MICROFINANCE, SOCIAL CAPITAL AND HOUSEHOLDS ACCESS TO CREDIT: EVIDENCE FROM COTE D'IVOIRE

BY

Edith Leadaut TOGBA
Department of Economics and Management
University of Cocody-Abidjan
PO BOX 2761 Abidjan 04, Cote d'Ivoire
E-mail: togbedith@yahoo.fr

ABSTRACT:

An irony observed in microfinance these days is its great preference for savings products rather than credit products for households. For some authors, this phenomenon is explained by the fact that microfinance's products especially its loan products don't meet the households demand. This paper analyses the Ivorian credit market so as to understand the determinants of credit choices from Banks, formal MFIs, and informal sources. The lack of trust in the microfinance institutions, and the size of loan among other factors play an important role. The presence of a higher level of social network justifies the low demand for credit witness by microfinance institutions.

Keywords: Microfinance, Social capital, Participation in credit, Multinomial Logit

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1.   INTRODUCTION

Financial market imperfections, such as information asymmetries and transactions costs, are likely to constrain access to credit the talented poor, the micro and small enterprises - that lack collateral, credit histories, and connections- thus limiting them to take up opportunities and leading to the persistence of inequality and slower growth. This is translated by the Conventional wisdom that lending to poor household will fail because the costs of doing so are too high; risks are too great, saving propensities of these households are too low, and just a few households have much to put up as collateral.

To solve this critical problem, government and donors implemented credit policies oriented towards specifics economic activities. Between the 1950s and 1970s governments and donors focused on providing subsidized agricultural credit to small and marginal farmers, in view of raising productivity and incomes. But the policies failed. According to Deshmukh-Ranadive and Murthy (2005), the repayment schedules were based on the expected income flow from investment. However, returns were often over estimated, especially in the context of agricultural production. They depended heavily on unpredictable weather conditions. So, the low rate of repayment was observed. In addition, there was also dependence on the fluctuating priorities of governments and donor agencies. Hence, credit provision for poor people was intermittent and limited. Furthermore, over time, there has been a global trend in criticism of subsidized forms credit. Attention has been focused on market based solution as against state based solutions.

Exclusion from financial system, render the poor as well as small enterprises to rely on their personal wealth or internal resources to invest for education, become entrepreneurs, or to take engage in promising growth opportunities. The Microfinance's framework should be an ideal to provide to vulnerable group of population similar products and services as formal sector financial institutions do too. Though the scale and method of delivery differ, the savings, loans, and insurance services provided by both institutions are similar. Concerning loans, the dominant product offered by the MFIs remains an enterprise or business lending (Woller,2002a). Despite some successes witnessed, all promises of microfinance are yet to be fulfilled in reality.

It is however ironical from credit union experience that poor people have a much higher demand for savings products than lending services (Richardson, 2000).The higher savings amount demonstrate this great preference. Since savings have a positive impact on sustainability of microfinance institutions (the fact that savings constitute the main resource is accepted by all), the poor's attitude toward greater savings could be profitable for the MFIs. Nonetheless, the main goal of microfinance is to alleviate poverty. MFIs are supposed to improve the welfare of the poor and exclude people of the formal banks. One way of helping the poor is providing loans to them. But, this social objective is hardly attained.

In addition, there are potential clients who refuse to join programs even though the products offered were supposedly designed for them. The fact that many in the target population refuse to participate suggests to some that something may be amiss (Meyer, 2002). This threatens social objective attainment.

Most of the advocates in favor of self sustainability say that attaining self sustainability could impact outreach in terms of the growth of number of people participating. They neglect the socio-cultural environment in which potential participants find themselves. The existence of social network capital and other socio-cultural factors may influence their behavior. Consequently, there is need to know what explain the participation in a credit program in Côte d'Ivoire - demand side- such as to enable an understanding of how to increase low-income households' access to credit. In other words, what poor people's borrowing from MFIs or others sources? What explain the phenomena observed with households in credit union? Is the credit too expensive? Or is it because of lack of information about their services? Or, are MFIs too far from the areas that poor people live? In short, what are the factors influencing households participation in microfinance credit program?

In this paper, we investigate on the determinants of credit program participation. The main goal of this study is to know the factors influencing the households' decision to borrow from MFIs. Second we try to explain what justify the lower preference for credit or the lower demand for credit from credit union. For conducting our study, we take as evidence Côte d'Ivoire.

Motivation for the study

The motivations of this study are at several levels. Firstly, at the academic level where, in contrast to the large volume of theoretical research on credit markets, the empirical literature is surprisingly scarce. This situation is partly due to the lack of reliable micro-level data on borrowing and lending in developing countries. Only few researchers attempt to analyze what determine the household access to credit, particularly rural households. All emphasize on the fact the motivations exist and they could explain the households' participation in credit program provided by the microfinance.

Second, since the objective of microfinance is to allow the poor and low income people to access credit, higher rate of participation ought to be observed. But, a contrast exist between the expectation and the realization of the objective; leading to lower rate of credit participation. Most studies analyze this as credit rationing and they study the household's behavior under this situation. Some authors give as explanation that the credit products don't meet the demand for credit by households (Meyer, 2002)[1]. In our point of view, they don't take into account the presence of social networks and the cultural environment of potential borrowers.

Finally, this study could be helping the policy makers in the reformulation of credit policies. Microfinance managers will know key variables influencing the demand for loan and those explaining observed preference.

2. Microfinance industry in Côte d'Ivoire

Country profile

Located on the Gulf of Guinea, Côte d'Ivoire (which means "Ivory Coast") is a West African country bordering the North Atlantic Ocean between Ghana and Liberia. It made up of the savannah zones in the (north), the forest zones in the west and south. She has a population of about 18.6 millions, which has been growing at about 3.5% per year. 51% of the population is men and 49% are women. 55% of the population lives in rural areas and 45% in urban areas (Human Development Report 2007/2008). The population

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[1] He called this "the demand for flexible microfinance products".

includes 5 major ethnic groups: the Kru, Akan, Volta, Mande(South and North), and Malinke, inhabiting both the savannas and rain forests.

Côte d'Ivoire is ranked 164th out of 177 countries in the Human Development Index. The poverty rate in 2006 was estimated at 43.2 per cent in the report on poverty published in 2007, based on a poverty line of XOF 162 800 per capita in annual expenditure. Poverty is most severe in the rural savannah (54.6 percent) and the eastern rural forest (46.6 per cent), followed by urban areas apart from Abidjan (33.8 per cent), the western rural forest (24.5 per cent) and Abidjan (11.1 per cent). It is particularly harsh in the northern savannah and in the rural forest.

Macroeconomic and Policy Environment

Côte d'Ivoire has experienced widely varying phases of economic growth over the last few decades. After being considered as middle-income country during the 1970s, it was subsequently reclassified as a highly indebted and poor country (HIPC). The economy rests essentially on agricultural resources. Agriculture employs 66 per cent of Côte d'Ivoire's workforce and contributes 70 per cent of export revenue. Cash crops, mainly cocoa and coffee, account for nearly 50 per cent of agricultural value added. Gross domestic product (GDP) stood at US$ 16.8 Billion in 2005. Côte d'Ivoire's per capita GNP of US$900 in 2005 is much lower than the average per capita income level of US$1,998 for Sub-Saharan Africa (UNDP, 2007).

Côte d'Ivoire has focused on poverty reduction as the core of its development strategy. She has a program of poverty reduction since June 1997. The government of republic II has decided to make the poverty reduction the priority axis to its economic and social program.

Ivoirian's financial sector as well as the developing countries financial sector is characterized by the limited outreach of the commercial banking system, which operates with a high urban bias. Banks are located in the capital city, with just a few or no branches at all in the rural areas. The rural people and the excluded urban people (low income people) resort to informal financial source to satisfy the needs. Between the formal and informal financial sector, there is the semi formal sector. Microfinance institutions belong

to this sector. The development of this sector is due mainly to failure of governmental banks to finance the rural people and the difficulties to mobilize the savings from informal activities.

The overall policy framework for microfinance is informed by the poverty reduction strategy, which seeks to balance growth and macroeconomic stability with human development and empowerment in such a way as to positively impact the reduction of the country's poverty levels in the medium term. The benefit that microfinance provides to low-income households and microenterprises has positive implications for the overall economy.

Microfinance sector

The first institution was found by the government and was called "Caisse Rurale d'Epargne (CREP-COOPEC)" in 1976. It worked essentially in rural areas. In 1995, the extended to urban areas and its name changed to UNACOOPEC-CI. The microfinance sector exists since long years ago, but its regulation guiding its operating came into effect only in 1994. The PARMEC law was instituted in 1994 in view of providing a legal framework for mutual organizations, savings and credit cooperatives and their unions and federations. The PARMEC law does not apply to *tontines* or other informal savings groups, but these groups are free to apply for recognition under the law. This law was adopted on 3rd July 1996 UEMOA member countries.

In Côte d'Ivoire, Five (5) structures evolve for the good development and promotion of this sector through a control and monitoring. These are the National Commission for Microfinance, the Direction of Microfinance, and the work group for Microfinance, AISFD-CI and BCEAO.

Around 70 organizations in Côte d'Ivoire provide a support to micro business owners, household credit. The sector is dominated by one type of MFIs the credit and saving union which is characterized by the mutual funds and cooperatives. The statistics in 2005, demonstrates this 73 against one (1) structure with convention signed with the government. In total, there are 74 MFIs in 2005. The leading structures are UNACOOPEC-CI and RCMEC and represented 90% of MFIs activities in Cote d'Ivoire.

The COOPEC network has 106 offices in activities during the year 2005 on all national territory and mobilizes 52 billion FCFA[i] of saving and 17 billion FCFA of outstanding net loan. And RCMEC has 51 offices, 3.1 billion FCFA of saving and 1.3 billion FCFA of outstanding net loan. There are no NGOs and other types (village banks, and Grameen Bank replications) evolving in the sector.

An examination of the office geographical repartition on territory shows a higher density in the «Lagunes » area.in effect, the "LAGUNES" region where the economic capital is, totalizes 69 offices, i.e. 35%. Some regions such as WORODOUGOU, N'ZI-COMOE, SUD-COMOE, DENGUELE and BAS-SASSANDRA have between one (1) and four (4) offices; the percentage is between 0.5% and 2%. Others have a percentage comprised between 3% and 10%. The remark is most of MFIs are implemented in the forest areas given the economic activities and the coffee cocoa culture in these areas. This unequal distribution is accentuated between rural and urban areas. The latter concentrates 60% of MFIs in Côte d'Ivoire

Concerning the resources, Savings constitute the mainly resources of the MFIs. They provide a relatively stable means to finance the loan portfolio. Savings outreach in 2005 is 58.900 billion FCFA. In addition to savings, loans provisions and grants, shareholder capital constitutes the main source of funding. Loan outreach is 24.247billions FCFA in 2005. On the figure below, we see the pattern of savings reflects this great preference for savings observed in credits unions.

Figure 1: Evolution of Savings and Loan from 1998 to 2005.
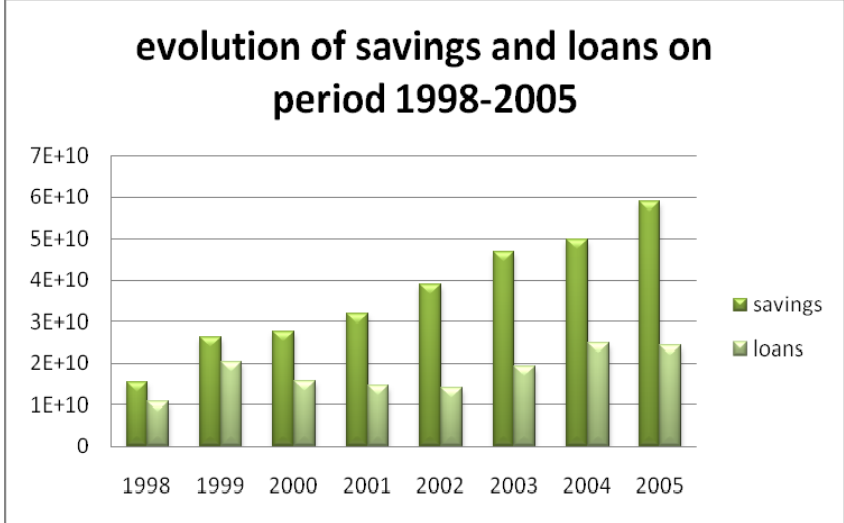
Source : author

The Ignoring context

Some neglected factors could influence considerably the microfinance credit market in Côte d'Ivoire. As Lashley and Lord (2002), we demonstrate that the lack of appreciation of specific contingent circumstances that surround the delivery of microfinance is one of the main hindrances to the success of microfinance. This lack of appreciation concerns:

1-Microfinance institutions represents the hope to access to some form of financial services for microentrepreneurs, other disadvantaged groups and households, often lack professionalism and institution capabilities. There exists a lack of understanding of credit policies, the specific nature and characteristics of poverty. In Côte d'Ivoire, poverty is rural, young, and female. There is a severe lack of targeting specific areas more particularly the remote areas (CNM, 2005).

2- The poor credit culture from formal and semi formal institutions of the population. The population has a great preference from credit provided by parents, friends, relatives, moneylenders,etc. In the literature, borrowing from informal source is the situation where the borrower is rationed from both formal and semi formal source of credit. However, when we take the Ivorian situation, borrowing from the informal source is the first choice. The survey used in this chapter corroborates this. 57out of 1,286households addressed their demand to microfinance institutions. The major part of population turned towards informal sector. They represent 87.1percent.

3- What are the main financial needs of household? Is it credit for production purpose alone or does a multifaceted approach to be implemented (Lashley, 2004). The success in extending and recovering credits to small enterprises has been often based on the determination of actual patterns of demand and the identification the relative levels of risk involved.

The importance of Social capital in the choice of credit source

Social capital refers to the norms and networks that enable people to act collectively (Woolcock and al.,2000). Intuitively, the basic idea of "social capital" is that one's family, friends, and, associates constitute an important asset, one that can be called upon in a

crisis, enjoyed for its own sake, and/or leveraged for material gain. Fox (1996) defines social capital as a social organization, relationship of cooperation and reciprocity, networks and leadership that facilitate collective action.

More generally, social capital's definition depends on which level is considered. For example, at the country level, social capital is viewed as the degree of trust in government or other societal institutions (Fukuyama, 1995 cited in Okten and Osili, (2004)), social cohesion, reciprocity and institutional effectiveness. This includes the willingness to participate in civil society and obey the law and a general efficacy in the workings of civil administration. These definitions are more abstract.

At the community level, Jacobs (1961) posits that social capital exists as 'neighborhood networks,' or as Putnam (1993) (cited in Gomez and Santor (2001)) suggests, it signifies 'features of social life such as networks, norms, and trusts that enable participants to act together more effectively to pursue shared objectives. That is, social capital could be thought of as the extent and quality of connections within communities.

Finally, social capital can be attributed to the level of an individual. As Gleasar, Laibson, and Sacerdote (2002) note that, 'an individual's social capital characteristics include charisma, status and access to networks that enable that person to extract something beneficial to the individual. Grootaert and Van Bastelaer, (2002a) defines social capital broadly as the institutions, the relationships, the attitudes, and values that govern interactions among people and contribute to economic and social development. This definition depicts closely the developing countries' situation.

Social capital plays a great role in the Ivorian context. We use the definition given by Grootaert and Van Bastelaer, (2002a). Therefore, when we talk about social capital, we take as measures a set of social groups in which households evolve. Those groups give some cultural similarities to the potential borrowers. They include ethnic groups. Some Ethnic has a great preference for the loans given by the parents and relatives; hence that influences participation in credit programs. A majority of credit transactions among these groups take place in the informal sector.

Figure 2: borrowing behavior according to the ethnic groups
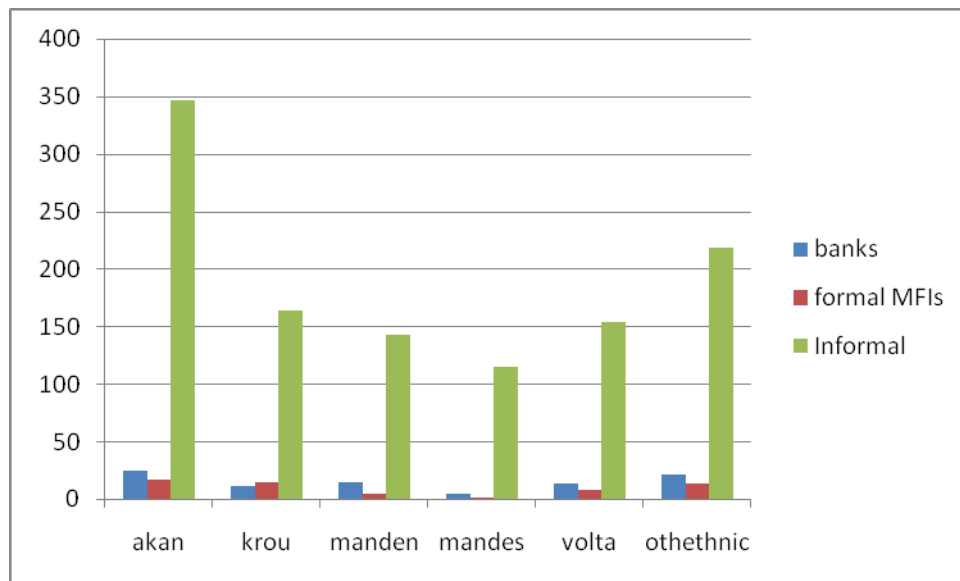
Source: author

At this, we add the degree of trust in MFIs as stipulated by Okten and Osili, (2004). From this development comes our hypothesis: the social capital plays a negative effect on the choice of formal MFIs.

3. Review of literature

Participation and access to microfinance's credit program

Before starting with the study, there is a need to make some limitations. In the literature, access to credit and participation to credit program are used interchangeably. Some authors think that a distinction must be made between the two (Zeller, 1994). Diagne and Zeller (2001) think that there is a difference between access to credit and participation to a credit program. A household has access to credit from a particular source if it can borrow from that source. A household participates if it borrows from that source of credit. Thus, a household can have access but choose not to borrow, i.e., do not participate to the credit market. Participation could be defined as the effective access to credit program.

Most studies have been explained mainly the low rate of participation by the interest rate. Many policymakers assume that borrowers base their decisions on one particular loan component, that is, the interest rate. However, focusing on interest rates alone is not sufficient to explain borrowers' choices for or against a particular financial intermediary (Nguyen, 2006). Ranking lenders according to interest rates and transaction costs only,

implies that borrowers most likely will make use of those lenders with lowest rates and costs. But borrowers' decisions to accept or reject are influenced by other factors as well (Zander, no date, cited in Nguyen, 2006). Some borrowers might be afraid of prohibition or untrustworthiness of the lender because they formerly have had overdue debt. Some others fear refusal due to lack of collateral. Loan duration also influences borrowing decisions - whether it is compatible with the life cycle or not. Some borrowers who are illiterate or have low education find it difficult to cope with the complex procedure of credit applications typical of many formal lenders. .

Diagne (1999) used the concept of credit limit to identify determinants of access to and participation of households in informal and formal credit market in Malawi. His results show that (1) there exists severe credit constraint in Malawi, (2) the composition of household assets is much more important as a determinant of household access to formal credit than the total value of household assets or landholding size. However, landholding size remains a significant determinant of access to informal credit. (3), the unobserved program-specific attributes captured by the program dummy variables are the most significant factors that influence household decisions to participate in a credit program. These unobserved program-specific attributes include the types of loans provided and restriction on their use. There are also other educational and social services provided by the programs.

By using a micro-econometric analysis of household surveys, Duong and Izumida (2002) examined the rural household participation in the Vietnamese rural credit market. The empirical results showed that due to segmentation of rural credit market in Vietnam, households are rational in deciding the sources from which they should ask for particular kinds of loans. It was found that, total farming area and total value of livestock are decisively the determinants of borrowing by households from the formal financial institutions.

Nguyen (2007) applies probit model to estimate credit program participation and Tobit model to estimate loan amount received. By separating the source of loan, he expects that the determinants of credit participation will be different as the eligible requirements for borrowing are different between sources. He specifies credit program participation or the loan size as a function of household characteristics including gender of household head,

age of household head, number of household members, education level of household head, agricultural work, value of house and land holding size; and of commune characteristics including distance from commune to the nearest Government banks and distance from commune to the nearest. His findings are: Number of members in a household is found to have a large and significant affect on credit participation, especially from formal source. Farm work is also significant. Household is more likely to borrow if head of household is working in agriculture or self-business

Despite the success of Microfinance, with a few exceptions, the literature has ignored the social capital impact on Microfinance credit program participation. That lack of attention is changing slowly. In recent years, several papers were written and projects were launched to explore the relationship between Microfinance and social capital.

Participation, social capital in microfinance

The concept of Social capital has been used at several levels in microfinance literature. The area where he has been used most frequently is that of information asymmetric alleviation. The success of the programs of microfinance as Grameen Bank in Bangladesh, BancoSol in Bolivia relies heavily on the notion that borrowers can utilize their social capital to overcome many of the problems associated with asymmetric information in credit markets (e.g., adverse selection, moral hazard, state verification, and contract enforcement) (Gomez and Santor, 2001).

Group membership is an essential tool for screening loan applications and for ensuring that contracts can be enforced (Aryeetey, 2005). Generally, most studies investigate on the role of the social capital on the group lending to reduce the asymmetric information problems. It uses when they talk about the higher rate of repayment. Using data collected from FINCA, Peru, Karlan (2001) finds that social capital generates higher repayment and higher savings. But those analyze do not investigate on the choice of source of credit.

After that, we have Social capital as Information diffusion network which could influence the credit program participation. Consider a given borrower who seeks credit for an investment project or to smooth consumption in the face of adverse shocks to income. For the potential borrower, the decision to apply to a specific credit source for a loan will

depend on the availability of reliable information about lending institutions. Thus family and community provide them this information. That contributes to decrease the search cost. Potential borrowers may learn about lending institutions and credit contracts through community activities and neighborhood meetings, or through informal interactions with neighbors and family members. Family and community networks can facilitate the flow of high-quality information about new credit market opportunities, thus lowering the search costs of the borrower (Okten and Osili, 2004).There is an important theoretical literature that demonstrates how networks can facilitate the circulation of information about market opportunities. Kranton (1996) provides a model in which a decentralized network of pairwise interactions helps agents reduce search costs.

Finally, we have Social capital as source of loan. The network formed by the parents, relatives, neighbors, religious communities, etc, constitutes a cheaper source of credit. The presence of this source constitutes a stronger competitor for microfinance institutions.

4. Research Methodology

Source and Data characteristics

The data used in this research is the households Living Standard Survey conducted in 2002 by National Statistics Institute. The research unit is the household and the people who live in it. The 2002 households Living Standards Survey is a nationwide, multi-topic household survey with modules covering numerous aspects of living standards. It covered 10,800 households living in Côte d'Ivoire. The surveys contain detailed information of households from all regions of country. The household survey has 12 sections. It gathered data on education, health and employment status of household members, household economic activities, income and expenditure, household size and housing, borrowing and lending activities. Concerning the credit aspect, we are retaining only the household who are made a loan demand. Therefore, the sample size in our study is 1,286 households.

Household demographic profile of the 1286 respondents surveyed indicates that the average age of a household head is 43 years and about 84.06% of them fall in the economically active population (ages 18-59). Majority of household heads (53.03%) have no formal education. Approximately 19.75% and 22.55% have low and medium education

level respectively. Male-headed households constitute 82.89%. The average household size is 5.65 persons per household with an average proportion of 82.89% of female and 17.11% for male (Table2). Christianity and adherents to non traditional religion constitute about 39% and 24% respectively and Islam 35%. Majority of sampled households are *Akan* constituting 30.17%. 30.48% of households live in other urban areas (table1).

Table 1: Household socio-economic characteristics

Variable	Percentage (%)
Age composition (%)	
Age (Less than 18 years)	0.23
Age (from 18-59 years)	84.06
Age (+ 60 years)	15.71
Marital Status (%)	
Married	71.77
Unmarried	15.24
Other (divorced, separated, widow, widower	12.99
Education (%)	
No education	53.03
Low education	19.75
Medium education	22.55
High education	4.67
Religion (%)	
Christian	39.11
Moslem	35.93
Other (traditional, no religion, other)	24.96
Area (%)	
Abidjan	16.80
Other urban areas	30.48
Eastern rural forest	16.87
Western rural fores	19.21
Rural savannah	16.64

Source: own computation from 2002 INS Survey Data

Table 2: Household demographic characteristics

Variable	Mean	St dev	Min	Max
Total household size	5.3	4.01	1	30
No. of Females	5.67	3.77	1	18
No. of male	5.64	4.06	1	30
Household head				
Male	82.89	.37	0	1
Female	17.11	.37	0	1

Source: own computation from 2002 INS Survey Data

Low income household descriptive characteristics

The SMIG in Côte d'Ivoire is taken to define the low income households. SMIG is about 36000FCFA. In our sample, 60.34% of households fall under this line. We can call this proportion of households "the poor" or low income households. In addition, the

households can have the similar income but the other characteristics are different. Those specificities could impact on the household credit program participation. The 60.34% of households falling under the SMIG line are composed essentially of economically active households (78.61%). The ranges 25-39 and 40-59 have 35.05% and 35.57% respectively.

Table 3: Percentage of households by income (poor and non-poor) and age groups of household heads.

Age Group (in years)	Income level	
	Low income	Higher income
<=24	8.37	3.53
25-39	35.05	47.25
40-59	35.57	41.57
60+	21.00	7.64
total	100	100

Source: own computation from 2002 INS Survey Data

The tables below give the distribution of the income according to age, gender and education levels. The distribution of range of age according to income supports the life cycle hypothesis. The most of young household and the old household heads are low income. Their percentages are 78.31% and 80.69% respectively.

Table 4: Percentage of households heads age by income (low income and higher income)

Age Group (in years)	Age_24	Age 2539	Age4059	Age 60+
Low income	78.3	53.02	56.56	80.69
Higher income	21.7	46.98	43.44	19.31
Total	100	100	100	100

Source: own computation from 2002 INS Survey Data

The studies on income state that the income level depends on the education. 69.06% of households with no education have a low income. The pattern is the same for the households where the head is low educated .68.9% of this type of households have a low income. The higher education attainment increases the income. So 75% of higher educated households are higher income households.

Table 5: Percentage of households by income low income and higher income) and education level of household heads.

Education levels	Income level (percent)		Total
	Low income	Higher income	
nedu	69.06	30.94	100
ledu	68.9	31.1	100
medu	39.65	60.35	100
hedu	0.25	0.75	100

Source: own computation from INS 2002 survey data

The income can also be influenced by the gender. Some studies think the women are very poor than the man. Our statistics support that. 77.73% of women are poor since they are low income households. However, the part of male is not neglected.

Table 6:Distribution of households by income and gender.

gender	Income level		total
	Low income	Higher income	
female	77.73	22.27	100
male	56.75	43.25	100

Source : own computation from 2002 INS survey data

Statement of dependant variable

The dependant variable was households' choice of financing for their activities. The dependent variable is the source of borrowing. The alternative sources available are: *bank and financial institutions, companies of framing, credit unions, social funds, ROSCAs, private lenders, cooperatives, and others* giving a total eight (8) alternatives. Then, the dependent variable takes several alternatives, and so conventional methods of regression are inappropriate. To ensure a better organization, these alternatives are grouped and reformulated as (0) banks institutions for Banks and financial institutions, companies of framing, social funds; (1) *formal MFIs* which are credit unions; and (2) *informal institutions* for ROSCAs, private lenders, cooperatives and others. The dependent variable is represented by *souborr*. When there is a demand for credit, a household will choose to apply to either a formal institution, public institutions, Credit unions (formal MFIs), or an informal credit institution, depending on their perceived relative probabilities of obtaining credit from each institution. The descriptive statistics of *souborr* are shown in table below.

Table 7: Households' choice of source of borrowing

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    souborr    |     Freq.       Percent(%)                            Cum.
------------ +-------------------------------------------------------------

banks      0|        88          6.84                                6.84
formal MFIs 1|        57          4.43                               11.28
Informal    2|     1,141         88.72                              100.00
------------+-------------------------------------------------------------
     Total  |     1,286        100.00
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Source: own computation from INS survey data (2002)

For *souborr*, the most suitable regression is a multinomial regression.

Definitions of Explanatory Variables

While socioeconomic characteristics such as income, wealth, and education play the largest roles in explaining access, there is clear evidence of the effect of other sets of barriers. Thus, the independent variables are:

Gender of household head: Since there is a positive discrimination in favor of women, we think gender influence a priori the demand of credit to MFIs. This discrimination is due to the fact the higher rate of repayment is observed among women. And also, they are generally poorer than men. Here the variable is *male*. Being a male reduces the probability of participation or the demand for credit.

Education: can influence participation in microfinance credit program. Formal and semi formal sources require more papers to fill. We assume that the probability for a person who is not educated to take loan from formal and semi formal is lower. They avoid them. We make the following hypothesis, households with a good educational level are more likely to choose more formal or semi formal financing practices than less educated ones.

Age . There is negatively correlation between age and the probability of participate in credit program from formal and semi formal.

Timrepaym represents the variable measuring the loan maturity: Longer is the loan maturity more the household demand the credit from MFI. The argument is that lenders lend small amount and have maturity periods that minimize costs, often in a way that make their loans less attractive to businesses. The loan characteristics of microfinance schemes indicate that their loans are comparable to those of most existing informal arrangements. Loan maturities are generally short.

Marital status (Matstat): Marital status could influence the sectoral choice of lending. In other instances, certain spouses prefer work and the wife remains at home.

Households' size (hhsize): the role of households' size can be seen indirectly. The larger the household the greater is its expenditure. The direction of relationship between this and participation in credit program may however be ambiguous.

Use of loan: the households often examines whether there is need to fund their activity by loan when involving in income generating activities, or they need a loans for the education, mortgage, health and consumption purpose.

***Perception (Perc)*:** Households live in an environment where the information exchanged plays an important role. This information influences their perception about credit institutions. Perceptions wonder around: 1.higher own resource, 2.lack of information, 3.lacks of credit structure, 4.higher loan cost. The probability to demand a credit and participation in credit program from microfinance institutions is negatively linked to the perceptions.

***Income*:** income is the key variable observed by the lenders. Depending on the flow of revenue, households can get credit or not. Although, the collateral (physical assets) is not required for some microfinance credit program, we consider income as wealth for the households. This households wealth includes the endowment such as land, housing. Two proxies are used to capture this aspect. Those are Household has a house *(house) and* Household has a land *(land)*. The probability to participate or demand ~~to~~ credit is positively linked to wealth. Since these can be served as a proxy for collateral.

Social capital variables

The social capital will be captured by the ethnicity group of the borrowers and the trust in MFIs.

Ethnicity: Ethnic affiliation which create network is common in Côte d'Ivoire. We would assume the appurtenance to certain groups facilitates the possibility of having a loan. Thus, the hypothesis could be that ethnicity can influence positively or negatively participation in credit program.

Lack of trust(ltrust): The lack of trust impacts negatively on the choice of MFIs as source of loan.

Size of loan(loansize): we assume the size of loans has an impact on the choice of source decision.

***profession*:** This regroups the civil servant , the private informal workers, the students, the unemployed.

Cost of lending

Like any other service/product, the participation in the microfinance credit program is likely to be affected by their price. In such case, holding other factors constant, the higher the interest rate charged, the lower the demand or participation in credit would

be observed. However, we are unable to capture the impact of interest rates on the participation in credit as this variable is not consistently captured in the survey. Therefore, no cost variable was included in the empirical model because these variables don't exist in the data.

As stipulated above, the multinomial regression will be implemented to know the determinants of households' participation to microfinance program. Multinomial logistic regression is the extension for the (binary) logistic regression when the categorical dependent outcome has more than two levels. Multinomial Logit models are multiequations models. These models are applied in Educational choice, labor economics in particular the job search, and transportation. The well-known works on multinomial Logit are Hensher (1986),McFadden (1974) on the travel mode of urban commuters; Schmidt and Strauss (1975) and Boskin(1974) on occupational choice among multiple alternatives(cited in Greene, 2002)

In our sample, the data for each household's head consist of following:

- Participation which takes three (3) alternatives: 0 = banks, 1= formal MFIs, 2= informal

- The regressors are constant term, education, age, gender, ethnicity, household size, income, household endowment wealth, use of loans, marital status, perception, profession

5.   Results and Discussion

Estimates of the multinomial logit model are presented in Table A2. The base chosen is informal. The software used is STATA 10 The convectional Wald test statistic follows a χ^2 distribution with 74 degrees of freedom and is significant at 1%. It rejects the null hypothesis that all coefficients are zero. The problem of heteroscedasticity is often present in cross sectional data. In order to avoid this, we are adopting the multinomial robust estimation which that adjusts the z-statistics.

The results for each alternative give: for banks institutions, the variables *loansize, timrepaym* and *house* have positive signs and are significant at 1%, 1% and 10% level of significance respectively. However, *Privinformal, age4059, unemployed,schoolcredit* and

*health h*ave negative and significant signs at 5%, 10%, 5%, 5% and 1% level of significance respectively.

Concerning the formal MFIs, the variables *income_36, income36-100, income101-250*, l*oansize*, *house, married, unmarried, krou,* and *timrepaym* have statistically significant positive effect on borrowing from this source while *pensioner, ltrust,* and *health* have negative effects at 1%, 10% and 5% level.

The predicted probabilities for each source are given as follow: .04469614; 01897264; 0.93633122 for banks institutions, formal MFIs and informal respectively. The predicted probability of informal is greater than those of Banks institutions and formal MFIs. That confirms the fact the informal source is not the last resort source. It demonstrates the higher role of social capital as a facilitator of borrowing in the Ivorian context.

For the further details on how each explanatory variable explains households' choice, we divide the variables into four categories: individual and household characteristics, social network variables, variable related to credit contract and use of loans variables. The marginal effects of the variables are computed.

The effect of individual and household level characteristics

- **Income**

We are dividing income into several modules. This is to capture the effect of low income on the choice of source. The probability to borrow from formal MFIs source increases about 99% than the informal source for all categories. These marginal effects are significant and very higher.

- **Age 4059**

The probability of participating of bank credit program is lower when the household head is aged between 40 years and 59 years. This probability is reduced about 3.17%.

- **Marital status (base is other marital status**)
The probability to choose formal MFIs source is greater for married and unmarried household heads. The positive and marginal effects show that the marital status is not

the requirement to fill before obtained the loans. So, there is no discrimination between the several statuses.

- **privinformal**

When the household head works in the private informal, the probability to choose the bank is lower than the probability of choosing informal. The salaries received justify this probability. In effect, in Côte d'Ivoire as the other developing countries, the salary in the informal is very low. Sometimes, this wage is under the SMIG

- **unemployed**

When the household head is unemployed, the probability to choose bank is lower than the probability of choosing informal. the reason is there is no future revenue from those persons. So they represent the higher risk people and that lead the bank to ration them. Knowledge of that will made the unemployed prefer the informal source.

- **pensioner**

When the household head is pensioner, the probability to choose the microfinance credit program is lower than the probability of choosing informal. The tendency observed in Côte d'Ivoire is they prefer savings products but borrowing from the informal source.

The effects of the variables related to credit contract

- **Timrepaym**

An increase of the time of repayment impacts positively on the choice of credit program from Banks and formal MFIs These marginal effects are significant at 5% level respectively. The positive effect observed means the households take into the time of reimburse the loans before borrowing from one source of credit. if the time of repayment increases and then the probabilities of participating in the formal and semi formal increase.

- **house**

A positive and significant effect on formal MFIs is noticed for *house*. That means the physical wealth as house continues to be used as collateral by some microfinance structures.

- **size of loan**

One amount increase of the loan size increases the probability of choosing the Banks credit program about 9.65e-09. The formal banks means large equity, therefore it would be preferable to borrow from this source if the amount demanded is large.

The social capital effect

- **Lack of trust**

The expected effects on the choice of formal MFIs credit participation have been confirmed for the explanatory variables such as *ltrust*. The lack of trust reduces the probability of choosing formal MFIs about 1.67%.

The effects of the variables related to use of loans

- **Schoolcredit**

When the use of loans is the education expenses, the probability of choosing the banks credit program is low than the informal source. Consequently, the informal source is more adequate for satisfying this need. Sometimes, the borrower must hide the true motivation for having the loan.

- **health**

Loan for health expenses conduct to the low probabilities for choosing the Banks and formal MFIs source than the others motivations. Most of the time, there is no products designated for the health purpose in the microfinance institutions. Consequently, the informal source is more adequate for satisfying this need.

6.   conclusion

Understanding the socioeconomic factors influencing the determinants of households'participation in microfinance credit program is useful for future policy designs. This study attempts to identify the determinants of the choice of source of credit, in particular the determinants of participation in microfinance credit program. Several lessons are drawn. First, microfinance remains the ideal way to provide financial service to the excluded people from formal bank sector. This aspect is verified by the positive marginal effect observed in the case of the low income household choice.

Second, some variables such as lack of trust in microfinance structures, and the sensitivity of households to interest rate contribute to the reduction of probability of household participation in microfinance credit program. Therefore, another lesson drawn from this study is Ivorian microfinance institutions should try to create social capital networks among themselves and between them and borrowers. According to Dowla (2006), the success of Grameen bank rests mainly on the creation of social capital (horizontal and vertical networks). It established new norms and fostering a new level of social trust to solve the collective action problems of poor people's access to capital. That would be important for sustainability of these institutions.

And then, agricultural activities and trade activities do not statistically determine participation in microfinance credit program. But the loan for health purpose impacts on negatively the choice of the microfinance credit program. There is a need to diversify the loans products proposed to the Ivorian household. This is important for avoiding the use of loans for others purposes.

Finally, the time of repayment contribute to increase this probability. Finally, they must apply the flexible time of repayment. In addition, the positive and significant sign observed for the loan size would suggest the size of loans oriented the borrower's decisions.

Reference

Azam, J. P.,Biais, B.,Dia,M., and Maurel, C., (2001), "Informal and Formal Credit Markets and Credit Rationing in Cote d'Ivoire" *Oxford Review of Economic Policy* 17(4):520-534

Aryeetey, E.,(2005), "Informal Finance for Private sector Development in Sub Africa", *Journal of Microfinance* 7(1):13-38

BCEAO, (2005), "situation microfinance" *Monographie Côte d'Ivoire*

_____, (2004), "situation microfinance" *Monographie Côte d'Ivoire*

_____, (2003), "situation microfinance" *Monographie Côte d'Ivoire*

_____, (2002), "situation microfinance" *Monographie Côte d'Ivoire*

_____, (2001), "situation microfinance" *Monographie Côte d'Ivoire*

_____, (2000), "situation microfinance" *Monographie Côte d'Ivoire*

Commission Nationale de la Microfinance (2005), *Rapport Annuel*

Deshmukh-Ranadive J.and Murthy R.K. (2005), "Introduction: linking the triad", *Micrcredit, poverty and empowerment*, SAGE Publication

Diagne, A. (1999), "Determinants of Household Access to and Participation in Formal and Informal Credit Markets in Malawi", *FCND Discussion Paper No 67*

Diagne, A. and Zeller, M, (2001), "Access to Credit and Its Impact on Welfare in Malawi", *International Food Policy Research Institute*, Washington D.C Research Report 116

Dowla, A. (2006), "In credit we trust: buiding social capital by Grameen Bank in Bangladesh", *Journal of Socio-Economics* 35:102-122

Duong,P.B. and Izumida,Y. (2002), "Rural Development finance in Vietnam: A microeconometrics Analysis of Households surveys" *World Development* 30(2):319–335

Fox, J. (1996), "How Does Civil Society Thicken? The Political Construction of Social Capital in Rural Mexico", *World Development* 24(6):119-149

Glaeser, E.L., D. Laibson, and B. Sacerdote (2002) "The economic approach to social capital" *The Economic Journal 112(483)*

Gomez, R. and Santor, E. (2001), "Membership Has Its Privileges: The Effect of Social Capital and Neighbourhood Characteristics on the Earnings of Microfinance Borrowers" *The Canadian Journal of Economics / Revue canadienne d'Economique* 34(4): 943-966

Greene,W.(2003), *Econometrics Analysis,5th* eds., Prentice Hall

Grootaert, C., and van Bastelaer, T. (Eds.) (2002a). "*The role of social capital in development: An empirical assessment*" Cambridge University Press

INS(2002), *Enquête Niveau De Vie Des Ménages*

Jacobs, J. (1961), *The Death and Life of Great American Cities*; New York: Vintage

Karlan, D. and Zinman, J. (2006). "Credit Elasticities in Less Developed Economies: Implications for Microfinance". *Working Paper No 926*

Kranton, R. E. (1996). "Reciprocal exchange: a self-sustaining system" *American Economic Review 86(4)*

Lashley,J.(2004) "Microfinance and Poverty alleviation in Caribean: A strategic Overview" *Journal of Microfinance 6(1)*

Lashley, J., and Lord, K.(2002). "Microfinance in the Caribbean: Experiences and best Practice": *Inter-American Development Bank.*

Meyer, R. (2002), "The demand for flexible microfinance product: lessons from Bangladesh" *Journal of International Development 14(3)*

Nguyen, C.H. (2007), "Determinants of credit participation and its impact on Household Consumption: Evidence from rural Vietnam", Discussion paper 2007/03

Nguyen T. T. P.(2006), "Factors Influencing Access to Credit of Households in Rural Areas of Vietnam Case study of Tan Linh Commune, Ba Vi District, Ha Tay Province", Master Thesis in Rural Development with Specialization in Livelihoods and Natural Resource Management Swedish University of Agricultural Sciences

Okten, C. and Osili, U.O (2004), "Social Networks and credit access in Indonesia", *World Development 32(7)*

Richardson, D., C. (2000) "Unorthodox Microfinance: The Seven Doctrines of Success" *MicroBanking Bulletin 4*

United Nations Developemnt Program(UNDP) (2007), *Human Development Report 2007/2008*

Woller G. (2002a) "From market failure to marketing failure: Market orientation as the key to deep outreach in microfinance", *Journal of International Development*, 14:305-324

Woolcock, M. and Narayan, D. (2002), "Social Capital: Implications for Development Theory, research, and Policy" *World Bank Research Observer 15(2)*

Zeller, M.(1994, "Determinants of credit rationing: a study of informal lenders and formal credit groups in Madagascar" *World Development 22(1)*

APPENDICES
Table A1: Description of variables, measurement units and expected effects for the choice

Variables	Description	Measurement unit	Expectation sign
Income	Total income of household head (FCFA/month)	Number (FCFA/month)	-
Household size	Number of household members	Number	-
Age	Age of household head		
Education		Dummy	NA
No education	head of household has no education		+
Low education	head of household has some primary schooling.		+
Medium education	head of household finished primary schooling or continued to secondary school		+
High education	head of household completed secondary or higher.		-
wealth	Household has an endowment		
Physical weath(house)		Dummy	+
land		Dummy	+
Time of repayment	Is term of loan maturity	number	-
Perceptions	The household has priori on the lenders	dummy	NA
ors	*Household has its own resources*		-
lackinfo	*Households has no information on the credit program*		-
lcs	*Lack of credit structure in household'area*		-
hloancost	*Higher loan cost*		-
lstrust	*Lack of trust in the structures*		-
other	*Other reasons given by the household*		-
Use of loan		dummy	NA
agriactiv	*Activity generated is in agricultural sector*		
Tradeactiv	*The trade activities*		
Schoolcredit			
mortgage			
health			
Marital status	Household is married, single and other	dummy	NA
married			
unmarried			
omastat			
etnicity	Native language spoken by the household.	dummy	NA
akan			
krou			
manden			
mandes			
volta			
other			
Profession			
Civil servant			
Privinformal			
Student			
Pensioner			
unemployed			
Loan size			

Note: + denote a positive effect on the dependent variable, - denote a negative effect on the dependent variable, NA denotes "not applicable"

Table A2: statistics description of explanatory variables

Variable	Obs	Mean	Std. Dev.	Min	Max
hhsize	1286	5.650855	4.011097	1	30
timrepaym	1286	2.77916	4.235231	0	75
house	1286	.5155521	.4999525	0	1
land	1286	.5793157	.493861	0	1
unmarried	1286	.1524106	.3595582	0	1
married	1286	.7177294	.4502794	0	1
schoolcredit	1286	.1726283	.3780726	0	1
Mortgage	1286	.0202177	.1407991	0	1
health	1286	.222395	.4160169	0	1
akan	1286	.3017107	.459179	0	1
krou	1286	.1469673	.3542111	0	1
manden	1286	.1251944	.331068	0	1
mandes	1286	.0940902	.2920677	0	1
volta	1286	.1360809	.3430078	0	1
moslem	1286	.3592535	.4799683	0	1
christian	1286	.3911353	.4881944	0	1
nedu	1286	.1975117	.3982765	0	1
medu	1286	.2255054	.4180773	0	1
hedu	1286	.0466563	.2109837	0	1
agriactiv	1286	.6275272	.4836514	0	1
tradeactiv	1286	.31493	.4646687	0	1
ors	1286	.6531882	.4761404	0	1
lackinfo	1286	.0108865	.1038091	0	1
lcs	1286	.0396579	.19523	0	1
hloancost	1286	.1150855	.3192493	0	1
ltrust	1286	.1041991	.3056375	0	1
age_24	1286	.0645412	.2458101	0	1
age2539	1286	.3989114	.489865	0	1
age4059	1286	.3794712	.4854442	0	1
income_36	1286	.6034215	.4893774	0	1
inc_36100	1286	.2293935	.4206063	0	1
inc_101250	1286	.1244168	.3301848	0	1
amloan	1286	1168523	7000765	1000	1.34e+08
civilservant	1286	.0451011	.2076066	0	1
privinformal	1286	.5847589	.4929553	0	1
male	1286	.8289269	.3767193	0	1
student	1286	.2783826	.4483771	0	1
pensioner	1286	.0085537	.0921254	0	1
unemployed	1286	.0186625	.1353827	0	1
male	1286	.8289269	.3767193	0	1

Table A3: Results of the estimated Multinomial Logit model

```
Multinomial logistic regression                    Number of obs = 1286
                                                    Wald chi2(74) = 216.36
                                                      Prob > chi2 = 0.000
Log pseudolikelihood = -441.95681                     Pseudo R2 = 0.1966
```

souborr	Coef.	Robust Std. Err.	z	P>|z|	[95% Conf. Interval]	
Banks instit.						
inc_36	-1.247711	1.92937	-0.65	0.518	-5.029207	2.533786
inc36100	-.5908645	1.863149	-0.32	0.751	-4.242569	3.06084
inc101250	.1402418	1.827617	0.08	0.939	-3.441821	3.722304
hhsize	.0232424	.0302013	0.77	0.442	-.0359512	.0824359
loansize	2.28e-07***	6.05e-08	3.76	0.000	1.09e-07	3.46e-07
house	.4766526*	.2890698	1.65	0.099	-.0899138	.043219
land	-.0187328	.3460572	-0.05	0.957	-.6969925	6595269
married	-.0458296	.4944698	-0.09	0.926	-1.014973	.9233133
unmarried	.4022664	.5728804	0.70	0.483	-.7205586	1.525091
akan	-.4650794	.3908169	-1.19	0.234	-1.231066	.3009077
krou	-.3058759	.4958683	-0.62	0.537	-1.27776	.6660081
manden	.3314381	.4449288	0.74	0.456	-.5406064	1.203483
mandes	-.5962786	.6429578	-0.93	0.354	-1.856453	.6638956
volta	-.2340464	.4441307	-0.53	0.598	-1.104527	6364337
civilservant	.6276141	.5523619	1.14	0.256	-.4549953	1.710224
pensioner	.4553679	.9984599	0.46	0.648	-1.501578	2.412313
privinformal	-.5708525**	.2835205	-2.01	0.044	-1.126542	-.0151626
nedu	.2037457	.37639	0.54	0.588	-.5339651	.941456
hedu	-1.131845	.7628209	-1.48	0.138	-2.626946	.363257
medu	-.3574642	.4740407	-0.75	0.451	-1.286567	.5716385
agriactiv	.2633974	.5922907	0.44	0.657	-.8974711	1.424266
tradeactiv	-.2466918	.6207938	-0.40	0.691	-1.463425	.9700418
ors	-.3178967	.4564574	-0.70	0.486	-1.212537	.5767433
lackinfo	.2216317	1.320308	0.17	0.867	-2.366125	2.809388
lcs	-.8989004	1.069071	-0.84	0.400	-2.99424	1.19644
hloancost	-.5028274	.6012011	-0.84	0.403	-1.68116	.6755051
ltrust	-.3067145	.5747601	-0.53	0.594	-1.433224	.8197946
male	-.4719145	.4235261	-1.11	0.265	-1.30201	.3581815
age2539	-.2481006	.4223625	-0.59	0.557	-1.075916	.5797147
age4059	-.7877411*	.4158803	-1.89	0.058	-1.602851	.0273693
schoolcredit	-1.001901**	.4641006	-2.16	0.031	-1.911522	-.0922809
mortgage	-1.250646	2.025286	-0.62	0.537	-5.220133	2.71884
health	-1.015305***	.3684645	-2.76	0.006	-1.73748	-.2931273
student	.4603977	.2895704	1.59	0.112	-.1071499	1.027945
unemployed	-7.195077**	3.232262	-2.23	0.026	-13.53019	-.8599595
timrepaym	.0376228**	.0182619	2.06	0.039	.0018301	.0734155
age_24	.2359	.6208193	0.38	0.704	-.9808834	1.452683
_cons	-1.142175	2.109806	-0.54	0.588	-5.277319	2.99297
formal MFIs						
inc_36	16.82191***	1.02621	16.39	0.000	14.81058	18.83325
inc36100	17.08472***	1.142201	14.96	0.000	14.84605	19.3234
inc101250	17.23098***	1.207749	14.27	0.000	14.86384	19.59813
hhsize	-.0220925	.0350521	-0.63	0.529	-.0907934	.0466083
loansize	8.14e-08*	4.20e-08	1.94	0.053	-1.02e-09	1.64e-07
house	.5904946*	.3205175	1.84	0.065	-.0377082	1.218697
land	.5458911	.3829276	1.43	0.154	-.2046333	1.296415
married	1.032585*	.6091789	1.70	0.090	-.1613835	2.226554
unmarried	2.030386***	.6445374	3.15	0.002	.7671155	3.293656
akan	-.0007754	.4252902	-0.00	0.999	-.8343289	.8327781
krou	.8520135*	.4637037	1.84	0.066	-.0568292	.760856
manden	-.5364886	.5742017	-0.93	0.350	-1.661903	.5889261
mandes	-1.799848	1.154076	-1.56	0.119	-4.061796	4620999
volta	-.1695596	.5165845	-0.33	0.743	-1.182046	429274
civilservant	.8889595	.5561997	1.60	0.110	-.2011719	979091
pensioner	-30.18266***	.6991377	-43.17	0.000	-31.55294	-28.81237
privinformal	.1228427	.4086582	0.30	0.764	-.6781126	.923798

```
        nedu |  .6007615   .4040422     1.49    0.137    -.1911467    1.39267
        hedu | -.3488865   .8929665    -0.39    0.696    -2.099069   1.401296
        medu | -.6121669   .5355201    -1.14    0.253    -1.661767   .4374331
    agriactiv |  .2452016   .7529157     0.33    0.745    -1.230486   1.720889
   tradeactiv |   .477366   .7602743     0.63    0.530    -1.012744   .967476
          ors | -.2934899   .4338854    -0.68    0.499     -1.14389   .5569099
      lackinfo |  .8501488   1.215562     0.70    0.484     1.532309   3.232606
          lcs | -1.060206   1.049389    -1.01    0.312    -3.116969   .9965583
     hloancost | -.9025432   .6588474    -1.37    0.171     -2.19386    .388774
       ltrust | -1.462474*   .843776    -1.73    0.083    -3.116245   .1912967
         male | -.4501447   .3786831    -1.19    0.235     -1.19235   .2920605
      age2539 |  .3664035   .5220895     0.70    0.483    -.6568731    1.38968
      age4059 |  .4540868   .5660472     0.80    0.422    -.6553454   1.563519
  schoolcredit | -.5403477   .4874342    -1.11    0.268    -1.495701   .4150057
     mortgage | -.3872611   1.112206    -0.35    0.728    -2.567144   1.792622
       health | -.817936&&   .4043689    -2.02    0.043    -1.610484  -.0253875
      student |  .2778149   .3118313     0.89    0.373    -.3333633    .888993
    unemployed | -.7569673   1.517484    -0.50    0.618    -3.731182   2.217248
     timrepaym |  .0507695**  .020871     2.43    0.015     .009863    .0916759
       age_24 | -1.330649   1.245192    -1.07    0.285     -3.77118    1.10988
        _cons | -21.88683         .        .        .           .            .
-------------------------------------------------------------------------------
(souborr==2 is the base outcome)
```
Note: *** Significant at 1%, ** significant at 5%, *significant at 10%

Table A4: the marginal effects

	Banks Institutions P(y=0)= .04469614		Formal MFIs P(y=1)=.01897264	
	Dy/dx	p-value	Dy/dx	p-value
Income-36	-.0643121*	0.059	.999521***	0.000
Income 36_100	-.0608704	0.296	.981715***	0.000
1ncome101_250	-.0445337***	0.001	.9987653***	0.000
Hhsize	.0010111	0.432	-.0004309	0.514
Age_24	.0118949	0.711	-.0151751*	0.051
Age2539	-.0106818	0.538	.0073242	0.484
Age4059	-.0317981**	0.049	.0096589	0.411
Timrepaym	.0015634**	0.053	.0009131**	0.013
house	.019836	0.112	.0106098*	0.073
land	-.0012506	0.933	.009869	0.153
Unmarried	.0145061	.621	.0819229*	0.083
Married	-.0027185	0.900	.0161263*	0.063
civilservant	.0330945	0.384	.0234849	0.269
pensioner	.0254626	0.693	-.024429***	0.000
privinformal	-.0258379*	0.065	.0027628	0.708
Student	.0213906	0.146	.0050084	0.440
unemployed	-.050739***	0.000	-.0095668	0.522
Akan	-.0183774	0.206	.0003505	0.965
Krou	-.0126694	0.460	.0221124	0.158
Manden	0163592	0.730	0.496	0.255
Mandes	-.0200336	0.264	-.018492***	0.002
Volta	-.0091443	0.602	-0.576	0.743
nedu	.0081516	0.606	.0109597	0.128
Medu	-.0136253	0.424	-.0096139	0.223
Hedu	-.0312492**	0.022	-.0051355	0.685
Agriactiv	.0107383	0.655	.0042313	0.752
Tradeactiv	-.0105291	0.665	.0099931	0.566
Ors	-.0139419	0.516	-.0054086	0.547
Lackinfo	.0091181	0.891	.0236565	0.624
Lcs	-.0266094	0.221	-.0126148	0.133
Hloancost	-.0177126	0.334	-.0121815*	0.080
Ltrust	-.0111231	0.579	-.0167473***	0.008
male	-.0227383	0.333	-.0090992	0.347
loansize	9.65e-09***	0.002	1.32e-09	0.185
schoolcredit	-.0324382***	0.005	-.0080809	0.228
mortgage	-.0321441	0.249	-.0056084	0.706
health	-.0341901***	0.001	-.0120288**	0.022

Note: *** significant at 1%, ** significant at 5%, *significant at 10%