Microfinance And Social Performance In Africa

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INTRODUCTION

In Africa, the microfinance sector is expanding rapidly and the microfinance institutions have seen their businesses grow in recent years. Indeed, African MFIs are among the most productive in the world after Bangladeshi and Indian MFIs, in terms of the number of borrowers and savers (Mix Market 2008).

In fact, India owns the highest concentration of the number of borrowers, with 188 million accounts of clients representing 18% of the total population in the developing world. Africa is at a level almost equivalent with 27 million accounts of clients with 4% of the population in the developing world **(Christen, Rosenberg and Jayadeva, 2004)**.

With more than 780 million people, Africa is a varied region with its history, its culture, its languages, its economic prospects, its political systems, etc. Despite this diversity, Africa is facing many challenges. Between 1996 and 2005, the rate of poverty in Africa increased by 7%. The rate of poverty in Sub Samarian Africa (SSA) has not decreased over the past twenty five years (50%). The number of very poor (on an average, less than $ 0.70 income per day) has almost doubled from 200 to 380 million people. In 2015, one third of a billion of the world's poor will live in Saharan Africa (Wikipedia, 2010). It should be noted that countries like Burkina Faso, Uganda, Tanzania and Mozambique have experienced a strong recent economic growth, corresponding to a fast decline in poverty levels. Yet, 50 % of the populations in Africa stay under the poverty line and the depth of their poverty remains the biggest in the world. Following the 2008 strong economic growth in some African countries , the global economic slowdown, the credit subprime and falling commodity prices generated a harsh effect on these countries in 2009. Currently, Africa is pursuing a policy of reforms needed to accelerate the progress in human development and infrastructure improvement. (CGAP 2010, Consultative Group to Assist the Poor).

However, Microfinance cannot succeed if it loses the sight of its social objectives.

Indeed, Microfinance is a growing industry. Studies that examined the relationship between diversification in geographical zones and social performance have concluded that the geographical scope of many large and multinational business organizations and the increasing interdependence of international economies have a notable impact on the SP (Social Performance) of companies **(Vernon, 1998; Kostova and Zaheer, 1999; Dowell and al., 2000; Sharfman and al., 2004; Brammer, Pavelin, Porter, 2006)**. Other studies that focused on the measure of SP of MFIs -in the absence of worldwide normalized social indicators- used proxies to measure their outreach in terms of profundity (**DEPTH**) and in terms of breadth (**NAB**). Both indicators are published by the MIX, and are commonly used in the literature **(Morduch, 2000; Schreiner, 2002; Gutiérrez-Nieto and al, 2005; Hartarska, 2005, 2008; Soulama S. 2005; Cornée, 2007)**.

In fact, due to the rapid growth of the world population, the number of the poor people has not declined since 1990, and it represented approximately 50 million people living on less than 2$ per day in 2005 (World Bank, 2008). For the poor, microfinance can be a solution: it grows gradually in Africa, through MFIs are extremely varied (NBFIs, NGOs, COOPs and BANKS). In 2007, the 160 African MFIs that reported their financial information to the global database MIX Market, showed 5.2 million borrowers and 9,000,000 savers. In the last five years, the African microfinance sector has evolved rapidly in several countries. The area is marked by the diversity of institutions: non-governmental organizations (NGOs), financial and mutual cooperatives (COOPs), rural banks, associations, non-bank financial institutions (NBFI), microfinance banks (BANK), savings and commercial banks. (CGAP 2010, MIX MARKET).

MFIs in Africa provide a relevant illustration of the relationship between geographical zones and SP; they include a geographically dispersed range of institutions that offer various financial services to low-income clients. The analysis of MFI's activities helps answer the following questions: How does the SP of the microfinance sector behave in the regions of Africa? And how does microfinance allow women to defend their rights, and thus enhance their true

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freedom and autonomy?
The situation of single women (single mothers, aged women living alone) is extremely critical. In 1990s, more than half of the women over 65 in Asia and 71 in Africa were living below the poverty line, against only 10-20% of the men of the same age. Many of these women combine poverty and social exclusion and their vulnerability will worsen because of the population's aging (World Bank, 2003).
This paper develops a new database of about 168 MFIs operating in 26 countries classified over five regions of Africa which are: Central Africa, North Africa, East Africa, Southern Africa and West Africa, over the period 2005-2008. It adopts an empirical approach, which measures the impact of changes in geographical zones on SP. The results indicate that the percentage of women borrowers does not have the same effect on SP in the different areas of Africa. In fact, the researchers found evidence for a significant and positive link between the SP and the geographical area in North Africa, Southern Africa and West Africa.

LITERATURE REVIEW

The study aims to explain the relationship between the SP and the geographical area in Africa (*welfarist approach*) **(Woller, 2002; Montgomery and Weiss, 2005; Hashemi and Rosenberg, 2006).**
The *welfarists* based their theory on the social responsibility towards the customer in order to meet their expectations **(Carroll, 1979)**. The welfares prefer to charge subsidized and low interest rates by relying on donor's funds. This approach evaluates the SP of MFIs from the perspective of the client through the ("*outreach*") and ("*assessment impact* ").
SP is the effective translation of an MFI's objectives such as:

- Reaching poorer and excluded clients;
- Improving the lives of clients and their families;
- Widening the range of opportunities for communities **(Mix, 2009)**.

Authors who used *outreach* to measure SP are: **(Lafourcade and al., 2005).**

Outreach Indicators : To measure the *outreach*, some indicators "*outreach indicators*" can be used in terms of the degree "*breadth of outreach*" or in terms of profundity "*depth of outreach*" **(Olivares-Polanco, 2005; Makame and Murinde, 2006; Ferro Luzi and Weber, 2006; Paxton, 2007; Hermes and al., 2009)**. The breadth corresponds to the number of customers served measured by the (**NAB**), **(Gutiérrez-Nieto and al, 2005)**, and the volume of services such as the total savings on deposit and the total outstanding portfolio **(Lafourcade, Isern, Mwangi and Brown, 2005)**. The breadth allows to know the socio- economic level of clients served by MFIs, that is to say the level of poverty of clients (People with very low income, rural populations, women and / or the unemployed). The CGAP (Consultative Group to Assist the Poor) measures the socio- economic level (**DEPTH**) with a ratio of the (Average loan balance per borrower / GNP per capita). If this ratio is under 20%, then it is a very poor population **(Schreiner M. 2002; Montalieu, 2002; Morduch J. 2006)**. Studies that attempted to observe the results of this outreach showed that some MFI's tended to be exclusive and were not accessible to all classes of the population. MFI's customers are not necessarily the poorest people **(Lelart, 2006)**.
Olivares-Polanco (2005) investigates the determinants of outreach in terms of the loan size of MFIs, using data for 28 MFIs in Latin America for the years 1999-2001.
Lensink, Meesters and Hermes (2008) founded that MFIs in Africa (as compared to MFIs in Asia and Latin America) are less efficient, they used stochastic frontier analysis (SFA), to measure the efficiency of individual MFIs. In addition, older MFIs seem to be less efficient than younger MFIs. Finally, if controlled for outreach, efficiency seems to be higher for MFIs that focus on group lending (SOLIDARITY) as compared to MFIs that focus on individual lending.
Zeller and Johanssen (2006) assumes that efficient MFIs are able to contribute to improving economic conditions at the local, regional and country level, and that contributions ultimately are higher than the contributions to poverty alleviation made by MFI concentrating on outreach rather than efficiency.

The *"Assessment Impact"* : This section discusses the impact of micro- credit on clients, and more specifically on women, as borrowers through micro-credits.
"Experience worldwide shows that when microfinance services reach women, the benefits are particularly

sustainable. Savings rates are higher; group life is more intensive; repayment rates are remarkable; enterprise growth and graduation are stronger; and there are measurable improvements in child nutrition and education, family health and household sanitation, shelter and general welfare" **(Raghav Gaiha, 2007)**.

Women are not a homogeneous group. They have different financial needs, which vary depending on the socio-cultural context and experience **(Susan, 2006)**.

❁**SPI (Social Performance Indicator) :** Model of the evaluation of social performance, developed by the CERISE credit, is one of most advanced models. It aims to expand the framework for analyzing SP in retaining four major dimensions namely: targeting the poor and excluded, the adaptation of services and products to target customers, improving the social and political capital of clients, and the social responsibility of MFIs. In 2008, women constitute 62% of the borrowers of the IMFs in Africa. *(Benchmarking of Microfinance in Africa 2008, MixMarket and CGAP, December 2008)*. This choice justifies itself by the fact that the studies showed that the impact of Microcredit is more important for the women borrowers than for the men borrowers. Women's presence is more in rural zones than in urban zones.

Guérin, (2006), considered that women are among the poorest of Poor and especially, the most vulnerable. It is then necessary to help them first and foremost, because they are the most needy. To conclude, women can take multiple and diverse productive activities, and their sources of income are more than men **(Soulama, 2005)**. Thus, the second variable of the SP is the (% Women Borrowers **(WB))**.

The existing evidence on the relationship between regulation and outreach of microfinance institutions takes several aspects. **Van G. and al, (1998); Hardy, et al., (2003)** assume that, *"Deposit-taking institutions should be regulated, but those without deposits from the public should not, and MFIs which fall in between should have some form of targeted regulation"*.

Makame and Murinde (2006) found evidence for a negative relationship between regulation and outreach. **Hartarska and Nadolnyak (2007)** investigate the impact of regulation on the performance of MFIs. They do not find any evidence that regulated MFIs perform better in terms of sustainability of outreach as compared to non-regulated MFIs.

In this study, the first question to ask is: *what's the impact of the variation of the African geographical areas on the SP of MFIs measured by the breadth and depth of outreach?*

The analysis can involve the individual, the family, the business or the local and national environment at several levels: economic, social, anthropological, medical, etc...

The researchers measure the impact of microfinance for three main reasons: To prove the ability of the MFI to achieve its objectives in the fight against poverty and financial exclusion; to attract public and private funding, and to understand the needs of customers to serve them better. The purpose of this variable **(WB)** is to assess the impact of microfinance projects on the empowerment of women. The second questions to ask are: Shall we improve revenues, assets, levels of client savings, or improve living conditions for the excluded population (health, education, etc...), or rather, improve job creation, empowerment, position of individuals in their family and community, social capital building?

Following the authors **Brammer, Pavelin, Porter (2006)**, in the regression model ,the researchers study the impact of the variation of the geographical area through the five zones of our sample, namely: Central Africa (CA), North Africa (NA), East Africa (EA), Southern Africa (SA), and West Africa (WA), on the SP. The total sample includes 104 observations in 26 countries over the period 2005-2008.

DATA AND EMPIRICAL SPECIFICATIONS

The data of the study were collected from two sources: the MIXMARKET (www.mixmarket.org), and the C-GAP (Consultative Group to Assist the Poor) (www.cgap.org). The choice of the time interval, which covers the period 2005-2008, is justified by the availability of much of the data in this period. Our study covers 168 MFIs, from 26 countries, from five regions of Africa .

The MIXMARKET data provides the financial and outreach profiles of the MFIs of our sample, and this improves the transparence of these MFIs.

Because of the difference of the geographical and cultural profiles of the African regions under study, the researchers measure the impact of the geographical variety on the SP. The researchers used the following dependent variables: the

Number of borrowers (NAB), the Average loan balance per borrower / GNP per capita (DEPTH) to measure the outreach, and the Percentage of women borrowers (%WB) to measure the assessment impact (Table 4). **(Gutiérrez-Nieto and al, 2005; Morduch J. 2006; Schreiner M. 2002; Montalieu, 2002; Soulama, 2005).**

Table 1 summarizes the characteristics of the sample. The global statistics were taken from the MIX 2008 benchmarks (www.mixmarket.org). In Table 2, the researchers summarize the most important volume indicators for the five regions. Volume indicators also vary according to the type of MFI; the details are indicated in Table 3.

Table 1: Characteristics Of The Sample

Type of MFI	CA	NA	EA	SA	WA	Total	% of sample
BANK	1	-	6	4	0	11	**6.51%**
NBFI	7	-	30	6	4	47	**27.81%**
COOP	11	-	3	1	33	47	**28.40%**
NGO	3	24	13	8	15	63	**37.28%**
Total	**21**	**24**	**52**	**19**	**52**	**168**	**100%**
% of sample	**13.02%**	**14.20%**	**30.77%**	**11.24%**	**30.77%**	**100%**	

Table 2: Characteristics of MFIs By Geographic Regions

Indicators	CA	NA	EA	SA	WA
Number of MFIs	21	24	52	19	52
Population*	38, 366 247	120, 638 148	238, 746 025	110, 412 557	95, 181 978
Age of MFIs (years)	Median 11	Median 11	Median 9	Median 8	Median 10.5
Total assets ($)	6, 67850	11, 299255	4, 73968	3, 23961	2, 56149
Gross loan portfolio	5, 0051625	5, 531387	3, 781843	4, 971528	2, 745432

Table 3: Characteristics of MFIs By Status Types

Indicators	NGO's	COOPs	NBFI	BANKs
Number of MFIs	63	47	47	11
Age of MFIs (years)	Median 11	Median 11	Median 8.5	Median 6.5
Total assets ($)	2, 530,966	3, 520,569	4, 423,538	41, 156,071
Number of borrower	11,744	3,661	14,346	14,540
Gross loan portfolio	1, 691,354	2, 002,319	3, 239,159	21, 289,899

To explore the impact of changes in geographical zones and of regulation on MFI's SP, this paper adopts an empirical approach similar to the approach employed by **Molyneux, Lloyd-Williams, and Thornton (1992) and Barth, Nolle, Phumiwasana, and Yago (2003) ; Hartarska, (2005); Zeller and Johanssen (2006); Hartarska and Nadolnyak (2007); Lensink, Meesters and Hermes (2008); Florent and Reynaldo, (2009)**.

The researchers used panel data in the form of annual observations of data that were available during the four consecutive years from 2005 to 2008. The empirical model consists in examining the SP from the angle of the geographical and regulatory specificities to emphasize the similarities and differences according to each region of implementation of the MFIs. Hence, the empirical model that is estimated is:

$$\mathbf{SP}_{jt} = f(\mathbf{M}_{jt}, \mathbf{Z}_{jt}, \mathbf{R}_{jt}) + \varepsilon_{jt}$$

SPjt is a social performance variable for MFIs in country *j* at time *t*; *Mjt* are the country macroeconomic variables; ***Zjt*** geographic zone variables; ***Rjt*** is the regulatory variable. **(Hartarska, 2005, 2008)**.

The model will be of the form:

$$\mathbf{SP}_{jt} = c + SE_{jt} + INF_{jt} + DEP_{jt} + INT_{jt} + ZON_{jt} + RE_{jt} + CA_{jt} + NA_{jt} + EA_{jt} + \mathbf{SA}_{jt} + \mathbf{WA}_{jt} + \varepsilon_{jt}$$

The dependent variable used in this regression analysis is defined in the Table 4. In fact, MFIs social performance

(SP_{jt}) is measured by the outreach (breadth and depth) and by the assessment impact. Table 5 summarizes the independent variables with their definitions and the hypothesis relating to outreach. Table 6 summarizes statistics of independent variables. The breadth of outreach is measured by the logarithm of the number of active borrowers (***NAB***). The depth of outreach is measured by the average loan balance per borrower / GNP per capita in $US (***DEPTH***). A high value of DEPTH means that the MFI serves the richer borrowers **(Rosenberg, 2002; Vu Minh Hien, 2009).**

The assessment impact is measured by the percentage of Women Borrowers (***WB***) **(Soulama, 2005)**. In fact, in Africa, women are more responsible managers of meager resources. The most compelling reason for MFIs to prioritize women is to assist the poorest, who are disproportionately women.

The independent variables in M_{jt}, the country's macroeconomic variables are measured by four independent variables: the first variable is the size of the economy (SE_{jt}) measured by the logarithm of a county's GDP. The researchers assume that the SP varies in the same way as the economy size. The second variable is the average inflation rate (INF_{jt}) measured by the average customer price index. (SE_{jt}) and (INF_{jt}) come from the World Bank Development Indicators. **Hartarska, 2005** found that the level of inflation in Central and Eastern Europe and the Newly Independent States affects sustainability negatively, but she thinks that MFIs in higher inflationary environments seem to reach more borrowers. The researchers support the hypothesis of **Hartarska, 2005**, which says that high inflation increases the SP.

The third variable is the availability of deposit insurance ***(DEP_{jt})*** : Indeed, the presence of a deposit insurance system in a country protects the interests of depositors. It is measured by a dummy variable that equals 1 if there is a deposit insurance system in the country, and 0 if not **(Brooks, Faffa, and Hiller, 2004; Hartarska, 2005, 2008 and econ.worldbank.org, 2009)**. In Africa, the existence of a guarantee fund protects depositors, and thus, it can reduce the excess risk of the bank that no longer generates significant revenue to report a good performance to its customers and avoid liquidity problems. According to the researchers' analysis, the hypothesis which says that the presence of a deposit insurance system in a country improves its SP is sustained.

And finally, the fourth variable is the interest rate on deposit accounts (INT_{jt}) measured by the real interest rate applied to the MFIs (International Financial Statistics). **Morduch, 2000, 2007**, has noted that the high level of interest rates is due to the fact that the demand of credit is not very flexible for people rationed. **Acclassato, 2006** reports that in West Africa, the MFIs have been financially viable with an interest rate of around 84%. The researchers conclude that in order to achieve financial sustainability, the MFI should set high interest rates enough to cover its expenses, because a too low interest rate may cause a deficit. Contrariwise, unnecessarily high interest rates penalizes the MFIs customers. It may lose them, which could undermine its social mission, and ultimately its SP **(Robinson, 1996; Conning, 1999)**.

In this study, the researchers support the hypothesis which indicates that the high interest rate varies inversely with the SP.

Z_{jt} , the geographical zone variable (ZON_{jt}) is included in the regression to control the influence of the geographical area on the SP of MFIs. The researchers have used five dummy variables for five regions of Africa **(CA_{jt}, NA_{jt}, EA_{jt}, SA_{ji} and WA_{jt})**. This variable **(ZON_{jt})** was chosen because the impact resulting from the diversification of the geographical zones in terms of social, cultural, legal, regulatory and economic variations directly influences the SP of MFIs **(Sharfman and al., 2004)**. So, due to all these considerations, the researchers cannot anticipate the impact of geographical zones on SP (+/-).

R_{ji} is the regulatory variable. It is also a dummy variable **(RE_{jt})** that takes the value 1 if the country's institutions are

Table 4 : Descriptive Statistics For Dependent Variables Used In The Analysis

Variable	Mean	Skew	Std	Min	Max	N	Definition
NAB	13,095	2,194	12,425	1,1920	77,781	104	(Number of Active Borrower) measured by the logarithm of the number of current borrowers.
DEPTH	61,525	1,5867	43,837	9,3900	253,26	104	(Depth of outreach), measured by the average loan balance per borrower / GNP per capita in $US.
WB	58,639	-0,4008	13,91	25	84,140	104	(Women borrowers in MFIs %) measure the impact of the presence of women borrowers on the SP.

Table 5 : Independent Variables And Their Hypothesis Sign With SP of MFIs

Variable	Definition			Hypothesis	
			NAB	DEPTH	WB
SE	Logarithm of the total GDP (gross domestic product of the country) for year t	H1	+	+	+
INF	Average annualized customer price index	H2	+	+	+
DEP	1 if the country has deposit insurance schemes, source: World Bank survey	H3	+	+	+
INT	Real interest rate applied at the institution	H4	-	-	-
ZON		H5	+/-	+/-	+/-
CA	Dummy equaling 1 if the country exists in the region of CA		+/-	+/-	+/-
NA	Dummy equaling 1 if the country exists in the region of NA		+/-	+/-	+/-
EA	Dummy equaling 1 if the country exists in the region of EA		+/-	+/-	+/-
SA	Dummy equaling 1 if the country exists in the region of SA		+/-	+/-	+/-
WA	Dummy equaling 1 if the country exists in the region of WA		+/-	+/-	+/-
RE	Dummy equaling 1 if the MFI regulated by a governmental regulatory agency	H6	-	-	-

Table 6 : Summary Statistics Of Independent Variables

Variable	Mean	Min	Max	Skew	Std	N
SE	23,209	19,525	26,371	-0,0882	1,3753	104
INF	7,55	-0,2	44,4	2,6211	6,0787	104
INT	13,33	-8,5	27	0,0546	10,47	104
DEP	0,115	0	1	2,4077	0,3210	104
ZON	3,307	1	5	-0,325	1,4948	104
RE	0,769	0	1	-1,278	0,4233	104

regulated by a governmental regulatory agency and 0 otherwise. **Christen and Rosenberg (2000), Christen and al. (2003), Arun (2005)** say that the viability and outreach of MFIs can be present together in a regulated context; unlike CGAP, which claims that the instructions of the regulations may reduce the performance of MFIs, and advocates a separate frame with matching criteria to microfinance. In fact, regulations may cause barriers to the entry to the MFIs (interest rate cap in the UEMOA to 27%, which is undesirable to the poor). The researchers support the hypothesis of **Makame and Murinde (2006)**, who found evidence for a negative relationship between regulation and outreach.

DISCUSSION OF THE RESULTS OF THE OVERALL MODEL

The results from panel data estimations to evaluate the impact of changes in geographical zones in African regions and the impact of regulation on SP are presented herewith. Table 9 shows results from regression analysis with (NAB), (DEPTH) and (WB) as dependent variables. The signs of the coefficients are mostly as expected. The majority of the results are significant. Specifically, the results confirm that (NAB) and (WB) vary in the same way as the (Size Economy Size). Indeed, this variable is statistically significant with (NAB) (24.71) as expected, but its impact on WB is not consistent (0.667), although in 2008, women represented 62% of the borrowers of the MFIs in Africa, **(Benchmarking de la Microfinance en Afrique 2008, MixMarket and CGAP, December 2008)**. In fact, from the sample, it was found that the two countries occupying the first places in the percentage of women borrowers are Malawi and Tanzania. They belong respectively to the regions of the SA and EA. They touch the highest level of women borrowers, respectively 82.05% and 77.79%. The regional median became 58.51%, when Cameroon was excluded,which has one of the lowest rates with 33.56%. Only two countries: Equatorial Guinea and the Cameroon show a decrease in (WB). DEPTH affects the Size of Economy negatively, which is not consistent with the hypothesis. This result is paradoxical; in fact, the (NAB) should be proportional to the economic growth. The level of inflation positively affects SP, which means that MFIs in higher inflationary environments tend to reach more borrowers. This is consistent with the hypothesis. In addition, the positive sign of (WB) is expected. In fact, when microfinance offers

women substantial volumes of liquidity, it is very likely that a monetary inflation will take place **(Rahman, 1999)**. So, the positive relationship between (WB) and Inflation is expected, as the percentage of women borrowers is high. The interest rate (INT) has a negative and significant relationship with SP, which is consistent with the hypothesis. The high interest rates penalizes customers, and this may reduce SP. In fact, the high interest rates of MFIs are required to cover their charges: on the one hand, the costs of capital lend, and on the other hand, the operating costs which usually represent 20% to 50% of the amounts lent. The granting of credits generates fixed charges (to meet the customer and to follow the reimbursement…), the smaller the credits are, the higher are the costs. The high costs of the transactions are often considered as an obstacle to reach larger imposing population (customers). In the remote zones, the MFIs try to cover their operating expenses by the high interest rates on small loans. However, two series of empirical studies show that this obstacle is not as acute as it seems to be: studies led in Sri Lanka **(DeMel, McKensie and Woodruff (2007))**, and in Mexico **(McKensie and Woodruff (2007))**, showed that MFIs had lost high returns, which could sometimes exceed 10 % a month. Then, observations realized in Dhaka **(Dehejia, Montgommery and Morduch, 2005)** and in Africa **(Karlan and Zinman, 2009)** suggested that the elasticity of the demand for credit was low. These reports show that the high interest rates do not necessarily represent a big obstacle to the growth of the microfinance sector.

Table 7: Macroeconomic Indicators for Africa

	Real GDP growth (in %)				Inflation (in %)			
	2005	2006	2007	2008	2005	2006	2007	2008
Southern Africa	6.2	6.3	6.8	6.6	9.0	7.3	7.2	7.9
Central Africa	7.0	7.4	8.4	9.0	13.7	7.9	5.9	11.2
West Africa	7.7	8.6	8.9	6.6	7.8	9.8	10.0	4.9
East Africa	5.1	2.5	4.5	6.0	6.3	5.7	3.8	7.7
North Africa	4.1	4.4	4.2	5.5	1.5	3.1	3.1	3.7
Oil producing countries	6.7	7.0	7.4	6.0	6.8	6.7	8	8.9

Source : *Perspectives de l'économie mondiale*. FMI. avril 2008.

The Deposit affects the SP negatively. In fact, the existence of a system of deposit insurance (DEP) reduces the probability of risks. This impact is negative, perhaps because most of the regions in the sample do not have a system of deposit insurance except East Africa. And that's why, the (WB) has a positive and significant relationship with (DEP), which proves that women seek opportunities with minimized risks. Concerning the Geographical Zone variable, CA has a significant and positive relationship with (DEPTH), significant and negative relationship with (WB), but not consistent with (NAB). In fact, the real GDP per capita in Central Africa has known a strong growth between 2005 and 2008 (7 % and 9 %) (Table7). The growth rate of the real GDP per capita indicates a favorable progress of average incomes over the period. NA has a positive and significant sign with (NAB) and (WB) as expected. In fact, NA is composed only by NGOs. This type of statute has a comparative advantage with regards to the ability to reach the poorest women **(Dichter, 1996)**. NGO's statute is consistent with the mission of the microfinance. They are non-profit organizations and they are independent of governments. They are also called also voluntary sector organizations **(Boyé and al,. 2006)**. Although the majority of NGO's MFIs do not exceed 40.000 clients, some are large in size: for example, Al Amana in Morocco (481.000 clients), Jamii Bora in Kenya (170.000), and PRIDE in Tanzania (99.000).
EA, have a negative and significant relationship with the (DEPTH). That result was expected. The most institutions in EA are NBFIs, which are for-profit financial institutions. These MFIs have a regulated statute, providing credit and not collecting deposits. (WB) is negatively affected by EA, but not significantly, perhaps because women in EA prefer borrowing from a non regulated institution to have less interest rate. The (NAB) has a positive and significant relationship with EA. Indeed, the mean of NAB (13.095) is important. The SA and WA are associated positively and significantly with NAB and WB. These regions are essentially composed of respectively NGOs and Cooperatives. Concerning NGOs, this result is justified. According to Cooperatives, this type of financial institution has proliferated in Africa. Cooperatives are for-profit organizations. The importance of credit unions is not unique to Africa, and at least two recent studies of other regions have also found ample SP **(ADA, 2008)**. In Latin America, it is estimated that there were 6 million microfinance borrowers in 2005 from credit unions, equivalent to the SP of all other types of microfinance institutions combined **(Navajas and al, 2006)**. The DEPTH has a negative and statistically significant

relationship with the both variables, SA and WA.Testing the impact of regulation on outreach is important, because it's argued that regulated MFIs could reach more borrowers when their leverage opportunities improve as a result of regulation **(Hartarska & Nadolnyak, 2007)**. The impact of (WB) on regulation is positive and significant because of the predominance of the percentage of women borrower in SA (69%) and WA (56%). (RE) has a negative and significant impact on the (DEPTH) and (WB), which is consistent with the hypothesis **(Makame and Murinde, 2006)**, has a positive but not significant relationship with (NAB). Besides, it's evident that the average loan and the number of borrowers substitute the effects. Adding one borrower could reduce the average loan. In fact, a clear and transparent regulatory framework is necessary to achieve the SP. In addition, MFIs' traditional fund sources usually cannot keep pace with their lending business, and thus they need to have access to external finance _donors_ to complement their own resources and to reach as many prospective borrowers as possible **(Joselito Gallardo, 2002).**

Table 8: Correlation Between Independent Variables

	SE	INF	INT	DEP	ZON	RE
SE	1.00	**0.15**	**-0.53**	0.08	**-0.25**	**-0.49**
INF		1.00	**-0.31**	**0.17**	-0.02	**-0.31**
INT			1.00	**-0.13**	**0.72**	**0.40**
DEP				1.00	-0.07	-0.09
ZON					1.00	**0.17**
RE						1.00

Bold: Correlation is significant at the 0.05 level.
Bold and italic: Correlation is significant at the 0.01 level.

Table 9: Dependent Variables (NAB, DEPTH, and WB) Explained By Macroeconomic Variables, Geographical Zone Variables, And Regulatory Variables

Variables	NAB	DEPTH	WB
SE	24.717 (0.000)***	-3.844 (0.0002)***	0.667 (0.5059)
INF	0.738 (0.4620)	0.552 (0.5819)	1.830 (0.0703)
INT	-3.768 (0.0003)***	-2.196 (0.0304)**	-5.043 (0.000)***
DEP	-0.382 (0.7032)	-2.432 (0.0168)**	-4.946 (0.000)***
ZON			
CA	-0.340 (0.7340)	3.418 (0.0009)***	-2.811 (0.0060)**
NA	3.004 (0.0034)***	-18.17 (0.000)***	3.196 (0.0019)***
EA	2.151 (0.0340)**	-4.498 (0.000)***	-0.220 (0.8259)
SA	7.906 (0.000)***	-13.46 (0.000)***	4.438 (0.000)***
WA	6.634 (0.0002)***	-9.733 (0.000)***	7.00 (3.3914)**
RE	0.254 (0.7996)	-7.163 (0.000)***	-2.002 (0.048)**

Robust t-statistics in the parentheses.
Significant results at the 1%. 5% and 10% levels are marked with (***). (**) (*).

RESULTS BY GEOGRAPHICAL AREA

The results by Geographical area are given in Table 10, 11 and 12.

CONCLUSIONS

In the study, the researchers used panel data in the form of annual observations: The first objective in our empirical model consists in examining the outreach of MFIs (NAB, DEPTH) from the angle of the geographical and regulatory specificities to emphasize similarities and differences by region of implementation of the MFIs. The second objective in this paper is to evaluate the ability of microfinance to involve women (WB) in the economy and to improve their living conditions so as to achieve the SP through its two dimensions: outreach and assessment impact. Specifically, it

Table 10: Dependent Variables NAB Explained By Macroeconomic Variables, Geographical Zone Variables, And Regulatory Variables

Variables	NAB					
	Overall sample	CA	NA	EA	SA	WA
SE	24.71 (0.000)***	-5.677 (0.000)***	2.073 (0.0768)	-9.162 (0.000)***	6.106 (0.000)***	0.368 (0.7152)
INF	0.738 (0.4620)	-0.866 (0.3992)	-2.787 (0.0270)**	4.989 (0.0002)***	-1.008 (0.3294)	0.737 (0.4670)
INT	-3.768 (0.0003)***	2.036 (0.0586)*	0.963 (0.3673)	-14.99 (0.000)***	3.484 (0.0033)***	
DEP	-0.382 (0.7032)			-1.421 (0.1771)		
RE	0.254 (0.7996)	2.839 (0.02549)**	1.285 (0.2395)	3.705 (0.0024)**	4.881 (0.0002)***	4.905 (0.0018)**

Robust t-statistics in the parentheses.
Significant results at the 1%. 5% and 10% levels are marked with (***). (**) (*).

Table 11: Dependent Variables DEPTH Explained By Macroeconomic Variables, Geographical Zone Variables, And Regulatory Variables

Variables	DEPTH					
	Overall sample	CA	NA	EA	SA	WA
SE	-3.844 (0.0002)***	7.276 (0.000)***	3.017 (0.0195)**	-5.147 (0.0001)***	0.007 (0.9941)	-6.615 (0.000)***
INF	0.552 (0.5819)	3.251 (0.0050)***	-1.891 (0.1005)***	-0.613 (0.5495)	-1.409 (0.1792)	0.063 (0.9494)
INT	-2.196 (0.0304)**	-2.836 (0.0119)**	1.996 (0.0860)	0.486 (0.6340)	0.254 (0.8027)	
DEP	-2.432 (0.0168)**			-5.582 (0.0001)***		
RE	-7.163 (0.000)***	5.934 (0.0003)***	60.40 (0.000)***	9.511 (0.000)***	-0.048 (0.9621)	2.935 (0.0012)***

Robust t-statistics in the parentheses.
Significant results at the 1%. 5% and 10% levels are marked with (***). (**) (*).

Table 12: Dependent Variables WB Explained By Macroeconomic Variables, Geographical Zone Variables, And Regulatory Variables

Variables	WB					
	Overall sample	CA	NA	EA	SA	WA
SE	0.667 (0.5059)	-2.107 (0.0512)	-0.697 (0.5082)	0.929 (0.3682)	0.747 (0.4663)	3.189 (0.0034)**
INF	1.830 (0.0703)	4.728 (0.0002)***	0.783 (0.4593)	0.365 (0.7202)	-1.013 (0.3267)	-1.280 (0.2106)
INT	-5.043 (0.000)***	-4.918 (0.0002)***	-2.354 (0.0508)	3.420 (0.0041)***	2.963 (0.0097)*	
DEP	-4.946 (0.000)***			3.845 (0.0018)***		
RE	-2.002 (0.048)**	4.935 (0.0002)***	-0.725 (0.4916)	-4.865 (0.0002)***	4.998 (0.0002)***	-2.787 (0.0312)*

Robust t-statistics in the parentheses.
Significant results at the 1%. 5% and 10% levels are marked with (***). (**) (*).

investigates whether a high percentage of Women Borrower increases the Social Performance in geographical areas of Africa. The main result of this study is that the average loan, the number of borrowers, and the percentage of women borrowers do not have the same effects in different areas of Africa. However, the researchers found that the negative relationship between geographical area and SP masks some important heterogeneity that arises from the macroeconomic and regulatory differences, which opposes **Hartarska and Nadolnyak**. On the other hand, regulatory statute has no effect on the (NAB), but it has a negative and significant impact on the (DEPTH) and (WB), which is consistent with the hypothesis *(Makame and Murinde, 2006)*. Future works may also focus on the impact of diversification of legal statutes of MFIs on the Financial Performance in Africa to better understand the financial situation of African MFIs.

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APPENDIX

Table 1: List Of MFIs Included In The Analysis

Name	Country	Name	Country
A3C	Cameroon	Hluvuku	Mozambique
3A Enterprises	Equatorial Guinea	Hofokam	Uganda
ABA	Egypt	IDDA	Egypt
ABWA	Egypt	IDYDC	Tanzania
ACEP Cameroon	Cameroon	INMAA	Morocco
ACEP Senegal	Senegal	Jamii Bora	Kenya
ACFB	Benin	Jigiyaso Ba	Mali
ACSI	Ethiopia	KADET	Kenya
ADCSI	Ethiopia	Kafo Jiginew	Mali
Akiba	Tanzania	KixiCredito	Angola
Al Amana	Morocco	Kokari	Niger
Al Karama	Morocco	Kondo Jigima	Mali
Al Tadamun	Egypt	KPOSB	Kenya
Alidé	Benin	K-Rep	Kenya

ALPHA FUND	Cameroon	KWFT	Kenya
AMOS	Morocco	Lead Foundation	Egypt
AMSSF/MC	Morocco	Letta	Ethiopia
ARDI	Morocco	LSK	Burkina Faso
ASACASE CPS	Senegal	Madfa SACCO	Uganda
ASBA	Egypt	MAMIDECOT	Uganda
ASUSU CIIGABA	Niger	Marang	South Africa
BG	Ethiopia	Mbinga CB	Tanzania
BIMAS	Kenya	MC^2	Cameroon
BOM	Mozambique	MCL	Kenya
BRAC - SS	Sudan	MEC AFER	Senegal
BRAC - TZA	Tanzania	MEC FEPRODES	Senegal
BRAC - UGA	Uganda	MECBAS	Senegal
CAC	Cameroon	MECREF	Niger
CACOEC Sududiawdi	Mali	MED-Net	Uganda
CAFODEC	Equatorial Guinea	Meklit	Ethiopia
CamCCUL	Cameroon	MGPCC DEKAWOWO	Togo
Capitec Bank	South Africa	Micro Africa	Kenya
CAPPED	Congo	Micro Start	Burkina Faso
CAURIE Micro Finance	Senegal	MicroCred - SEN	Senegal
CBDIBA/RENACA	Benin	Miselini	Mali
CCA	Cameroon	MLF MWI	Malawi
CDM	Cameroon	MRFC	Malawi
CDS	Cameroon	MUL	Uganda
CECA	Togo	MUSCCO	Malawi
CECIC S.A.	Cameroon	Mutuelle Akwaba	Togo
CEC-PROM Mature	Cameroon	NovoBanco - MOZ	Mozambique
Centenary Bank	Uganda	NSBA	Egypt
CEOSS	Egypt	Nyesigiso	Mali
CETZAM	Zambia	OCSSCO	Ethiopia
CMCA	Central African Republic	OIBM	Malawi
CMMB	Benin	Opportunity Finance	South Africa
CMS	Senegal	Opportunity Kenya	Kenya
COOPEC Hinfani Dosso	Niger	PADME	Benin
Coopérative Taanadi	Niger	PAMECAS	Senegal
CPECG Yete Mali	Equatorial Guinea	PAPME	Benin
CRG	Equatorial Guinea	PASECA - Kayes	Mali
CUMO	Malawi	PASED	Sudan
CVECA Kita/Bafoulabé	Mali	PAWDEP	Kenya
CVECA Pays Dogon	Mali	PEACE	Ethiopia
CVECA San-Djenné	Mali	PRIDE - TZA	Tanzania
CVECA SOUM	Burkina Faso	Pride Finance	Equatorial Guinea
DBACD	Egypt	RADE	Egypt
DECSI	Ethiopia	RAFODE	Kenya
DECSI	Ethiopia	RCCECG	Equatorial Guinea

DIVUTEC	Guinea-Bissau	RCPB	Burkina Faso
DJOMEC	Senegal	REDFunds	Uganda
E-MFI	Zambia	Riverbank	Kenya
Enda	Tunisia	SBACD	Egypt
Equity Bank	Kenya	SCDA	Egypt
ESED	Egypt	SEDA	Tanzania
Esher	Ethiopia	SEF-ZAF	South Africa
FAM	Congo	SEM Fund	Senegal
Faulu - KEN	Kenya	SFPI	Ethiopia
Faulu - TZA	Tanzania	SMEP	Kenya
Faulu - UGA	Uganda	SOFINA	Cameroon
FBPMC	Morocco	Soro Yiriwaso	Mali
FDM	Mozambique	SUMI	Sudan
FECECAM	Benin	Tchuma	Mozambique
FIDEVIE	Benin	Tujijenge	Tanzania
Finance Trust	Uganda	UCCEC GY	Mali
FINCA - MWI	Malawi	UCEC Sahel	Burkina Faso
FINCA - TZA	Tanzania	UCEC/MK	Tchad
FINCA - UGA	Uganda	U-IMCEC	Senegal
FINCA - ZMB	Zambia	UMECDES	Senegal
FMF	Egypt	UNACOOPEC-CI	Côte d'Ivoire
FONDEP	Morocco	Vital Finance	Benin
FUCEC Togo	Togo	WAGES	Togo
Gasha	Ethiopia	Wasasa	Ethiopia
GRAINE sarl	Burkina Faso	Wisdom	Ethiopia
		Harbu	Ethiopia