Gender differences in access to corporate financial services in Cameroon

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Abstract : **The inclusion of all segments of the population in the formal financial system has become a major concern for governments and global financial institutions in the current economic environment. This concern is reflected in an improvement in the quality and access to trained financial services adapted to different social strata. The objective of this study is to determine the factors that explain access to credit and the elements that influence gender (male or female) in the demand for bank credit by businesses in Cameroon. To do this, we adopted the logistic regression technique as an estimation technique and the data retained for this study come from the IDRC survey on the determinants of the performance of companies in Sub-Saharan Africa over the period from 2011 to 2012. , case of Cameroon. The results show that the female gender is not disadvantaged in applying for bank credit. In addition, this study reveals that the type of business and the turnover positively and significantly influence access to bank credit. Such results would have the consequence of favoring the impregnation of women in the traditional financial circuit.**

***Key words*: Access to credit, discrimination, gender, enterprise, women.**

I. INTRODUCTION

In recent years, debates about gender in access to credit have been a major concern for some economists. Research in the area of gender differences has paid little attention to identifying and analyzing the financial needs and preferences of clients in Cameroon. It would seem, therefore, that gender has an influence on access to bank credit. In other words, one part of the population is discriminating in access to financial resources. Banks would therefore have a preference to grant more credit to male entrepreneurs and less to female entrepreneurs. This neglect or discrimination is detrimental to both the gender concept.

Nowadays, there is an abundant literature on the gender concept. As a result, some studies such as the one conducted in Morocco by BOUZEKRAOUI & FERHANE (2014) have come to a conclusion that allows to draw a portrait on the characteristics of women entrepreneurs and those of their companies for the case of Morocco. Their results showed that, Moroccan entrepreneurs are quite young, with higher education level and considerable professional experience; their companies are often related to the service sectors. But these women entrepreneurs face the problem of access to finance as an obstacle, the cost of wear and tear imposed on entrepreneurs as well as the required guarantees are the main difficulties encountered. Finance & Team (2012) have shown that women-led businesses are underrepresented. In general, when they do exist, it is in the informal sector, as illustrated by this example: However small they may be, women's activities can be found today in all sectors of the Cameroonian economy and generally range from small-scale sales of agricultural products to the production of services. However, the weakness of this financing should be noted, which consequently tends to direct women, on the one hand, towards income-generating activities (IGAs) that are very often very small in size, translated on the entrepreneurial level by the status of a business in creation, launch or development; they present a basic tax system, real, simplified or flat-rate tax, with a capital very much below or sometimes slightly above 50,000 CFA francs, and ultimately comprising a workforce that is mostly family-based, for a total objective that is strictly less than five employees (Tchouassi, 2002). On the other hand, women's initiatives are based on economic or socially generating activities; these activities contribute to the self-employment of women. As a result, (Aterido et al., 2013; Sarma & others, 2012) attempt to show that the more financially inclusive an economy is, the faster it is likely to grow. They also show that inequality decreases when financial inclusion increases Karpowicz (2014) and that women's access to formal financial services (savings, access to credit) stimulates productive investment Demirgüç-Kunt et al., (2013), through microcredits granted to the private sector and the mobilization of domestic savings constituted with formal financial institutions.

To this effect, another angle of study made in Paris according to the feminists, have shown in their research that women have more difficult access to financing than men. In their analysis of the experiences of women entrepreneurs, they have highlighted two main concepts, namely liberal feminism for which according to the state and the organization is the cause of these differences and social feminism which accuses structural barriers to access to finance. Alongside the feminists, there are economists who believe that access to finance does not depend on gender; and that if women are less financed than their counterparts, it is because the sector and size of their businesses in which they operate, as well as many other criteria that come into play when financial institutions make decisions, promise a slower return on investment and have a lower rate of return than those of men. (Loscocco & Robinson, 1991).

On the contrary, some studies question the work of these authors above; they believe that women are more credible, honest and sensitive than men, they repay their bank

loans better than men and therefore they are not marginalized in access to finance. To this end, the work of Aterido & al. (2013) shows that women are not in fact disadvantaged in terms of access to finance when key firm and entrepreneur characteristics are controlled. This is consistent with a study conducted in Northwest Cameroon on women's access to microcredit in Cameroon where the results show that the coefficient on the SEX variable is positive and significant at the 10% level. This reveals that contrary to expectations, women are not discriminated against in the distribution of microcredit. On the contrary, it shows that being a woman increases the probability of having access to microcredit. This result suggests that, all other things being equal, a woman is more likely to receive credit from MFIs. Autrement dit, les EMF font beaucoup plus confiance aux femmes. Ce résultat confirme certaines études Kabeer, (1998); Mayoux & others (2001) qui établissent que les taux de remboursement des microcrédits sont plus élevés chez les femmes que chez les hommes.

These studies have the merit of highlighting, on the one hand, the difficulties that women face in accessing credit to finance income-generating activities, and on the other hand, the determinants of access to credit. However, these studies conducted in most cases in developed countries, we are aware that the results cannot be generalized. In the context of developing countries, these studies do not take into account the specificities of women. In the context of this study, our contribution is to identify the determinants of gender in access to credit for developing countries such as Cameroon. Such a study allows us to identify the specificities of financial inclusion in the development of Cameroon.

Women's access to financial services is very important for developed and developing countries like Cameroon. Access to financial services can have effects that go well beyond reducing poverty, income inequality, or intermediation margins, but can have an impact on the macro level, which is economic growth. It is in this light that our study is relevant.

II. RELATED LITERATURE

Gender equality advocates believe that women entrepreneurs must be empowered to move beyond small and micro enterprises to gain access to the financing needed to build medium and large-scale businesses. Thus, funding of this magnitude would bring about profound economic change, empowering women to enter productive value chains, improve their employment prospects, use efficient technologies, and expand their businesses beyond their borders. Experts in the field agree that for this goal to be achieved, banks must open their doors and ensure financial inclusion and increased access for women. This will require formal financial institutions to consider new and innovative approaches to doing business to meet women's needs. A limited but growing number of African banks have developed products targeting women, while others have adopted gender-friendly banking procedures, including waiving minimum balances, increasing the number of elements considered in credit assessment, reducing collateral requirements, and including alternative forms of collateral. (Anyaegbunam & Alaga, 2015; Ibrahim & Ndidi, 2020).

The literature review will allow us to show that according to gender equality advocates, the empowerment of African businesswomen is crucial. This helps to demystify the credit application process and address risk aversion and, ultimately, improve women's access to finance. It is important to recall the various works on this subject, namely the works of (Kacem & Zouaril, 2013; TCHAKOUNTE et al., 2008).

Studies have shown that microcredit promotes women's decision-making Brana (2008) and gives them greater mobility, particularly by enabling them to leave the private sphere. More generally, microcredit can change society's perception of women.

For MAYOUX (2007), microfinance programs, because they allow women to generate income, trigger a virtuous circle of economic empowerment, increased well-being for women and their families, and, more broadly, increased political and social power. In their various studies, Mayoux (2001) and Kabeer (1998) conclude that by providing women with access to working capital and specific training, microfinance helps mobilize productive capacity to reduce poverty and maximize economic returns. The World Bank, (2011) has shown in this regard that the existence of a gender gap in access to finance undermines opportunities for economic growth (WLBS), as women's enterprises are likely to be less productive and more profitable than male-led enterprises (Bardasi & al., 2011). Women invest more for their families when they have access to financial services. Women in agriculture and small businesses need access to financial services, such as savings, credit, and insurance, to grow their businesses. In particular, they need access to credit for working capital, to bridge income gaps, and to finance investments in new equipment or technology. There is also ample evidence that providing women with direct access to financial services can lead to increased investment in nutrition and education, as well as increased human capital, while making households more resilient to shocks and uncertainties.

A more lucid view observed on access to credit; is that of authors such as Beck & al., (2004) Beck and al. (2004) who emphasized that access to credit is important for the growth of firms, especially small firms, and for the creation of new firms Klapper and al., (2006) added to this medium-sized firms. This is challenged by their counterparts who argue that country-specific studies and randomized field experiments confirm that access to capital can be critical for the growth of women's enterprises (Banerjee and al., 2008; De Mel and al., 2008).

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Cependant, certaines études ont nuancé les visions positives. Les résistances passives sociales et culturelles conduisent à relativisé l'impact de la microfinance en matière d'accès au crédit. Comme l'indiquent Guerin & Palier (2006), quel que soit la qualité et la disponibilité de la microfinance , la route vers l'égalité est longue et , même si le microcrédit peut y contribuer, cela ne peut être qu'à la marge.

However, some studies have qualified the positive views. Passive social and cultural resistance leads to the relativization of the impact of microfinance in terms of access to credit. As Guerin & Palier, (2006) point out, regardless of the quality and availability of microfinance, the road to equality is long and, even if microcredit can contribute to it, it can only be at the margin.

Goetz & Gupta (1996), in their studies for Bangladesh, showed that in many cases, women would not really control the use of the funds obtained. Indeed, since women have easier access to microcredit, men would use them to obtain funds. Fernando (2006), rather, believes that microcredit would increase the responsibilities weighing on women, but not their real power, nor the violence weighing on them. Thus, in the analyses and works on women's entrepreneurship, Caubergs (1997) emphasizes that, in developing countries such as those of SSA, the capacities available to women to make their businesses more efficient are, comparatively speaking, very inadequate to those of men. This specifically limits their access to financial services.

Todd (1996) shows that a woman's ability to transform her life through the financial services process is influenced by many factors. Some of these are related to her individual situation and capabilities, others to her environment and the status of women as a group. Analyzing a sample of families in Bangladesh, she finds that the most successful families are those where husbands and wives work in partnership and where both are important economic actors. She also finds that of the 40 female borrowers she interviewed, 10 did not have control over their credit and turned it over either to their husbands or to another male in the household, reflecting an even more exploitative situation.

Many researchers in the economics literature examining the effect of gender of business leaders on firm performance do not explicitly control for barriers to firm growth (Adams & Ferreira, 2009; Adams & Funk, 2012; Amore & al., 2014; Aterido & al., 2013; Huang & Kisgen, 2013; Matsa & Miller, 2013). Added to this, the correlation between women's business ownership and firm performance with a focus on developing countries is quite rare, with the exception of (Bardasi & al., 2011).

According to SAMBE & AGBOBLI (1997), many institutions offering microcredit, concerned about their financial viability, avoid taking the risks involved in financing the poorest. Even if poor women are increasingly known for "compensating for the weaknesses of their economic conditions through their seriousness", it should nevertheless be noted that the nature and size of their economic activity, as well as the volume of credit they receive, does not allow them to generate sufficient profits to cross the poverty line in the long term (Vincent, 2000). Experience shows that even if their income increases significantly during their first year of activity, they quickly level off and run out of steam.

Instead, Verheul & Thurik (2001) show that the impact of gender on borrowing capacity can be linked to two channels. The first is an indirect result: women borrow less because they have less equity, less experience, and move into activities that require less investment (financial and personal). The second channel is direct: the differences in financing cannot be attributed to the above factors, so there is a "gender effect".

For Blanchflower (2004), in a study of access to entrepreneurial finance between the gender difference, highlights that the probability of being self-employed is higher for men than for women. This criticism is supported by the results of the Mutual Aid Group (MAG). Gartner & al. (2004) show without doubt that men are twice as involved in business start-up processes as women. This clarifies that men have a larger share of access to financial services than women. However, other work will once again challenge this idea of gender discrimination. Indeed, Baydas & al. (1994) showed that in Ecuador, women are much more affected by the problem of rationing of microcredit than men. Buvinic & Berger (1990) showed that in Peru and Bangladesh, respectively, women microentrepreneurs use microcredit less than their male counterparts. This reflects the fact that women are less entrepreneurial than men. Indeed, as Bonnetier (2005), points out, it seems that women want to start a business as much as men, but only a fraction of these women are ready to take the plunge.

The gender differences (men/women) thus relate to both the structure (size of the enterprise, sector of activity)

and its results. Microenterprises run by women show poorer results (revenues, sustainability). The impact of gender on economic performance has also been the subject of considerable controversy. Today, however, a consensus seems to be emerging that, controlling for a number of variables (industry, start-up capital), the performance of men and women is identical (Johnsen & McMahon, 2005; Watson, 2002). Asiedu and al., (2013) show that there is no gender gap in most developing regions except for sub-Saharan Africa where women-owned firms are more likely to be financially constrained than men-owned firms.

Whether one studies microcredit in developing countries or microenterprise in rich countries, the findings are very similar: women are confined to so-called feminine activities (personal services, trade), in activities that are not very capital-intensive and that generate little profit. One explanation given for this observation is that women, unlike men, lack equity capital. This is one of the reasons why they opt for a legal structure and a type of activity that requires little capital investment, but does not allow them to generate significant income.

According to the Welfarist school, development occurs if all members of a society are taken into account in the distribution of its resources and financial services. Thus, the concept of social exclusion was born in political circles to describe the process by which certain groups are marginalized in industrial societies, particularly with regard to gender differences in access to financial resources. Several sociologists, such as Townsend, (1962), have shown that the process of marginalization does not only concern social security, but can involve other areas such as income, living environment, access to services, health, education and other resources essential to well-being.

Inach and al., (1995) show how ethnic solidarity in Cameroon is a factor of inclusion but at the same time a factor of exclusion of their members in certain activities, particularly in access to financial resources. These authors define ethnicity in three stages: first, they define an ethnic group as a group of people who speak the same language and live in or come from the same geographical area and who generally believe that they are descendants of the same ancestors. Secondly, the authors show how colonization instituted the first forms of social exclusion, firstly through the spatial specialization of different ethnic groups with specific export cultures, and secondly through the inequitable provision of social infrastructures, especially schools, to different ethnic groups. This is how certain ethnic groups found themselves in the majority in the civil service because they were lucky enough to be educated, especially men, to the detriment of women, and others found themselves in the majority in commerce. Thirdly, these authors, Inach and al., (1995), show that it was in this context that the economic crisis of the 1980s occurred. It has differentiated effects according to ethnicity on the living conditions of the populations, such as health, income, education, living environment and access to financial resources through discrimination.

Research that is in line with this logic shows that the female gender is disadvantaged in several areas. This negatively influences their well-being. But this discrimination takes different forms depending on the context and it is important to illustrate it with some practical cases. In Thailand, gender discrimination is linked to cultural factors that have argued that the man was much more superior to the woman through religious rites. This belief has become entrenched and the role assigned to a woman is that of wife and mother. This excludes her from gainful employment and she has no rights Phongpaichit & al. (1995) as well as the impossibility of accessing financial resources.

These institutional mechanisms refer to markets. They can be the credit market, as is the case in Peru, where commercial banks refuse to grant credit to small-scale producers. This forces them to resort to informal sources of financing. These have very high interest rates and are precarious (Sahay & al., 2015). It can also be a question of the labor market, as in Tunisia, where unemployment has worsened with structural adjustments that have forced cutbacks and globalization that has exposed economic structures to international competition (Mongi & al., 1995). In the labor market, too, decent employment may require a high level of education and ethnic solidarity networks, thus excluding certain groups from the civil service or from more lucrative jobs in the economy. This has been highlighted in Yemen (Mouna, 1995). Whatever the mechanism, exclusion from the labor market results in the failure to meet nutritional, health and educational needs. This further reinforces this form of exclusion.

Some feminist authors, considering that traditional approaches are fundamentally biased in favor of a male norm, have chosen to conceptualize the way gender issues are understood. One of the best known attempts, and one that has served as a basis for other authors since, is Lewis' (1992 to 1997). Lewis compares different models of the male breadwinner, defined as a family model in which the man is the sole provider of income and the woman is excluded from the labor market and income-generating activities, subordinated to her husband in her access to social rights and engaged in unpaid domestic tasks, including child and dependent care. Jane Lewis suggests that, while this is obviously an abstract model that does not exist in pure form, different countries reflect elements of this ideology to varying degrees. The criteria defining the access of women, or at least the disabled, to the financial systems, particularly to bank loans, as well as the way women are treated by the taxation system, the quantity of services offered (particularly in terms of childcare), and the position of married women in the credit market (degree of commitment and form of this commitment) are three variables that make it possible to highlight the persistence of this ideology in the different traditionalist conceptions. Based on these criteria, she distinguishes three

models of the male breadwinner: a strong model, found in Great Britain and Ireland; a moderate model, of which France is representative; and a weak model, which she also calls the two-income model, illustrated by the case of Sweden. Morel (2007) the sociologist of work, This approach thus aims to highlight the ideological and normative prescriptions that underlie the sexual division of labor, and endeavors to bring out how women are perceived in different types of societies: as mothers, as wives, or as salaried workers, or as mothers and workers in the case of France. A second contribution of this analysis lies in the attention given to the valorisation and sharing of care work in the domestic sphere. Lewis shows that this work is recognized differently in different countries. In Sweden, for example, there is parental leave paid at 80% of the previous salary for people who interrupt their career temporarily, which indicates that care work is recognized as work that deserves to be paid. In other countries, parental leave is either poorly paid, such as the parental education allowance in France, or unpaid, which shows that reproductive care work is not recognized as work. The variables Lewis uses are very useful for tracing historically how policies assign specific roles to men and women, but comparing different countries on the same measure of male breadwinner ideology to establish a typology has some limitations. The authors agree that marital status does have an effect on entrepreneurial decision-making. In their study, Bowen & Hisrich (1986) found that 48% of female entrepreneurs were married, 29% were divorced and 19% were single. The stabilizing role of marriage is not verified for the woman. For the husband, it can be either a hindrance or a stimulus to entrepreneurship.

Kirkwood, (2009) reports that women consult their spouses before making any entrepreneurial bank loan decisions. This point would be a female specificity, which, according to the latter author, approaches her professional work from a relational perspective. In other words, unlike her male counterpart, the woman entrepreneur would exchange with the stakeholders, in particular with her spouse, before making a decision on her professional activity. Other recent research has focused on the role that the spouse can play in the demand for credit in female entrepreneurship. Thus Gundry & Welsch (1994) like Werbel & Danes (2010) recall that the spouse is an undeniable stakeholder since he has a real right of decision on the commitment of the initial capital, often from the family's funds. Davidsson & Honig (2003), in a qualitative analysis on the identification of social support figures for the emerging entrepreneur, highlight the role of the spouse as a facilitator or, on the contrary, hinder the decision of access to credit for women to create a business without however being able to specify how this spouse can or may not help the entrepreneurial approach (Nikina & al., 2012).

With regard to the relationship between the level of education and the creation of a company, two authors such as Guyot & Lohest (2008) note that the diploma obtained appears as a discriminating factor in the possibility of the entrepreneur, whether or not to create his first company. Following their comparative study between first-time creators and creative candidates, these same authors show that first-time creators are much more diplomas: higher education diplomas represent about 61% of first-time creators while they represent only 15% of creative candidates. Guyot and Lohest (2008), in their comparative study between first-time creators and creative candidates, show that 6392 creators participated in the foundation of companies ex-nihilo, an average of 1.96 creators per company. Of these, 4322 have been identified as first-time creators, or just over seven out of ten creators, while three out of ten creators are extensions. The hypothesis relating to projects of a creative nature may influence the decision of the granting of loans by the Tunisian Solidarity Bank. From these studies and is shown that the first-time creators who are the most qualified are mostly men. Some banks with an interest in education levels are disengaging from providing credit to less educated or poor women.

Baden & Milward (1995) have shown that women spend more of their income on their households. According to the Women's Entrepreneurship Development Trust Fund (WEDTF), women's additional income is benefited by their children, particularly in terms of education, diet, medical care and clothing. Thus, 55 per cent of women's additional income is used to buy goods needed for the home, 18 per cent for schooling and 15 per cent is spent on clothing according to the WEDTF.

According Wokia-azi & al. (2008), il existe encore au Cameroun et malgré les efforts du gouvernement pour assurer l'éducation pour toute, une discrimination du genre dans le primaire circoncise dans les régions de l'EST, de l'Extrême-nord, du Nord et du Centre. Les discriminations dans le secondaire et dans le tertiaire existent aussi et s'expliquent par les grossesses et les mariages précoces. Ces discriminations sur le plan éducatif se répercutent sur le marché de l'emploi, le marché de crédit où on constate que les femmes sont concentrées dans les secteurs informels agricoles et non agricoles. En revanche, elles sont sous représentées dans les secteurs formels. L'une des conséquences est l'important gap de salaires et leurs ombrageux dans l'accès aux services bancaires entre les genres. En plus de l'éducation, la discrimination sur le marché d'emploi s'explique par les difficultés qu'éprouvent les femmes à concilier les travaux domestiques avec certains emplois.

III. DATA, MODEL AND EMPIRICAL STRATEGY

3.1 Data

Table 1 : Summary table of variables

Variables	Définitions	Description	Base de données
ACCES _CR	Access to credit	1= get a credit (person who applied for a credit and whose application was accepted), 0 = refused (person who applied for a credit and whose application was refused)	
AGE	The average age of the head of household men or women	Number of years of age	CRDI
GENRE	Gender of the head contractor	1 = male, 0 = female	CRDI
STAMATR	Statu Matrimonial	1 = married, 0 = unmarried	CRDI
TYE	Type of company	1 = small business, 2 = medium firm, 3 = large firm	CRDI
FPR	Equity	1=has, 0 = does not own	CRDI
AIDE	Help from an association, NGO, friends, family, relationship, other	1=yes, 0=no	CRDI
ENFOR	Is the Company formal?	1= formal, 0 = informal	CRDI
LnVALGARAN	Logarithm of Warranty Value	1= has a substantial value guarantee, 0 = no	CRDI
LnCAF	Log turnover	Expressed in millions of CFA francs	CRDI

Source: constructed by the author

The data used in this work are those of the study on the analysis of the determinants of the performance of companies in French-speaking sub-Saharan Africa: Case of Cameroon, Ivory Coast and Senegal. But in the context of our study, we will limit ourselves to the case of Cameroon. This study is carried out over the period from 2011 to 2012 with the support of the International Research and Development Center (CRDI). The study covers only one year for two reasons: first, it is a microeconomic study conducted only on the Cameroonian territory; second, the data were collected only for a period of one year because of its specificity and the objective set. Cameroonian data relate to a sample of 640 observations made. The questionnaire was designed based on that of the World Bank's Regional Program on Enterprise Development Cameroon-2009 (RPED), while taking into account the latter's shortcomings. Thus, differently from RPED data, enterprises in the agricultural sector, financial intermediaries and enterprises in the public sector were included in the sample. The data also provide information on new points relating to social norms, innovative managerial capacities, ICT and technological innovation, gender in relation to the main performance indicators.

The goal is to establish a link between a dependent variable Y (Access) and an independent variable X (macroeconomic, cultural, institutional and legal variables) in order to then be able to make predictions on Y when X is measured.

3.1. Econometric specification and estimation procedure

As we said, logistic regression is very recently used in various fields. In particular in medicine (epidemiology), as well as in management economics. It is applicable when the dependent variable is qualitative and dichotomous (1 if access, 0 if not). It is then possible to reduce the predictions of the model to the interval [0 1], which is not the case when we precede by a linear regression.

3.2. Overview of the logistic regression model

The presentation of the Logit model is usually done from a latent variable whose values are not observed. For the individual i (i=1..N), note by y_i^* this latent variable whose value depends on a series of explanatory variables x_{ij} (j=1…, J). One can then write the equation of the following form:

$$y_i^* = \alpha + \sum_{j=1}^{j} \beta_j \, x_{ij} + \varepsilon_i \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \textbf{(1)}$$

Where ε_i is a random term whose distribution is given by the density function f. β_j is the vector of the parameters to be estimated. Let us now define the dichotomous variable y_i which is observed and which takes only the values 1 if women's access, and 0 if not. The relationship between y_i and y_i^* is given by the equations

suivante:

$$y_i = 1 \; si \; y^* > 0 \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \textbf{(2)}$$

$$y_i = 1 \; si \; y^* \leq 0 \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \textbf{(3)}$$

We therefore observe only the sign of $y_i^*$and not its value. If we replace y_i^* in 3.2 by its expression given in (3), the probability that y_i either equal to 1, or Pr (y_i=1), is written as follows :

$$\Pr(y_i=1) = \Pr\left[\varepsilon_i > -\left(\alpha + \sum_{j=1}^{j} \beta_j x_{ij}\right)\right] \ldots\ldots \textbf{(4)}$$

If we denote by F the distribution function corresponding to the density function f and assume that F is a symmetric function, we have :

$$\Pr(y_i=1) = 1 - F\left[-\left(\alpha + \sum_{j=1}^{j} \beta_i \, x_{ij}\right)\right] \ldots\ldots\ldots \textbf{(5)}$$

If the error term ε_i follows a logistic distribution, so we get the Logit model. On the other hand, if ε_i follows a normal distribution, we have the Probit model. If the

distribution function chosen for the distribution of ε_i is the logistic function, we obtain:

$$\Pr(y_i = 1) = F\left[\alpha + \sum_{j=1}^{j} \beta_j\, x_{ij}\right] = \frac{e^{\alpha + \sum_{j=1}^{j} \beta_j x_{ij}}}{1 + e^{\alpha + \sum_{j=1}^{j} \beta_j x_{ij}}} \quad ..\textbf{(6)}$$

Reading the equation (5), it can be seen that the impact of a unit increase in x_{ij} on Pr (y_i =1) is not given by β_j but depends on the values taken by all explanatory variables. This problem can be remedied, if only in part, if equation (5) is modified somewhat. Indeed, if we take as a dependent variable not Pr (y_i=1) but the logarithm of the following ratio:

$$\frac{\Pr(y_{i=1})}{1-\Pr(y_i=1)} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \textbf{(7)}$$

Alors on aura :

$$\mathrm{Log}\left(\frac{\Pr(y_i=1)}{1-\Pr(y_i=1)}\right) = \alpha + \sum_{j=1}^{j} \beta_j\, x_{ij} \ldots\ldots\ldots\ldots \textbf{(8)}$$

The logarithm of this ratio is therefore a linear function of the explanatory variables: the impact of a unit increase in x_{ij} on the logarithm of the ratio is given by the coefficient β_j. It can be shown that if β_j >0, (β_j <0), then, the impact of β_j on Pr (y_i=1) will also be positive (negative) (Greene, 2000).

3.3. Credit access model:

The goal here is to address the first objective by determining the factors that explain access to credit. This leads us to the verification of discrimination. In order to estimate this, we need to write the law of the observable variable conditional on the explanatory variables. This observable variable is defined by :

$$y_i = \begin{cases} 1 & Access \\ 0 & If\ not \end{cases}$$

y_i is the dependent variable **(ACCES_CR)** that is, is the proportion i of women's credit application compared to men. We specify the model as follows:

$$ACCES_CR = \alpha_0 + \alpha_1 GENRE_i + \alpha_2 TYE_i + \alpha_3 AGE_i + \alpha_4 STAMTR_i + \alpha_5 LnVALGARAN_i + \alpha_6 LnCAF_i + \alpha_7 ENFOR_i + \alpha_8 FPR_i + \alpha_9 AIDE_i + \varepsilon_i \quad \textbf{(9)}$$

3.3.1. Statistical hypothesis:

In order to determine whether or not women entrepreneurs are discriminated against in access to bank credit than men, we will pose the hypotheses to be tested as follows:

$$\begin{cases} H_0 : \alpha_1 = 0 \ Women\ are\ discriminated\ against\ on\ credit \\ H_1 : \alpha_1 \neq 0 \quad There\ is\ gender\ parity\ (no\ discrimination) \end{cases}$$

4.3.2. Model type justification:

$$Accès_i = \begin{cases} 1 \ Yes\ if\ y^* > 0 \\ 0 \ \ No\ if\ y^* \leq 0 \end{cases}$$

We use the logistic model because the dependent variable is qualitative and has two modalities. The choice of the model is not a random choice. We based our choice on the work of Kacem and Ghorbel (2013) in Tunisia in order to write the above econometric model for the case of Cameroon. It was chosen to measure gender discrimination access to bank credit.

After studying whether or not women are discriminated against in access to financial services compared to men using the above model, it is appropriate to push another analysis by studying econometrically the factors that may contribute to the marginalization of women or men in access to financial services.

3.4. Model of discriminatory factors

This is the model that takes into account the factors that influence access to credit. This model seeks to measure the factors that contribute to the marginalization of women entrepreneurs in access to credit. The model to be estimated is as follows:

$$GENRE_i = \beta_0 + \beta_1 AGE_i + \beta_2 STAMATR_i + \beta_3 TYE_i + \beta_4 FPR_i + \beta_5 AIDE_i + \beta_6 ENFOR_i + \beta_7 LnVALGARAN_i + \beta_8 LnCAF_i + \varepsilon_i \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots \textbf{(10)}$$

3.4.1. Justification of model type:

We chose this type of model based on the work of : TCHAKOUNTE and al., (2008) in Cameroon. In this work, GPI (gender parity index) was used as a dependent variable to determine the factors that may contribute to the marginalization of women or men in access to financial services. Thus, we will stay with this same study.

3.5.Estimation method, and statistical tests:

3.5.1. Estimation method:

The estimation method assigned to our work is that **of maximum likelihood** because the dependent variables of the two models are dichotomous qualitative variables. For this we write the plausibility of the sample. When individual observations y_i with i=1,…,n are assumed independent, this likelihood is written as the product of probabilities:

$$L(b_0, b_1) = \prod_{i=1}^{n} \left[p(y=1/x, b_0, b_1)\right]^{y_i} \left[1 - p(y=1/x, b_0, b_1)\right]^{1-y_i} \quad \textbf{(11)}$$

3.5.2. Hypothesis tests on parameters

Here we will present the main test procedures from the maximum likelihood estimation method that is most often used. We then find the trilogy:

a- Hosmer and Lemeshow test:

Hosmer and Lemeshow's test is based on a grouping of the probabilities predicted by the model, for example by decile. The observed number of positive responses is then calculated for each of the groups. y = 1 and negative y = 0, which is compared to the expected number predicted by the model

avec y = ACCES_CE). We then calculate a distance between the observed and predicted frequencies using a Chi2 statistic. When this distance is small, the model is considered to be well calibrated.

. Grouping the predicted probabilities y (ACCES_CR) by the model into ten groups (deciles).

. For each group, the difference between the predicted and observed values is observed. The importance of the distance between these values is evaluated using an 8-ddl hi-square statistic that tests:

$$\begin{cases} H_0 : \ Disci\min ation \\ H_1 : \ No \ \ Disci\min ation \end{cases}$$

The decision rule:

- We accept the hypothesis H_0 if the probability value is greater than 5%
- We reject the hypothesis if it does not.H_0

b- Overall significance test of the model or likelihood ratio test:

First of all, we will check whether the model is good or bad. So we have the following assumptions:

$$\begin{cases} H_0 : \ \text{Wrong model} \\ H_1 : \ \text{Good model} \end{cases}$$

We accept the hypothesis H_0 if the value of LR is greater than 5%

- We reject the hypothesis if it does not.H_0

c- TESTING VARIABLE CORRELATIONS

The diagonal in the correlation table (represented by the value 1) means that the variables are exactly correlated, however when the values of the variables are below the diagonal of the table we admit that the variables are not related; but when the values whose above the diagonal of the table, one admits the opposite hypothesis.

$$\begin{cases} H_0 : \ \text{All variables are correlated} \\ H_1 : \ \text{All variables are not correlated} \end{cases}$$

IV. EMPIRICAL RESULTS

Table 2 : Test of Hosmer and Lemeshow

Groupes	Prob	Obs_1	Exp_1	Obs_0	Exp_0	Total
1	0,2080	11	9,9	43	44,1	54
2	0,2384	13	12,1	41	41,9	54
3	0,2565	16	13,4	38	40,6	54
4	0,2713	7	14,6	48	40,4	55
5	0,2939	12	14,9	41	38,1	53
6	0,3267	18	16,8	36	37,2	54
7	0,3853	21	19,2	33	34,8	54
8	0,4747	27	23,2	27	30,8	54
9	0,6231	29	29,0	25	25,0	54
10	0,7847	36	37,0	18	17,0	54
Number of observations = 540 Number of groups = 10 Hosmer-Lemeshow chi2 (8) = 8,66 Prob > chi2 = 0,3716						

Source: Construction of the author from STATA 14

At the 5% threshold, the fit of the model is good because the probability (or significance) of chi-square at 8 degrees of freedom (ddl) is 0.3716, or 37.16%, from which we accept the hypothesis. This is all the more so since the distance between the frequencies observed and predicted using the koh-2 statistic is small (8.66).H_1 As a result, themodel iswell calibrated.

Table 3: Descriptive Statistics

Variables	Minimum	Maximum	Moyenne	Ecart-type
ACCES_CR	0	1	0.3796875	0.4856887
GENRE	0	1	0.6984375	0.4592953
PE	0	1	0.1328125	0.3396374
ME	0	1	0.084375	0.2781668
GE	0	1	0.175	0.3802643
FPR	0	1	0.9453125	0.2275471
AGE	3	95	38.87593	11.59927
AIDE	0	1	0.2140625	0.4104912
STAMATR	0	1	0.5875	0.4926693
VALGARAN	0	17.39903	11.41054	2.192894
CAF	1.791759	19.59222	9.892874	3.042903

Source : Construction de l'auteur à partir de STATA 14

Table 4: Correlation Matrix

	ACCES_CR	ENFOR	TYE	GENRE	AGE	FPR	AIDE	STAMATR	VALGARAN	CAF
ACCES_CR	1									
ENFOR	0.2609	1								
TYE	0.2814	0.8823	1							
GENRE	0.0818	0.0561	0.0113	1						
AGE	0.1026	0.2484	-0.0294	0,1518	1					
FPR	-0.0387	-0.0747	0.4797	-0,0935	0,0113	1				
AIDE	-0.0269	-0.2482	-0.2714	0,0411	-0.0294	-0,0136	1			
STAMATR	0.0846	0.1688	0.1562	0,0953	0,4797	-0,0208	0.0004	1		
VALGARAN	0.0106	-0.0456	-0.0607	0,0680	0,0169	-0,0387	-0.0102	0.0345	1	
CAF	0.2821	0.7592	0.7873	0.0778	0,2443	-0,0695	-0,1826	0.1526	-0,0439	1

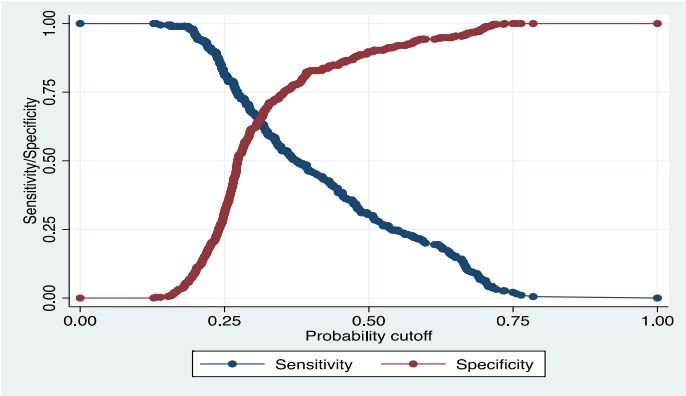
Source: Author construction from STATA 14

Model Sensitivity

It is interesting to determine the performance of the ranking and how it depends on the threshold (or rule) chosen. For this we will consider the notions of sensitivity and specificity. Sensitivity is defined as the probability of classifying the individual in the category y = 1 (the test is said to be positive) since it is actually observed init: Sensitivity = P (test + / y = 1). Specificity is defined as the probability of classifying the individual in the category y= 0 (the test is said to be negative) since it is actually observed in it: Specificity = P (test - / y= 0).

When the cutoff threshold is varied, the sensitivity and specificity change, since the classification rule is modified. In order to represent the values for all the possibilities of thresholds we draw on a graph curves of sensitivities and specificities:

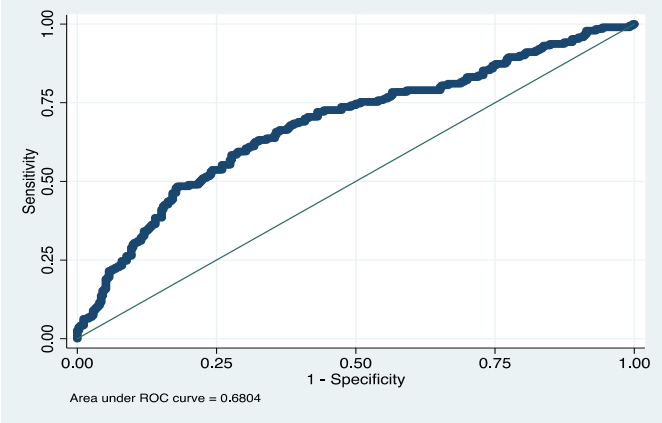
Graph 1: Sensitivity curve and specificity



Source: Construction of the author from STATA 14

It can be seen that by setting the threshold at 0.3 we obtain a classification with a sensitivity and specificity of about 70%. As an indicator of the model's ability to discriminate, the ROC curve will be used.

Graph 2 : ROC curve



Source: Construction of the author from STATA 14

The surface under this curve allows us to evaluate the accuracy of the model to discriminate positive outcomes $y = 1$ negative outcomes $y = 0$. We will remember as a rule of thumb:

If ROC area = 0.5 there is no discrimination

If area 7.0 ≤ ROC < 8.0 discrimination is acceptable

If area 8.0 ≤ ROC < 9.0 discrimination is excellent

If ROC area ≥ 9.0 discrimination is exceptional

A poorly adjusted model, i.e. poorly calibrated, may well provide good discrimination. To be convinced of this, we only have to think of the situation where we add 0.15 to all the estimated probabilities. The model will then be poorly calibrated, but by moving the threshold of 0.15 we will obtain the same discrimination. A good model must be well calibrated and allow good discrimination.

Table 5: Ordinary Least Squares

Variables		Odds Ratio	Standard Error	T-Stat (z)	P>|z|
ACCES_CR					
AGE		1.003008ns	0.0095638	0.31	0.753
GENRE		1.324382ns	0.2907517	1.28	0.201
STAMATR		1.115571ns	0.2492998	0.49	0.625
PE		**1.761747****	0.5613532	1.78	0.076
ME		1.394639ns	0.8347793	0.56	0.578
GE		2.247425	1.284202	1.42	0.156
FPR		0.9009829ns	0.3520331	-0.27	0.79
AIDE		1.277461ns	0.3041456	1.03	0.304
ENFOR		1.113226ns	0.5342746	0.22	0.823
VALGARAN		1.025489ns	0.0467412	0.55	0.581
CAF		**1.118178****	0.0603576	2.07	0.039
Constante		0.0746392	0.0630075	-3.07	0.002
Number of obs. = 540					
LR chi2 (11) = 52,70					
Prob > chi2 = 0.0000					
Pseudo R2 = 0.0752					

Source: *Construction of the author from* ***STATA 14***.
NB: the signs ***, **, * reflect respectively the significance at the threshold of 1%, 5% and 10% and ns not significant.

So, by drawing on the calculation of the Relative Risk, Odds, Odds-ratio we will check if there is significant discrimination according to gender in access to credit. This returns us to a case of simple regression with binary explanatory variable. The idea is relatively simple:

$$X = 1 \rightarrow LOGIT(1) = \alpha_0 + \alpha_1 * 1 = \alpha_0 + \alpha_1$$

$$X = 0 \rightarrow LOGIT(0) = \alpha_0 + \alpha_1 * 0 = \alpha_0$$

$$\Rightarrow \ln(OR) = LOGIT(1) - LOGIT(0) = \alpha_1$$

$$\Rightarrow OR = e^{\alpha_1}$$

Si $\hat{\alpha}_1 < 0 \rightarrow OR < 1$, there is discrimination and if $\hat{\alpha}_1 > 0 \rightarrow OR > 1$, there is no discrimination. According to the results of the logistic regression,

$$\hat{\alpha}_1 = \hat{\alpha}_{GENRE} = 1.324382 > 1$$

The GENDER variable is positive but not significant. Being male or female does not influence the probability of accessing financial services from local financial institutions. This result is contrary to what is normally asserted in the literature across authors and what was expected, namely that gender has a significant effect on access to credit services from microfinance institutions (Morduch, 1999). It can be concluded that there is no discrimination between men and women by Cameroonian banks in access to financial services. This finding confirms those of Sana Kacem and Sonia Ghorbel ZouariI, from the University of Sfax in Tunisia, who showed that gender does not have an effect on access to financial services by microcredit associations. For the associations, gender has not been explicitly retained as a strategy when distributing credit, and there is no specific targeting of women. The gender management companies do not encounter any particular problems in applying for and obtaining credit in Cameroon. Women manage just as well as men. Moreover, in the face of youth migration, their role is becoming more crucial. However, the lack of training and information, and the persistence of illiteracy, are obstacles to women's access to credit. However, it is interesting to note that the results obtained do not confirm the second hypothesis, according to which businesses run by women do not have the same access to bank credit as those run by men, or else they are financially excluded.

The identification of factors that contribute significantly to discrimination against women in the

availability of credits is obtained from the results from the estimation of equation (9) and summarized in the table estimates (see Table 4). Of the estimated explanatory variables, only the TYE (PE) and LnCAF (log turnover) variables are statistically positive and significant. We note that variable TYE has a positive and significant effect on increasing the disparity in access to credit between men and women from the PE (Small Enterprise) modality. So for an increase of 1% or a small business unit headed by women, this would translate into an increase of 176.17% in the value of the gender parity index. Similarly, the value of the parity index increased by 224.74% for an increase of one large enterprise unit. This increase corresponds to a decrease in the degree of discrimination in access to credit suffered by women entrepreneurs. Interpreting by the Odds Ratio, we will say that women managers of Small and Large Enterprises have 1.761747, 1.394639 and 2.247425 chances of being granted credit by men who do not run this type of business (according to Table 5). Thus, access to credit is an increasing function of the type of business.

Table 6 : ACCES_CR = f (TYE)

ACCES_CR		(Odds Ratio)	Standard Error	T-Stat (z)	P>|z|
	PE	1,761,747	0,5613532	1,78	0,076
TYE	ME	1,394,639	0,8347793	0,56	0,578
	GE	2,247,425	1,284,202	1,42	0,156
Constant		0,0746392	0,630075	-3,07	0,002
Odds ratio and 95% confidence interval					
			Minimum	Maximum	
TYE		PE	0,6434559	3,289,771	
		ME	0,4314836	4,507,747	
		GE	0,733331	6,887,641	

Source: Construction of the author from STATA 14

The same is true for the LnCAF variable, which is also an important variable of interest. It is significant and positive at a threshold of 5%. An increase in the turnover of women's enterprises leads in the same direction to an increase in the value of access to credit. This suggests, on the one hand, that an increase in the turnover of women's enterprises leads to an increase in the value of access to credit by gender of the order of 111.8178%. This increase in the value of gender contributes to moving its value towards 1, which represents a situation of parity. From this we can deduce an increase in the degree of non-discrimination by women. The turnover therefore has a positive effect on gender in the accessibility of bank credits in Cameroon.

Let's try to predict ACCES_CR based on LnCAF. We performed the logistic regression, and we get the estimated coefficients. We get $\hat{\alpha}_{12}$= 1,20611 and therefore $e^{\alpha_{12}}$=3,34046. When the log of turnover increases by one unit, the access to credit is $\frac{1}{3,34046}$=0,299

Let us detail the calculations since we have the estimate of the coefficient and its standard deviation. For a 95% interval, the fractile of the normal distribution used is $\mu_{0,975} = 1,96$. We produce the terminals as follows:

1) Low terminal $bb\left(\hat{\alpha}_{12}\right) = \hat{\alpha}_{12} - \mu_{0,975} \times \hat{\sigma}_{\alpha_{12}}$

=1,20611−1, 96×0,342132

=0,535531

The low bound of the interval of variation of the odds ratio is obtained with bb(OR)= $e^{0,535531}$ =1,7083

2) High terminal $bb\left(\hat{\alpha}_{12}\right) = \hat{\alpha}_{12} + \mu_{0,975} \times \hat{\sigma}_{\alpha_{12}}$

=1,20611+1, 96×0,342132

=1,8766887

And the low bound of the interval of variation of the odds ratio is obtained with bb(OR)= $e^{0,535531}$ =6,5318. When the interval of variation of the odds-ratio covers the of 1 or equivalently when the interval of the coefficient covers the value 0, it has no significant relationship between the explanatory variable and the dependent variable. Then we can say from the table that women who have a turnover have 1.20611 chance of being granted credit than men who do not have one (see Table 6 below).

Table 7: ACCES_CR = f (LnCAF)

ACCES_CR	**(Odds Ratio)**	Standard Error	T-Stat (z)	P>|z|
LnCAF	1,20611	0,342132	6,61	0,000
Constant	0,093576	0,0278768	-7,95	0,000
Odds ratio and 95% confidence interval				
	Minimum		Maximum	
LnCAF	1,005922		1,242961	

Source: Construction of the author from STATA 14

The results of the logistic regression show that the relationship between the variables access to credit and the formal enterprise is positive but not significant at the threshold of less than 1% because its proportion is equal to 0,22%. This result confirms that $\hat{\alpha}_{ENFOR}$= 1,113226 with a standard error of 0.5342746. The odds ratio (OR) for this variable is 1.113226 (Table 8). This value is greater than 1 (OR=1,113226> 1). The more formal a woman-run business is, the more likely it is to have access to credit compared to an informal male-run business. When a business is formal, in the eyes of the bank, it becomes a trustworthy structure that is within the law. This is at least what the banks are looking for in order to better expand their business universe.

Tableau 8 : ACCES_CR = f (ENFOR)

ACCES_CR	**(Odds Ratio)**	Standard Error	T-Stat (z)	P>|z|
ENFOR	1,113226	0,5342746	0,22	0,823
Constant	0,0746392	0,0630075	-3,07	0,002
Odds ratio and 95% confidence interval				
		Minimum	Maximum	
ENFOR		**0,4345735**	**2,851698**	

Source: Construction of the author from STATA 14

The model estimation reveals a positive relationship between the log variables of the value of the guarantee LnVALGARAN and ACCES_CR (+1.025489). This shows that micro-entrepreneurs backed by a high value guarantee are more likely to have access to credit. The value of the collateral appears from the results to be one of the selection mechanisms within financial institutions. Churchill (1999) has pointed out that, in the context of microfinance institutions, the value of the collateral acts as a vector of social pressure on the debtor, rather than as an alternative source of repayment. This finding is consistent with Datta (2004), who explained that the guarantor can be an element of access to financial services. This shows that banking institutions have not been able to find solutions to the problems of information asymmetry. Hence, the introduction of collateral (in the form of a guarantor or the value of the collateral) is a means available to banks to reduce credit risk. These instruments have a different use than in traditional banking institutions, which require material guarantees of its value, whereas the associations require that the micro-entrepreneur and his guarantor commit themselves through bank drafts to repay the credit. The result found calls into question an important dimension of microfinance. Indeed, this niche has emerged and developed for people who do not have significant collateral to access financing (Arch, 2005). Women who hold very high value collateral have a 1.025489 chance of obtaining credit compared to men who hold low value collateral (see Table 9).

Table 9: ACCES_CR = f (LnVALGARAN)

ACCES_CR	**(Odds Ratio)**	Standard Error	T-Stat (z)	P>|z|
LnVALGARAN	1,025489	0,0467412	0,55	0,581
Constant	0,0746392	0,630075	-3,07	0,002
Odds ratio and 95% confidence interval				
		Minimum	Maximum	
LnVALGARAN		**0,9378504**	**1,121316**	

Source : construction de l'auteur à partir de STATA 14

The econometric analysis shows that the variable AGE is positive and insignificant at a probability of 0.31% which is very low at a significance level of 1%. The fact of being old or not does not have a major impact in the access to bank credit of companies managed by women or by their male counterparts. The analysis of the Tunisian bank's documentation indicates that age is an explicit criterion in the selection of entrepreneurs and is situated between 18 and 59 years of age. The case of Cameroon is quite the opposite, as the results of the analysis show that AGE has no effect on the demand for credit to start and run a business. Still, the logit regression shows that the odds ratio for this variable is OR=1.003008 (Table). This value is ≃1 led to the consequence that age has no influence in accessing credit. Explicitly, access to credit for women-led firms does not depend on age. We will say that access to credit is a constant function of age (See Table 10).

Table 10: ACCES_CR = f (AGE)

ACCES_CR	Odds Ratio	Standard Error	T-Stat (z)	P>|z|
AGE	1,003008	0,0095638	0,31	0,753
Constant	0,0746392	0,0630075	-3,07	0,002
Odds ratio and 95% confidence interval				
		Minimum	Maximum	
AGE		0,8612764	2,036498	

Source: Construction of the author from STATA 14.

The results show us that the estimator of the variable FPR is: $\hat{\alpha}_{FPR}$ = 0,9009829 and $e^{\alpha_{FPR}} = e^{0,9009829}$ = 2,4620218 we find that with logistic regression, the odds-ratio is significantly different 1via the WALD test for coefficients or by the intervals of variation of the odds-ratio. It is equal to 0.9 ≃1 (Table 11) this means, therefore, that equity has no influence in credit access there is equal probability of parity. This means that access to credit for women-led firms does not depend on equity. The chance of getting credit for women entrepreneurs is 0.9. This is almost an equal chance compared to their counterparts. Access to financing is therefore a constant function of equity.

Tableau 11 : ACCES_CR = f (FPR)

ACCES_CR	(Odds Ratio)	Standard Error	T-Stat (z)	P>|z|
FPR	0,9009829	0,3520331	-0,27	0,790
Constant	0,0746392	0,0630075	-3,07	0,002
Odds ratio and 95% confidence interval				
		Minimum	Maximum	
FPR		0,4189229	1,937756	

Source: Construction of the author from STATA 14

Similarly for the variable AIDE, we have: $\hat{\alpha}_{AIDE}$ = 1.277461 and $e^{\alpha_{AIDE}} = e^{\mathbf{1.277461}}$ = 3,587519. Similarly, we still note that with the logit regression, the odds-ratio of the variable AIDE is significantly different 1via the WALD test for the coefficients or via the intervals of variation of the odds-ratio: We have OR (Odds Ratio) AIDE = 1.277461 (Table 12). This value is greater than 1 we can say that female project-carrying individuals are more likely (i.e. 1.277461) to have access to credit when they receive some help from the family or else. In Cameroon, relationalism is one of the

factors of aid that promotes the business atmosphere, in particular the facilitation of access to bank credit.

Table12 : ACCES_CR = f (AIDE)

ACCES_CR	(Odds Ratio)	Standard Error	T-Stat (z)	P>|z|
AIDE	1,277461	0,3041456	1,03	0,304
Constant	0,0746392	0,0630075	-3,07	0,002
Odds ratio and 95% confidence interval				
		Minimum	Maximum	
AIDE		0,8011031	2,037074	

Source: Construction of the author from STATA 14

The results of the analysis show that the variable STAMATR is positive and not significant (0.625). That is, the more married applicants (women) are, the more likely they are to access financing. This result is consistent with Watkins (1984) who found that 48% of women entrepreneurs are married, 29% are divorced and 19% are single. The stabilizing role of marriage is not verified for the wife. For the husband, it can be either a hindrance or a stimulus to business creation. Marital status is not without effect on the decision to start a business. According to the logit regression, the odds ratio for the variable STAMATR is 1.1155714 (see Table 13). This value is also greater than 1 (OR=1.115571>1), indicating a positive effect, so the status of the married woman entrepreneur has a 1.115571 chance of getting credit. Thus, access to credit is an increasing function of marital status.

Table13 : ACCES_CR = f (STAMATR)

ACCES_CR	(Odds Ratio)	Standard Error	T-Stat (z)	P>|z|
STAMATR	1,115571	02492998	0,49	0,625
Constant	0,0746392	0,0630075	-3,07	0,002
Odds ratio and 95% confidence interval				
		Minimum	Maximum	
STAMATR		0,7199076	1,728692	

Source: Construction of the author from STATA 14

Table 13 shows the result of the regression of the access to credit factor model. Inthis section, we interpret the impact of each individual variable on the likelihood that gender will have access to credit. We have used marginal effects for this purpose. Only the marginal effects of the significant variables from the regression were analyzed. The results are presented in the table below (14). We will perform logistic regression to determine which variables are positively or negatively significant according to the table below.

Table 14: Logistic regression of model 2

Variables	Odds Ratio	Standard Error	T-Stat (z)	P>|z|
GENRE				
AGE	**1.030158*** **	0. 011196	2.73	0.006
STAMATR	1.07 8132 ns	0.23898	0.34	0.734
TYE				
PE	1.218599ns	0.42032	0.57	0.567
ME	1.083205ns	0.74918	0.12	0.908
GE	0.8689307ns	0.55062	-0.22	0.825
FPR	**0.3265557****	0.17993	-2.03	0.042
AIDE	1.324075ns	0.3296	1.13	0.259
ENFOR	0.8927241ns	0.47303	-0.21	0.83
LnVALGARAN	1.0595676ns	0.04429	1.38	0.166
LnCAF	1.0643098ns	0.06009	1.1	0.27
Cons	0.61876	0.56636	-0.52	0.6
Number of obs. = 540				
LR chi2 (10) = 24.48				
Prob > chi2 = 0.0064				
Pseudo R2 = 0.0378				

Source: Author's construction from Stata 14.

NB: the signs ***, **, * translate respectively the significance at the threshold of 1%, 5% and 10% and ns not significant.

From the table above, we see that we have two variables that are positively significant, namely the variable FPR and AGE, which allows us to analyze the marginal effects of these variables.

Table 15: Marginal Effects

Variables	Marginal effects
AGE	0.0058057
FPR	-0.2152303

Source : construction de l'auteur à partir de Stata 14.

The marginal effect of the VARIABLE AGE indicates the probability that the female gender will have access to credit is increased by about 0.58057% when the female gender individual requests the credit. Moreover, this table (15) shows, on the other hand, that the probability that the female gender will have access to credit decreases by 21.52303% when the latter has its own fund. The more equity the genre has,the less it has access to bank credit.

V.CONCLUSION AND POLICY RECOMMENDATIONS

The rise of financial institutions is the result of the establishment of new mechanisms to address these types of problems. This growth has resulted in improved living conditions for many of the world's entrepreneurs. However, some studies, such as those by Hononhan (2004) and Christen et al (2004), have shown that a large proportion of entrepreneurs are still excluded from the services of microfinance institutions. Indeed, even though the number of entrepreneurs supported by these institutions is constantly increasing, the coverage rate remains low in most countries.

The spirit that excelled throughout this work was to show the gender differences in access to bank credit for businesses in Cameroon. To achieve this, the Binary Logistic Model was specified to perform the data analysis. The results of this analysis led us to draw the following conclusions: first, we used the discrimination model to determine whether women are marginalized in the demand for credit or not. The results led us to say that there is no discriminatory behavior of gender (sex) in access to credit or at least to a non-significant impact. Thus, whether one is male or female has no influence or impact on the demand for credit. In the second conclusion,

the model of discrimination factors based on 640 observations made in Cameroon over the period from 2011 to 2012 leads us to a rather important analytical result. Based on the different techniques applied from logistic regression to the equation of discrimination factors, we found with moderation that the model is globally significant 1% (for a Prob > chi2 = 0.0000). The third finding concerns women's access to credit. Women do not appear to be a privileged clientele of banking institutions. If we consider the slow accession of Cameroonian women to entrepreneurship, we can say that the woman who has a loan and a business is an innovator and a central actor in the change of Cameroonian society (Lakhal, 1999).

The numerical values of the coefficients have no direct interpretation; however, their sign and the fact that they are positive or negative are interpretable. The sign allows us to know whether the probability of access to credit is an increasing or decreasing function of the corresponding explanatory variables (all other things being equal). Thus, at the output of our logit regression, we obtained coefficients whose sign is all positive with some variables significant and others not.

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