to restrictive regulation during the 1980s and 1990s, they have been transformed by a wave of financial liberalization, regulatory and institutional improvements. Today, most countries have more developed and stable financial systems than before, although challenges remain, such as concentration, limited competition, high costs, and short maturities (Beck and Cull, 2014). This situation shows that in sub-Saharan Africa, financial inclusion is still limited. This can be a drag on economic growth.

Financial inclusion is defined as a better access to and more intensive use of financial services (Guérineau and Jacolin, 2014). On the other hand, a developed banking and financial sector is the essential component of an economy and several studies have demonstrated the positive links between financial development and economic growth (Demirgüç-Kunt and Levine, 2008; Kpodar and Guillaume, 2006). Similarly, developed financial markets play a fundamental role in monitoring financial flows and channelling savings. Access to financial services allows to low-income populations to smooth their budgetary constraints and consumption, thus avoiding falling into “poverty traps” following an exogenous shock (Banque de France, 2014). Beck and Cull (2014) note four specific factors that have hampered banking development in Africa compared to other developing regions. First, the small size of many economies does not allow financial service providers to take advantage of economies of scale. Second, a large number of economic agents operate in the informal sector and do not have the official documents required for financial transactions. Third, volatility at both the individual level, linked to fluctuations in the income flows of many micro-enterprises and households, and at the aggregate level, linked to the dependence of many African economies on commodity exports, further increases the costs and risks for financial service providers. Finally, fourth, governance problems continue to weaken many private and public financial institutions. Furthermore, there is a renewed interest by governments in Africa in strengthening the role that the financial system should play in economic development. Beck et al. (2012) argue that today, financial sector policies have become a cornerstone of the debate on how to stimulate growth in low-income countries, reduce levels of extreme poverty and ultimately contribute to the achievement of the Millennium Development Goals.

Congo, like other African countries, is characterized by unsatisfactory financial

inclusion. However, in recent years, there has been an increase in the number of traditional or second-tier banks and the creation of several microfinance structures. The breakthrough of microfinance was presented as a palliative to the effects of banking sector liberalization policies, in particular the drying up of credit for small and medium-sized entrepreneurs (Fouillet and Morvant-Roux, 2018). The 1980s and 1990s were marked by banking crises that resulted in the failures of several banks, particularly public ones. After this period of instability in the banking system, the country initiated reforms in the financial and banking sector. The main mission of the reforms was to ensure the modernization of the financing mechanisms of the economy. These reforms focused on the liberalization of the banking and financial system, the overhaul of monetary policy instruments and the change of the institutional framework, particularly in terms of regulation and control of banks and financial institutions. Considering this environment, what is the situation of financial inclusion in the Congo? What are the determinants of financial inclusion? And what are the barriers to financial inclusion? The study is structured as follows: the first section analyzes the theories on financial inclusion or exclusion; the second presents the literature review; the third focuses on the source of the data; the fourth focuses on the descriptive analysis of the results; the fifth presents the econometric analysis of the results and the sixth focuses on the conclusion.

## **2. Theories of Financial Inclusion and Exclusion**

The theory of financial inclusion or exclusion is based on neoclassical and neo-Keynesian economic theories. The first theory emphasizes economic agents and places the state in a secondary role. Firms and consumers are assumed to be rational, well-informed and competitive. According to neoclassical theory, financial inclusion or exclusion is the result of consumer choice and/or government policy. With respect to consumer choice, this is possible when consumers choose to use informal financial services instead of traditional markets due to economic costs that lead to limited access. It is also possible that government policy creates distortions in credit markets. On the other hand, neo-Keynesian analysis emphasizes market distortions due to information asymmetries. With respect to financial exclusion, it can be caused by credit constraint. Stiglitz and Weiss (1981) provided an explanation for this issue by highlighting the effect of imperfect information on the exclusion of borrowers from the credit market. Creditors tend to raise interest rates and restrict credit.

### **Interdisciplinary Theories**

Knowing that financial inclusion or exclusion is interdisciplinary in nature, several approaches can be considered to analyze this phenomenon. Interdisciplinary theory concerns institutional theory, political economy, and poverty and community analyses (Buckland, 2012). Each of these theories has been influenced by several disciplines such as economics, sociology, psychology, and geography.

Regarding the institutional analysis, it offers important insights into financial inclusion. It refers to analyses that seek to understand the general context and the main institutions influencing access to the banking system. For example, in the framework of new institutional economics, the role of history and institutions in markets, governments, communities, and societies is analyzed (Buckland, 2012). Theories on political economy are also useful theories to understand financial inclusion or exclusion. These theories refer to the examination of the social context, taking into account social, state and political structures (Buckland, 2012).

Other interdisciplinary theories include poverty and community analysis, spatial and geographic analyses, and household economics. Community analyses highlight the realities and experiences of the financially excluded by examining the structures that reinforce inequality and poverty. Results show that low-income consumers generally behave very rationally based on the relative costs and benefits of various types of financial services (Buckland, 2012). In spatial and geographic analyses, studies seek to determine whether traditional banks are more located in urban areas than in rural areas (Buckland, 2012). In household economics, it helps to understand the link between household decision-making and resource allocation and the financial system.

According to neoclassical theory, financial inclusion or exclusion is the result of consumer choice and/or government policy. This theory can be applied specifically to Congo by the fact that taking into account the ineffectiveness of government policy on the financial and banking system, a large number of people turn to informal finance. For its part, neo-Keynesian analysis postulates that distortions in the financial market due to information asymmetries explain financial exclusion. Obviously, these information asymmetries on the financial market also exist in the Congo and constitute obstacles to the financial inclusion of many people. Institutional theory, political economy theory and poverty and community analyses on financial inclusion can be applied to Congo by the following facts: 1) bad institutions can constitute obstacles to financial inclusion in the Congo in light of the institutional framework in this country; 2) poverty and community analyses can be used, among other things, as tools to explain the low financial inclusion in the Congo, especially since half of the population is poor.

### 3. Literature Review

The literature review is presented into two points: the microeconomic determinants of financial inclusion and the determinants of barriers to financial inclusion.

#### 3.1. Microeconomic Determinants of Financial Inclusion

The economic recent literature has highlighted some microeconomic determinants of financial inclusion namely income, education, age, gender (Zins and Weill, 2016; Clamara et al., 2014). Indeed, Guérineau and Jacolin (2014) highlighted that the demand for financial services in sub-Saharan African countries does not only depend on the average per capita income of the country, and this

level of income contributes to the low banking in the region. Similarly, [Okoroafor et al. \(2018\)](#) examined the determinants of financial inclusion in Nigeria using a time series of data from 1990 to 2016. They found a positive and significant relationship between financial inclusion and GDP per capita. [Clamara et al. \(2014\)](#) used a quantitative approach to analyze the determinants of financial inclusion in Peru, based on micro-data from surveys. They found significant correlations between socio-economic characteristics of households and financial inclusion. According to their results, age, gender, education and income level seem to influence financial inclusion. [Zins and Weill \(2016\)](#) used the World Bank's Global Findex database of 37 African countries to conduct an investigation on financial inclusion. They found that being male, richer, more educated and older promotes financial inclusion with a greater influence of education and income. [Evans & Adeoye \(2016\)](#), in a study on Africa over the period 2005 to 2014, showed that per capita income, literacy, access to the Internet and Islamic banking activity are important factors explaining the level of financial inclusion. [Ulwodi and Muriu \(2017\)](#) studied financial inclusion across sub-Saharan Africa using 2014 data from Global Findex. They found that income levels lower levels of access to bank accounts. [Bayero \(2015\)](#) examined the determinants of financial inclusion and its gender gap in Nigeria using the 2011 Global Findex dataset. The empirical results showed that younger age, better education, and higher income improve the chances of households being financially included while older age, females, and lower income reduce the odds of financial inclusion. [Zuzana and Weill \(2014\)](#), working on China, found that higher income, better education, being male, and older are associated with greater use of bank accounts and credit. Women in Africa are in a weak position when it comes to obtaining finance for their microenterprises ([BAD, 2012](#)). They have difficulty providing real estate guarantees, due to the land and property law in force and cultural rules that discriminate against women in terms of access to property. [Vikas and Bhawna \(2017\)](#), in a research, identified for all countries in the world factors such as lack of income, lack of financial education, lack of documents required for the loan and lack of trust in local banks, as reasons for not having access to the formal banking system. [Ziadi \(2013\)](#) emphasizes that in middle-income countries, financial exclusion mainly affects women, people with low incomes, the less educated and those in rural areas. He also notes that in Tunisia, in addition to the insufficient level of financial inclusion, the country is characterized by regional disparities in access to finance. [Ashenafi and Mutsonziwa \(2016\)](#) conclude in a research in Southern African countries that gender affects financial inclusion even after controlling for individual characteristics such as household size, age, education, place of residence, marital status, employment status, income and level of education. [Tuesta et al. \(2015\)](#) in a work on Argentina showed that the level of education, income and age are important variables that influence access to financial products such as accounts, credit cards and electronic payments.

The results of the study indicated that age, women, income, and educational

level represent the determinants of financial inclusion. Overall, these results are similar to those obtained in other countries in the world, particularly in Sub-Saharan Africa.

### 3.2. Determinants of Barriers to Financial Inclusion

The economic literature notes two types of barriers to financial inclusion, voluntary exclusion and involuntary exclusion (Ulwodi and Muriu, 2017). Voluntary exclusion is based on microeconomic choices not to use formal financial services. Exclusion occurs on the demand side of financial services. Religious reasons are examples of this type of barrier. Involuntary barriers arise from factors suffered that exclude a population. Exclusion occurs rather on the supply side of financial services.

Include the distance between the client's place of residence and the bank, the burden of transaction costs and economies of scale in the banking sector, dysfunctions due to asymmetric information and imperfect competition, etc. Indeed, Baza and Rao (2017) find that the important obstacles to financial inclusion in Ethiopia are the distance between the place of residence and the bank and the documents required by banks. Hoyo et al. (2013), in a research on Mexico, identify the main obstacles in the financial market: 1) variables relating to individual vulnerability, such as income level, gender, education and occupation and 2) geographical variables in relation to the size of the community in which the individual lives (cities with less than 15,000 inhabitants or more). Avom and Bobo (2014) find that in the countries of the Economic and Monetary Community of Central Africa (CEMAC), collateral constitutes a real constraint on access to credit for both small and medium-sized enterprises and low-income individuals. In addition, these authors highlight that in CEMAC, a number of individuals do not have access to bank credit because they cannot meet the banks' collateral requirements given that they often do not have assets that can be considered as collateral for a loan or, on the contrary, if they do have them, they do not have the appropriate titles. Guéri-neau and Jacolin (2014) note that self-exclusion can be reinforced by gender discrimination and cultural barriers specific to certain ethnic groups and religions. In the absence of adequate regulation (CNUCED, 2014), information asymmetry could lead to an insufficient supply of credit for a given population group or could give rise to moral hazards due to an overabundance of supply and over-indebtedness. In addition, Avom and Bobbo (2014) noted geographical exclusion linked to the financial sector in CEMAC countries. Indeed, populations in remote localities (small and medium-sized towns or rural areas) find themselves heavily penalized and excluded from the financial system. To access the financial services offered by banks, they are forced to make costly trips in terms of financial resources and time to go to the large cities where these establishments are located. This review teaches us that several studies on financial inclusion have been carried out in several developing countries. However, there are very few studies on African countries, particularly those members of CEMAC such as Congo. In this regard, this research

constitutes a contribution to this crucial issue, particularly in this country and the sub-region (Central Africa).

#### **4. Data Sources**

This article used data from the Bank of Central African States (BEAC) survey aimed at helping to develop an action plan for the development of financial inclusion in the Republic of Congo. The survey involved a sample of 2000 individuals aged 18 and over. Individuals were selected from within households across the country. Data collection took place in 2015. Each collection team was responsible for a survey area with a specific number of households. During collection, a survey questionnaire was used. The sample of households surveyed was drawn from a sample of households that was made from the sampling frame of the 2007 General Population Census of Congo, supplemented by the update during the national poverty survey in 2013. The initial sample size was set at 2000 individuals. Indeed, in each targeted locality, the enumeration areas (EAs) were drawn proportionally to their size. The survey covered a sample of 1912 people instead of 2000. This result is explained by the fact that some people refused to answer the questions.

#### **5. Descriptive Analysis**

I summarize the information from the survey. In fact, in the population surveyed, women represent 50.6% and men are 49.4%. The average age of the respondents is around 37 years. The respondents are more single at 81%, followed by married people, or 15% and widowers at 3.9%. The respondents have more secondary education level, 56.2%, those who have higher education level represent 16.5%; the number of people with primary education is 12.5%. Those without education level represent 14.5%. Among the respondents, those who work for their own account are 27.8%; people who are middle managers or supervisors represent a percentage of 11.2%; agents who are senior executives or engineers are 10.1%; employees or skilled workers represent 3.5%. People who have an income of less than 50,000 FCFA are around 46.8%, and those who have an income between 50,000 FCFA and 200,000 FCFA are 17.6%; those who earn 200,000 FCFA and more represent a proportion of 12.5%. The people in the sample live more in large cities, i.e. 79.9% against 20.1% who live in small towns. The survey reveals that people's access to financial institutions remains limited. 22.8% of people have an account in a microfinance structure and 15.3% in a bank. Several barriers to financial inclusion were highlighted by the people interviewed. First, there is the low income of people, at 70%; secondly, the preference to keep money with you, 29.6%; thirdly, the financial conditions required for opening an account, at 27.2%; fourthly, the fees and bank charges are too high at 22.4%, etc. Customers who borrowed money from microfinance institutions represent 17.3%, those who borrowed from banks represent 14%. On the other hand, those who saved are 52.7% at microfinance institutions and 33.8% at banks.

## 6. Econometric Analysis

The econometric analysis is carried out using six discrete choice models called Logit. These models are commonly used in economics when studying the determinants of individual choices. These models make it possible to estimate probabilities of exclusive alternative choices (**Table 1**). The general model Financial inclusion is studied using three indicators, namely the probability of having an account with financial institutions, the probability of saving and the probability of obtaining a loan. Financial institutions are divided into two categories, namely banks and microfinance. Each indicator will constitute an econometric equation. The exogenous variables were selected based on the literature review. The general models for analyzing the determinants of financial inclusion are expressed as follows:

$$Y1 = f(\text{SEXE, AGE, NIVEAU D' ETUDES SCOLAIRE, REVENU}) \quad (1)$$

$$Y2 = f(\text{SEXE, AGE, NIVEAU D' ETUDES SCOLAIRE, REVENU}) \quad (2)$$

$$Y3 = f(\text{SEXE, AGE, NIVEAU D' ETUDES SCOLAIRE, REVENU}) \quad (3)$$

And

- *Y1*: The probability of having an account in a bank or microcredit institution. This variable takes 1 if the person has an account with a bank or a microfinance institution structure and 0 if not.
- *Y2*: The probability of saving money in a bank or microcredit. This dummy variable takes the value 1 if the client has savings and 0 otherwise.
- *Y3*: The probability of obtaining a loan from a bank or microcredit institution. This variable takes 1 if the person has obtained a loan and 0 otherwise.
- *WOMAN*: This dummy variable takes the value 1 if the person is a woman and 0 otherwise. Women are more likely to work in informal jobs and in vulnerable, poorly paid or undervalued jobs. They also do not have the same access to financial services as men.
- *AGE*: This is a variable expressed in number of years and it provides information on the age of the client. Young people and young adults aspire to grow up and become truly adults, but many of them find themselves in an intermediate state. They enter adulthood without having achieved the financial autonomy that is generally associated with it (*WSBI, 2014*).
- *SCHOOL LEVEL*: This is a set of three categories (primary, secondary, higher); this variable takes the value 1 if the level of education of the person corresponds to one of the category and 0 otherwise. An educated person compared to an uneducated one, would be better informed about the existence of the different financial institutions and the opportunities they offer. He would be more willing to assimilate the procedures and operating principles, to appreciate the benefits and could therefore decide on the volume of his operations with the institution (*Ouedraogo, 2008*).
- *INCOME*
- *Q1 (Quintile 1)*: This dummy variable takes 1 if the income is in the first

income quintile and 0 otherwise.

- Q2 (Quintile 2): This dummy variable takes 1 if the income is in the second income quintile and 0 otherwise.
- Q3 (Quintile 3): This dummy variable takes 1 if the income is in the third income quintile and 0 otherwise.
- Q4 (Quintile 4): This dummy variable takes 1 if the income is in the fourth income quintile and 0 otherwise. People with high incomes tend to have bank accounts.

### 6.1. Econometric Model

Based on random utility models, the utility function is assumed to be linear of type:

$$U_{ij} = V_{ij} + \epsilon_{ij} \quad (4)$$

where  $i$  represents a rational individual and  $j = 1, \dots, J$  the set of possible choices (the alternatives). The probability  $P_{ig}$  that, faced with two scenarios  $g$  and  $h$  from the same series of choices  $S_i$ ,  $i$  chooses  $g$  rather than  $h$  must be such that  $U_{ig} > U_{ih}$ :

$$P_{ig} = \Pr(U_{ig} > U_{ih}) = \Pr(V_{ig} - V_{ih} > \epsilon_{ih} - \epsilon_{ig}) \quad (5)$$

which, based on random utility theory can be rewritten:

$$P_{ig} = \Pr(V_{ig} - V_{ih} > \epsilon_{ih} - \epsilon_{ig}) \quad (6)$$

The traditional assumption is that the error terms  $\epsilon_{ig}$  are identical and independently distributed according to a Gumbel distribution (type I extreme value distribution).

### 6.2. Analysis of Results

**Table 1** presents the results of the probit models of the determinants of financial inclusion indicators in the case of banks. The three models relating to banks are globally significant because their probabilities associated with the chi-square tests are lower than the 5% threshold. To test the heteroscedasticity of errors, we used the likelihood ratio (LR) test which tests in  $H_0$ : Homoscedasticity of errors and in  $H_1$ : Heteroscedasticity of errors. For model (1), the implementation of the test concluded with the rejection of  $H_0$ , i.e. the existence of heteroscedasticity. Also, to correct the heteroscedasticity, a corrected estimate of the variance-covariance matrix of the estimators (VCE) was obtained using the “vce (robust)” option of the profit regression command (**Table 1** and **Table 2**).

Indeed, the woman variable significantly influences the probability of having an account, saving and obtaining a loan. The signs associated with the marginal effects are negative for the three models. When the client is a woman, this reduces the probability of having an account, saving and obtaining a loan by 1.5%; 1.4% and 1.1% respectively. This result can be explained by the theory of voluntary exclusion. According to this theory, discrimination in property and cultural rights

to the detriment of women contributes to lower financial inclusion. The factors of gender disparity in financial inclusion may be the following: 1) cultural prejudices to the detriment of women; 2) The low level of education of women compared to men; 3) the segmentation of the labor market which means that women are concentrated in the informal sector, generating low incomes and exposing them to precariousness and poverty. Policy measures; integrate financial inclusion into national gender policies; promote women's education; promote women's empowerment.

**Table 1.** Results of logit models of the determinants of financial inclusion indicators in the case of banks.

|                         | probability of having an account | probability of saving | probability of getting a loan |
|-------------------------|----------------------------------|-----------------------|-------------------------------|
| Woman                   | -0.079<br>(0.015)**              | -0.070<br>(0.014)**   | -0.036<br>(0.011)**           |
| age                     | 0.022<br>(0.003)**               | 0.019<br>(0.003)**    | 0.015<br>(0.003)**            |
| age2                    | -0.000<br>(0.000)**              | -0.000<br>(0.000)**   | -0.000<br>(0.000)**           |
| Q2                      | -0.032<br>(0.022)                | -0.024<br>(0.020)     | -0.027<br>(0.016)             |
| Q3                      | 0.053<br>(0.021)*                | 0.030<br>(0.020)      | 0.006<br>(0.013)              |
| Q4                      | 0.066<br>(0.022)**               | 0.036<br>(0.020)      | 0.019<br>(0.012)              |
| primary                 | -0.012<br>(0.047)                | -0.012<br>(0.044)     |                               |
| secondary               | 0.083<br>(0.044)                 | 0.046<br>(0.040)      | 0.045<br>(0.020)*             |
| superior                | 0.234<br>(0.044)**               | 0.155<br>(0.041)**    | 0.087<br>(0.020)**            |
| Number of observations  | 1.912                            | 1.912                 | 1.912                         |
| Pseudo R-squared        | 0.22                             | 0.17                  | 0.20                          |
| log-likelihood          | -635.84                          | -555.23               | -288.61                       |
| Prob > chi <sup>2</sup> | 0.0000                           | 0.0000                | 0.0000                        |

\* $p < 0.05$ ; \*\* $p < 0.01$ . Source: Table designed by the author using Stata software.

Age is significant with a positive sign in all three equations and influences the probability of having an account, saving and obtaining a loan. The sign of this variable is positive in these three equations, this means that the older the client, the greater the probability of having an account, saving and obtaining a loan. Several authors in different countries have found the same result (Clamara et al. (2014), Tuesta et al. (2015), Bayero (2015)). In our case, this result could be explained by the fact that older people have a higher employability than younger people (young people). The income earned from economic activities allows them to access banks. However, the unemployment situation in which the majority of younger people (young people) live tends to exclude them from banking establishments due to lack of income. The labor market in the Congo is characterized by massive youth unemployment (Kuépié and Norman, 2013). The Banque de France (2014) finds that in the Franc Zone, people aged 25 or over have banking rates of 15.5% and those under 25 have a rate of 6.1%.

Age2 has a negative effect on the probability of having an account, saving and obtaining a loan. The signs of this variable show that the older the customer, the lower the probability of having an account, saving and obtaining a loan. This sign tells us that age has a non-linear relationship in the three models. Therefore, older people seem to have a high level of financial inclusion, but after a certain age, the probability of financial inclusion decreases. Considering the probability of saving, this result can be supported by Modigliani's life cycle theory (Modigliani, 1986). Thus, according to this theory, rational individuals hope to stabilize the level of their consumption throughout their age. Their income evolves according to their age and savings are the difference between consumption and income. At the beginning of working life, when income is low, individuals get into debt, subsequently, income increases until it exceeds the desired consumption threshold, which results in positive savings; with retirement, income declines and individuals dissave again.

Regarding the income variables, only Q3 and Q4 (higher income quintiles) are significant in terms of the probability of having an account. The signs related to these variables are positive. On this subject, Guérineau and Jacolin (2014) emphasize that the demand for financial services is determined by the purchasing power of agents. The variable (higher education level) is significant in terms of the probability of having an account with a positive sign in all three models, and the secondary education level variable is significant in the third model. Indeed, the higher level in particular can be considered as an indicator linked to the theory of human capital in explaining the financial behavior of individuals. An educated person compared to an uneducated person would be better informed about the existence of different financial institutions and the opportunities they offer. It would be more willing to assimilate the procedures and operating principles, to appreciate the benefits, and could therefore decide on the volume of its operations with the institution (Ouedraogo, 2008).

**Table 2** presents the results of the (probit) models of the determinants of

financial inclusion indicators in the case of microfinance. The three models relating to microfinance are globally significant because their probabilities associated with the chi-square tests are lower than the 5% threshold. Some variables are significant when considering these models. Compared to the determinants of the financial inclusion indicators of banks, the results show that there are not enough notable differences with those related to microfinance. Firstly, the variables woman, and age2 gave the same results as those contained in **Table 1**. Secondly, at the level of the income variable, quintile 2, quintile 3 and quintile 4 are significant with the positive sign at the level of the first two models and in the last model, only quintile 2 is not significant. This result shows that when moving from the lowest quintile (Q2) to the high quintiles (Q3), the magnitude of the coefficients tends to reduce the indication that the lower quintiles are associated with a weak effect of financial inclusion.

**Table 2.** Results of logit models of the determinants of financial inclusion indicators in the case of microfinance.

|                        | Probability of having<br>an account | Probability of<br>saving | Probability of<br>getting a loan |
|------------------------|-------------------------------------|--------------------------|----------------------------------|
| woman                  | -0.085<br>(0.017)**                 | -0.055<br>(0.016)**      | -0.047<br>(0.012)**              |
| age                    | 0.023<br>(0.003)**                  | 0.021<br>(0.003)**       | 0.010<br>(0.002)**               |
| age 2                  | -0.000<br>(0.000)**                 | -0.000<br>(0.000)**      | -0.000<br>(0.000)**              |
| Q2                     | 0.107<br>(0.023)**                  | 0.103<br>(0.021)**       | 0.009<br>(0.015)                 |
| Q3                     | 0.203<br>(0.023)**                  | 0.207<br>(0.021)**       | 0.037<br>(0.014)**               |
| Q4                     | 0.247<br>(0.024)**                  | 0.199<br>(0.022)**       | 0.055<br>(0.014)**               |
| primary                | 0.053<br>(0.063)                    | 0.051<br>(0.075)         | 0.052<br>(0.061)                 |
| secondary              | 0.093<br>(0.026)**                  |                          | 0.060<br>(0.019)**               |
| superior               | 0.202<br>(0.029)**                  | 0.110<br>(0.019)**       | 0.075<br>(0.021)**               |
| Number of observations | 1.912                               | 1.912                    | 1.912                            |

**Continued**

|                         |         |         |         |
|-------------------------|---------|---------|---------|
| Pseudo R-squared        | 0.21    | 0.18    | 0.17    |
| log-likelihood          | -809.46 | -727.75 | -350.17 |
| Prob > chi <sup>2</sup> | 0.0000  | 0.0000  | 0.0000  |

\* $p < 0.05$ ; \*\* $p < 0.01$ . Source: Table designed by the author using Stata software.

Third, regarding the variable relating to the level of education, the variables secondary level and higher level are significant with the positive sign at the level of the first and third model, only the variable higher level is significant at the level of the second model.

The results of the study indicated that age, women, income, and educational level represent the determinants of financial inclusion. Overall, these results are similar to those obtained in other countries in the world, particularly in Sub-Saharan Africa.

## 7. Conclusion

The purpose of this study was to analyze financial inclusion in Congo based on households survey. Financial inclusion in this country remains unsatisfactory due to the results relating to financial inclusion indicators which are weak (proportion of people with bank accounts, proportion of people with accounts in microcredit structures, proportion of people who have obtained loans and proportion of people who have borrowed money from banks and microcredits). Similarly, the arrival in recent decades on the financial market of a significant number of microfinance institutions has not attracted significant demand despite the fact that they were supposed to offer facilities for granting microcredits in order to support self-employment and financial services. However, microfinance is presented as a safety net. Furthermore, the study revealed from the econometric results some factors that determine financial inclusion: age, woman, income, educational level. Several barriers to financial inclusion were highlighted by the respondents. Among these barriers, we note firstly, the low income of people (70%); secondly, the preference to hoard (29.6%); thirdly, the financial conditions required to open an account (27.2%); finally, fourthly, the fees and bank charges that are too high (22.4%). From this study, the following conclusions were drawn: effectively implement the policy of liberalization of the banking and financial system and the overhaul of monetary policy instruments; set up a regulatory and supervisory body for banks and financial institutions in order to promote competition; integrate financial inclusion into national gender policies; develop strategies for the employability of young people and women; promote women's education and promote women's empowerment.

There are emerging trends in the field of financial technologies that could have an impact on future research or methodologies in this field in the Congo. Indeed, we observe innovations in financial technologies such as money transfers from mobile phones in the Congo. This innovation is used by several people in the Congo.

## Conflicts of Interest

The author declares no conflicts of interest regarding the publication of this paper.

## References

- Ashenafi, B., & Mutsonziwa, K. (2016). *Gender and Financial Inclusion Analysis of Financial Inclusion of Women in the SADC Region*. Policy Research Paper N0.01/2016.
- Avom, D., & Bobbo, A. (2014). Réglementation bancaire et exclusion financière dans la CEMAC. *Les Cahiers de l'Association Tiers-Monde*, 29, 127-136.
- BAD (2012) *Document de politique générale: Faire progresser l'inclusion financière des femmes en Afrique, Secrétariat de la finance de l'Afrique*. Banque africaine de développement. <https://www.mfw4a.org/>
- Banque de France (2014). *La politique et les agrégats monétaires dans les zones d'émission africaines-les enjeux de l'inclusion financière en Zone franc*. Rapport de la Zone franc. <https://www.banque-france.fr/fr>
- Bayero, M. A. (2015). Effects of Cashless Economy Policy on Financial Inclusion in Nigeria: An Exploratory Study. *Procedia-Social and Behavioral Sciences*, 172, 49-56. <https://doi.org/10.1016/j.sbspro.2015.01.334>
- Baza, A. U., & Rao, K. S. (2017). Financial Inclusion in Ethiopia. *International Journal of Economics and Finance*, 9, 191-201. <https://doi.org/10.5539/ijef.v9n4p191>
- Beck, T., & Cull, R. (2014). Les systèmes bancaires en Afrique subsaharienne: Un état des lieux. *Revue d'économie financière*, 116, 43-56. <https://doi.org/10.3917/ecofi.116.0043>
- Beck, T., Maimbo, S. M., Faye, I., & Triki, T. (2012). *La finance en Afrique-au delà de la crise*. The World Bank.
- Buckland, J. (2012). *Hard Choices: Financial Exclusion, Fringe Banks and Poverty in Urban Canada*. University of Toronto Press. <https://doi.org/10.3138/9781442685291>
- Clamara, N., Peña, X., & Tuesta, D. (2014). *Factors That Matter for Financial Inclusion: Evidence from Peru*. BBVA Research, Madrid.
- CNUCED (2014). *Impact de l'accès aux services financiers, notamment concernant les incidences des envois de fonds sur le développement: Émancipation économique des femmes et des jeunes*. TD/B/C.I/EM.6/2, Nations Unies, Genève.
- Demirgüç-Kunt, A., & Levine, R. (2008). *Finance, Financial Sector Policies and Long-Run Growth*. World Bank Group.
- Evans, O., & Adeoye, B. (2016). Determinants of Financial Inclusion in Africa: Approche sur le panel dynamique. *University of Mauritius Research Journal*, 22.
- Fouillet, C., & Morvant-Roux, S. (2018). Financial Inclusion, a Driver of State Building in India and Mexico? *Revue internationale de politique de développement*, 10, 1-19. <https://doi.org/10.4000/poldev.2519>
- Gelbard, E., Gulde, A., & Maino, R. (2014). Développement financier en Afrique subsaharienne: Les enjeux pour une croissance soutenue. *Revue d'économie financière*, 116, 19-42. <https://doi.org/10.3917/ecofi.116.0019>
- Guérineau, S., & Jacolin, L. (2014). L'inclusion financière en Afrique subsaharienne: Faits stylisés et déterminants. *Revue d'économie financière*, 116, 57-80. <https://doi.org/10.3917/ecofi.116.0057>
- Hoyo, C. M., Peña, X. H., & Tuesta, D. (2013). Demand Factors That Influence. *International Journal of Economics and Finance*, 9.
- Kpodar, K., & Guillaumont, J. S. (2006). Développement financier, instabilité financière et

- croissance économique. *Économie & prévision*, 174, 87-111.  
<https://doi.org/10.3406/ecop.2006.7954>
- Kuépié, M., & Norman, C. J. (2013). Education et marché du travail à Brazzaville et Pointe-Noire (Congo-Brazzaville). *STATECO*, 107, 75-104.
- Modigliani, F. (1986). Lifecycle, Individual Thrift, and the Wealth of Nations. *American Economic Review*, 3, 297-313.
- Okoroafor, O. K., Oluseyi, A., & Awe, E. (2018). Empirical Analysis of the Determinants of Financial Inclusion in Nigeria: 1990-2016. *Journal of Finance and Economics*, 6, 9-25.
- Ouedraogo, B. (2008). Les déterminants de l'intensification du volume de l'épargne dans le système financier décentralisé au Burkina Faso: Cas des caisses populaires de Ouagadougou. *Revue Tiers Monde*, 196, 901-926. <https://doi.org/10.3917/rtm.196.0901>
- Stiglitz, J. E., & Weiss, A. (1981). Credit Rationing in Markets with Imperfect Information. *The American Economic Review*, 71, 393-410.
- Tuesta, D., Sorensen, G., Haring, A., & Cámara, N. (2015). Financial Inclusion and Its Determinants: The Argentine Case. 15/03 Working Paper.
- Ulwodi, D. W., & Muriu, P. W. (2017). Barriers of Financial Inclusion in Sub-Saharan Africa. *Journal of Economics and Sustainable Development*, 8, 66-81.
- Vikas, N., & Bhawna, D. (2017). An In-Depth Study of Factors Affecting Financial Inclusion. *International Journal of Engineering Technology Science and Research*, 4.
- WSBI (2014). *L'inclusion financière des jeunes et des jeunes adultes*. Document de travail. <https://www.wsbi-esbg.org/>
- Ziadi, L. (2013). L'inclusion financière autour de la Méditerranée. Cas de la Tunisie. *Maghreb-Machrek*, 217, 31-62. <https://doi.org/10.3917/machr.217.0031>
- Zins, A., & Weill, L. (2016). The Determinants of Financial Inclusion in Africa. *Review of Development Finance*, 6, 46-57. <https://doi.org/10.1016/j.rdf.2016.05.001>
- Zuzana, F., & Weill, L. (2014) *Understanding Financial Inclusion in China*. Discussion Papers 10/2014, BOFIT—Institute for Economics in Transition Bank of Finland.