Is Trust a Necessity?

-A case study of group lending within microfinance in the Mbarara district, Uganda.

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Abstract

One reason for poverty is that many people are denied access to financial markets. A new alternative way of providing credit to people living in a vulnerable economic situation is microfinance. Microfinance has often been a success story and one explanation has often been the impact of social capital.

This thesis investigates the relationship between social capital and microfinance. Do individuals and groups with a higher social capital perform better in the context of microfinance; do they receive more loans as implied in theory? The aim is to review the impact of the different dimensions and types of social capital on the success of microfinance. To evaluate this, our study was conducted in the Mbarara district in the southern part of Uganda, in cooperation with The Foundation for International Community Assistance (FINCA). To gather the information we attended 34 group meetings where three members in each group answered our questionnaire. To be able to use the information we use econometric methods.

The results of this study make it hard to draw any general conclusions about the impact of social capital. They indicate that individuals with relatively lower trust are better off in terms of received loans. Higher education and collective action also have a positive impact on the number of loans a participant receives. In terms of number of received loans, it is better to be a man.

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List of abbreviations

BLUE   Best linear unbiased estimators

FINCA   the Foundation of International Community Assistance

GNI   Gross National Income

MFI   Microfinance Institution

NGO   Non-governmental organization

OLS   Ordinary least squares

Sida   the Swedish International Development Cooperation Agency

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1. Introduction

The reality that many of the world´s peoples face today is that they are trapped in a vicious circle of poverty. Poverty is characterized by the failure of people, households or entire societies to have sufficient resources to assure their basic requirement. Of course this is not a desirable state and people wish to escape from their vulnerable living situation. Even though people want and try to escape poverty, they often lack access to the necessary resources to manage this.

One of the necessary resources that poor people lack access to is financial services. Access to credit might be the channel through which they could manage to escape poverty and improve their living standards. This could make it possible even for the poor to improve their small business and in the long run break the vicious circle of poverty.

Therefore there is a strong demand for credit among poor people, but one great problem is that they often lack collateral, and the result is that the formal financial sector does not normally supply the credit that the poor demand. The main reason, is that the sector believes that the small and frequently repeated loans that poor people demand are too risky and have too low potential profitability. A crucial problem for formal moneylenders is also that they often do not have personal knowledge about their clientele, in terms of their activities and characteristics. Because of this, they cannot monitor how the loans are used. Therefore poor people often only have access to the informal financial market, which has better information about their clientele but provides credit at very high interest rates. This phenomenon contributes to the difficulties poor people have in breaking of the poverty trap.

Clearly, there is a need for an alternative way for poor people to get access to credit. One possible solution came in 1976 when Grameen Bank was founded in Bangladesh. This new way of giving poor people access to credit was called *microfinance*. The founder of the bank, Muhammad Yunus, was awarded the Nobel Peace Prize in 2006 for his efforts to create economic and social development.

Microfinance solves the problem of lack of collateral and is therefore widely accepted for its efficient way of supplying credit for the poor. The loans are given to small cooperatives that guarantee repayment when all the members are obliged to repay. If one of the members does not repay, then no one else will have access to repeated loans. This new concept gives people who live in a vulnerable economic situation access to small loans and other financial services.

They can then invest in small-scale self-employed businesses, which increase their income and improve their living standards.

Microfinance has been rather successful and the number of microfinance institutions has increased a lot, especially in the developing world. It makes you ask the question: *What makes microfinance work?* During the last decade, one popular and debated explanation has been the impact of *social capital*. The reason for the growing interest in social capital is that it is useful in explaining different political and socio-economic problems but also because it offers a way to address them. The concept of social capital refers to institutions, relationships, and norms that shape the quantity as well as the quality of the social interactions in a society. Social capital is multidimensional and two important dimensions are trust and networks. The presence of social capital facilitates cooperation among individuals to achieve socially optimal goals and could therefore explain why microfinance works.

1.1 Purpose

Academic research in the area of microfinance is relatively new. Mainstream research often concludes that social capital contributes to the success of microfinance.[1] Therefore we find the connection between microfinance and social capital very interesting, partly due to the fact that social capital is very complex and has different dimensions. The purpose of our thesis is therefore to evaluate, through econometrics methods, the impact of social capital on the designs of the group loans given through microfinance. Since social capital is multidimensional it is important to examine the relationship between the different dimensions and microfinance. Our focus will be on trust and networks but also to examine if any type of trust, such as bonding, bridging or linking social capital, has an impact.

One of the largest microfinance institutions today is The Foundation for International Community Assistance (FINCA). Uganda was the first country in Africa where the

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[1] See for example the following sources for further information about recent research.
Cassar, Alessandra, Crowley, Luke and Wydick, Bruce. (2007) *The effect of social capital on group loan repayment: evidence from field experiments* The Economic Journal, 117 (February), Blackwell publishing, F85-F106.

Gomez, Rafael and Santos Eric. (2001). *Membership Has Its Privileges: The Effect of Social Capital and Neighborhood Characteristics on the Earnings of Microfinance* Canadian Journal of Economics, vol 34, nr 4, Blackwell Publishing, p. 943-966

Olomola, Ade S. (2002) *Social capital, microfinance group performance and poverty implications in Nigeria.* Nigerian Institute of Social and Economic Research (NISER) Ibadan

organization started Village Banking groups. Today the organization is one of the largest microfinance institutions in Uganda with 43,824 clients and 2,379 Village Banking groups (FINCA 2010) and this is the reason why we have chosen Uganda for our thesis, together with the widespread poverty in the country.

1.2 Questions

To evaluate if social capital has an impact on microfinance, this thesis focuses on two questions:

- Do the different dimensions of social capital have any impact on the number of loans received?

- Do the different types of social capital, bonding, bridging and linking social capital have an impact on the number of loans received?

1.3 Background to the situation in Uganda

In order to give the reader a greater understanding of the environment that our focus group is operating in, we start with a short description of Uganda today.

Uganda is a densely populated country with a population of 31. 9 millions (Sida 1 2009) Like in many other sub-Saharan African countries, the population and the development process are highly affected by the HIV/AIDS epidemic. Uganda is also marked by troubled and violent history that has complicated its socio-economic situation in recent decades. Many conflicts have their origin in the great diversification of ethnic groups and the country has faced both dictatorship and guerrilla warfare. This has been an obstacle for to development but lately the situation has become more positive. Still the picture of the development process in Uganda is ambiguous since it is held back by widespread corruption, poverty and lack of infrastructure (Sida 2 2009).

Economic reforms undertaken by the country since the late 1990 have had a great impact on economic growth and poverty reduction (Fan & Zhang 2008 p 467 ff). The growth has taken place in many sectors and therefore the poverty rate has been largely reduced since 1992 (Sida 2 2009), although Uganda is still a low income country with a GNI per capita of 420 US dollars (World Bank 1 2010). It is also clear that the poverty reduction has not been equally distributed across the country's regions and urban/rural areas. The central area of the country has seen a large improvement in infrastructure that the rest of the country has not experienced.

The urban population has experienced the greatest benefits from the economic progress and 95% of all the poor in the country are still in rural areas and live off small scale agricultural activities (Fan & Zhang 2008 p 467ff).

Not only are there still widespread inequalities between rural and urban areas, but also between men and women. Traditionally, women have had a subordinate position in both economic and social situations. Although policy makers have made efforts to raise the status of women in the Ugandan society, inequalities between the sexes are strongly rooted and only limited changes have occurred (Katungi, Edmeades & Smale 2008 p. 1ff).

1.4 Defining poverty

The fundamental problem that microfinance aims to solve is poverty and it is therefore important to know what the concepts means. Poverty can be defined in many ways and the chosen definition will have an impact on what methods and what measures we use to estimate the number of poor people (Gauci 2009 p. 2).

One of the most common ways of defining poverty is when a person, a household or even a total society is living below the minimum standard of living. In this situation, the actors are not able to raise the resources and assets needed to assure a minimum standard of living. The basic needs are therefore not fulfilled and this type of consumption-based poverty actually mostly deals with physical measures of well being (Gauci 2009 p. 2).

Another definition is by Robinson (2009 p. 51), who makes a distinction between extremely poor and economically active poor. Extreme poverty includes not only those who are unemployed but also those who are underemployed. People living in this situation cannot achieve a minimal standard of living and they often suffer from malnutrition. The author also claims that even those who are working, but for such low wages that their purchasing power is too low to enable a minimum standard of living, are included in the term extremely poor. The economically-active poor in turn consist of those who have some form of employment and who are able to achieve the minimum calorie intake. It is the economically-active poor that can have the biggest advantages of microfinance.

The concept of poverty has lately also included the scarcity of basic capabilities such as education, environment, health and participation in development. Poverty is not only unsatisfactory income; it is also the lack of basic capabilities (Gauci 2009 p. 2). One of the main proponents of this view is Nobel Prize winner Amartya Sen, who questions the concept

of just income and living standards as measures of poverty and argues that these components do not matter in their own right. What really matters is the choices and opportunities for a person to lead her life. Sen suggests that functionings and capabilities should be in focus. The first-mentioned refer to what a person actually is able to do or be and the second-mentioned indicate what a person can do or be. He makes it clear though that lack of income can be one of the main reasons for a person's lack of capabilities (e.g. Lister 2004 p. 15f).

2. Theoretical framework

Our theoretical framework consists of three parts, each of them relevant for the subject of this thesis. First, we introduce the credit market and its failures. A logical continuation of this is to explain the concept of microfinance. Finally, we describe the context of social capital and its dimensions.

2.1 Credit

Regardless of how one defines poverty, it is clear that many people today lack access to necessary resources that could help them escape this undesirable living situation. One way of escaping poverty is through financial services. The lack of access to these services is a widespread problem in developing countries. It has been estimated that up to 90 percent of the population in these countries lack access to financial services (Robinson 2001 p. 9).

2.1.1 Poor people and their demand for credit

Obviously, there is a strong demand for credit among poor people and there are several reasons why they demand credit. Ray (1998 p. 531) mention three sources of demand for credit:

- When starting a new production or expanding an existing production line.

- Capital required for ongoing production activity.

- Poor individuals demand credit when something unexpectedly happens, such as an abrupt fall in price of what they sell or an increase in consumption needs due to, for example, illness.

Ray (1998 p. 531) argues that there are three separate markets for the different kind of capital needed. The market which provides capital for new production or for the existing, expanding one is called the market for fixed capital. Capital needed for ongoing production is provided

by the market for working capital. This kind of capital is needed because there is a delay between production costs and sales profits. The last source of demand for credit, described above, is called consumption credit. This kind of credit is the reason why people demand insurance.

Fixed capital is obviously very important for economic development, but Ray (1998 p. 531f) also gives an example where working capital and consumption credit are of great interest. The sector the author refers to is the agricultural one, which is characterized by seasonality. This leaves the people who live and work in the sector exposed to great differences in their income, which often is low. Working capital is therefore very important for production. The seasonality creates uncertainty and this brings the importance of consumption credit into the picture. People with very varying income, due to the seasonality, need credit to smooth their consumption.

According to Rutherford (2009 p. 39f) there are three common ways for poor people to raise substantial sums of money; they can sell assets they already have, they can pledge those assets or try to gather all their small savings into larger amounts.

2.1.2 The failure of the financial market

Although poor people demand credit, they still lack access to it. This indicates that there must be some kind of market failure. The answer is found in the financial market.

In many developing countries, the local financial market often consists of a combination of formal, semi-formal and informal economic agents. The formal financial sector's content can vary depending on country, region and time. This sector does mostly provides the modern/urban sector with its services and consist of many different actors. These can vary between banks, insurance companies, and, in some countries, capital markets et cetera. Even non-bank financial institutions such as credit unions and cooperatives are included in this sector (Robinson 2001 p. 49).

Usually, authors only make a distinction between the formal and informal sectors, but Robinson (2001 p. 49) also defines the semi-formal sector. The actors on this market often operate under special laws and regulations but are usually unlicensed and generally unsupervised. NGOs belong to this category and are, for example, not allowed to organize public, voluntary savings but are allowed to provide microcredit. Another example is private

finance companies. These accept deposits from most of the public sector but they are not allowed to offer all types of deposits accounts.

There are many definitions of the informal market and in this thesis we will use a broad definition; activities and transactions on markets that are not regulated by the state or other formal institutions (Jamison 2003 p. 7).The sector offers opportunities for families and individuals that have scare income opportunities, but the market also consist of actors that want to escape formal regulations (World Bank 2 2010). The informal sector serves a wide range of different sectors, is present almost everywhere and it finances households and enterprises at all levels of income and different geographic areas. The sector is often based on quick transactions, loans that are flexible, personal relationships and individual agents (Robinson 2001 p. 50).

Robinson (2001 p. 50) divides this market into three main components with many variants within each of them:

- Local organizations

- Individual informal commercial moneylenders such as pawnbrokers, professional moneylenders and landlords.

- Relatives, friends and neighbors.

According to Islam (2007 p. 65), the strength of the informal market is that the actors involved in transactions often have some type of previous relationship with each other. These relationships play an important role in lending since collateral is often lacking among poor people. Instead of collateral personal knowledge and social peer pressure are used as guarantees. Also the borrower's past credit documentations are of great importance. The lender can also use flexible interest rate to make adjustments to be able to cover risks and costs.

Recent research indicates that the informal sector is of great importance, both socially and economically, since it provides services that the formal sector tends not to offer. The informal sector creates values similar to what the formal finances do. Usually, new venture capital is only provided from the informal sector. For example the informal sector lends to poor women who frequently borrow very small amounts of money. The sector has been accepted because of its equity and efficiency. In contrast the formal sector tends to have a delay in payments

and the client is sometimes forced to bribe the banks officials to reduce the delay (Islam 2007 p. 65ff).

2.1.3 Difficulties for the poor in the informal market

Still, the problems within the informal sector complicate economic situation of poor people. One of the biggest problems is private moneylenders that charge very high interest rates. In many areas, foremost rural areas, people have very limited information about alternative sources of financial services, limited knowledge about money lending and interest rates and do not often have any other alternatives (Islam 2007 p. 67). Robinson (2009 p. 50) also points out the problem with the very high interest rates of informal lenders which, compared to the interest rates of commercial microfinance institutions, are extremely high. It is not uncommon that the informal moneylenders charge a nominal interest rate from 10 percent to more than 100 percent per month. Some moneylenders even charge higher rates, especially to poor borrowers.

As indicated before, moneylenders tend to have different interest rates for different customers. Poor people are usually not seen as profitable and are therefore charged the highest interest rates. The poor frequently demand small loans which have similar transaction costs to larger loans. Small loans are therefore provided with higher interest rates than larger loans, just to make them equally profitable. A second reason why poor people are charged higher interest rates is that these people often lack access to or information about other options but also that they have very low bargaining power due to their economic situation. Poor people are also sometimes seen as more risky and the moneylender therefore adds an extra premium (Robinson 2009 p. 50).

Sometimes the poorest are even rejected from the informal sector since they are seen as not creditworthy. The high interest rates are unaffordable for these people and this together with other economic and structural circumstances keep the poor confined to the deprivation trap (Islam 2007 p. 69).

2.1.4 The lack of access to the financial market for the poor

There is a strong demand for small loans but the formal financial sector normally refuses to provide this kind of credit for the poorest. A common opinion seems to be that small loans cannot be profitable for banking institutions (Robinson 2009 p. 45). Another explanation could be that formal moneylenders do not often have personal knowledge about their

customers. If the borrowers do not have knowledge about activities and characteristics of their clients they are not able to monitor exactly how the loans are used and the risk of lending to these customers will therefore rise (Ray 1998 p. 532).

Islam (2007 p. 73) describes three reasons why poor people lack access to credit. First there is the problem of *information asymmetries*. If actors, who want to make a transaction agreement, do not have access to the same information before the agreement takes place, the transaction will be implemented on different conditions. The actor who has more and better information will have an advantage which in turn can lead to both *adverse selection* and *moral hazard*. Adverse selection means that a borrower, in this case, represents himself as less risky than he actually is. A bank could therefore not easily determine which customers are safer or riskier. Moral hazard may occur after the transaction when the borrower is not making the full effort to repay what he originally borrowed. The original agreement will thereto not be held. Because of this the lender often requires some collateral and a good credit history of the borrower.

The second reason is that such small loans that poor people demand bring high risks, costs and workload for a bank to offer. Due to this opinion, which is common among banks, these types of loans are seen as low-potential probability ones. The borrowers themselves do not always have a secure income, and have large difficulties actually earning an income; they do not have any assets. An additional problem is that they are expensive to serve with financial services since they often are relatively isolated (Islam 2007 p. 73).

Finally, the third problem is the lack of portfolio diversification (Islam 2007 p. 74); it is risky to lend to just one type of activity. This is more evident among agricultural activities where for example a drought can bring all farmers in one area into a difficult situation at the same time.

Ray (1998) describes an additional problem, namely a fourth problem for the poor:

> *What you have as collateral and the perceived extent to which you value the*
> *future relative to the present determine the degree to which you have access*
> *to the credit market.*(Ray 1998 p 227)

The author states that the credit market might be closed for individuals who have relatively small amounts of collateral. Poor people have a harder time to convince their creditors that they actually will pay their debt obligations. Lenders will only provide a loan if the collateral

is high enough; if the initial wealth is too low the borrower cannot credibly convince the bank to provide a loan (Ray 2007 p. 227ff).

2.2 Microfinance

Studies have shown that poor people want reliable, well-located and flexible ways to accumulate and have access to money. Due to the problems stated above, there is a need of a new, alternative way for poor people to borrow. Microfinance is a new way of delivering loans and is often seen as a way out of poverty. The reason is that microfinance helps to lower transactions costs and to overcome information problems (Armendáriz de Aghion & Morduch 2005 p. 8f).

Islam (2007) states that:

> *...Some of the poor people can exit poverty through the returns from credit-initiated enterprisers, but most of the poor exit poverty through the returns on assets purchased with their voluntary savings. Quality financial services help expand investment and generate income.* (Islam 2007 p. 5)

Microfinance is financial services directed towards poor people. Mostly it includes credit and savings but some organizations also provide insurance and payment services. The definition of microfinance generally includes both financial- and social aspects (Ledgerwood 1999 p.1).

According to the text of Ledgerwood (1999 p. 1), microfinance generally includes the following:

- Small loans that are mostly given as working capital.

- Informal rating of borrowers and investments.

- Substitutes for collateral such as group collateral or obligatory savings.

- The possibility of repeated and larger loans. These are often based on former repayments.

- More efficient loan disturbances and monitoring.

- Secure saving products.

Some microfinance institutions (MFIs) do also provide services such as education that could help their clients to improve their business. The definition of microfinance does not normally include these types of services (Ledgerwood 1999 p. 1).

Ledgerwood (1999 p. 1f) further describes who provides microfinance. This could for example be nongovernmental organizations, government banks, commercial banks, cooperatives or nonbank financial institutions.

Microfinance brings many benefits for the poor compared to loans on the other types of credit markets. The main advantage of microfinance is the possibility of receiving a group based loan where members work as each other's collateral. The group can loan a larger amount which is then repaid frequently in small sums and therefore it is possible even for poor borrowers to repay their loans. If the group, as a whole, shows a good repayment schedule, it can get access to larger repeated loans and other financial possibilities (Arun et al 2009 p. 13).

The concept of microfinance also helps to resolve some of the problems that usually close out the poor from the financial market; information asymmetries, low-potential profitability and lack of portfolio diversification. The problem of information asymmetries is solved by group lending since the ones who are seen as risky are excluded from the group and since peer pressure also functions as an incentive to repay in time. The group as a whole is therefore responsible for each other's actions (Islam 2007 p. 73).

MFIs solve the problem of low-potential profitability when they charge market interest rates. This helps to overcome high costs for the MFIs. To be able to assure that the borrowers' businesses are performing well in the long run, and thereto increase their incomes and abilities to repay their loans, many of the MFIs also provide technical guidance and instruction which in turn may increase the knowledge and capabilities of the borrower (Islam 2007 p. 73f).

The problem with portfolio diversification is partly solved by microfinance, due to the fact that the group members engage in different types of activities. Still, the problem of unexpected situations, for example natural disasters, remains. Microfinance also contributes to portfolio diversification when each borrower is responsible for every member's debt. If one member fails to pay the other members are obligated to pay his debt and therefore the risk for the lender will be lower since the risk is spread out among many individuals (Islam 2007 p. 74).

2.3 The context of social capital

Lately, there has been a growing academic interest in social capital since it is useful in explaining different political and socio-economic problems but also because it offers a way to address them. Could the answer to the success story of microfinance be found in the context of social capital?

In the disciplines of social capital there is a wide range of authors and views, especially concerning how social capital is created and how to categorize it. Therefore it is hard to recognize any true meaning of social capital and many definitions of social capital are used. With regard to the purpose of our thesis we have chosen to give the reader a broad and general picture of the concept and our aim is not to explain how social capital is generated. Due to the complexity of social capital, we focus on a more understandable concept; trust.

2.3.1 Defining social capital

Traditional capital has been defined as the contribution to productive activity made by investment in physical capital and human capital. Human capital refers to for example general education and training and examples of physical capital could be machinery, tools, facilities and offices (Dolšak & Ostrom 2003 p. 275). This traditional view of capital has changed and a new type of capital, social capital, is now considered as having an enormous impact on economic development, especially in developing economies (Castiglione, Van Deth & Wolleb 2008 p. 373). The first to introduce the concept of social capital was the sociologist James Coleman in 1988, although similar thoughts can be traced back to earlier literature (Muriisa 2009 p. 31). Coleman defined social capital as people's ability to work together in groups and organizations for a common purpose and thought of social capital as a factor of production beside human and physical capital (Tinggard Svendsen 1998 p. 1).

Social capital is a very complex concept with many definitions. The World Bank describes social capital as:

> *Social capital refers to the institutions, relationships, and norms that shape the quality and quantity of a society´s social interactions. Increasing evidence shows that social cohesion is critical for societies to prosper economically and for development to be sustainable. Social capital is not just the sum of the institutions which underpin a society- it is the glue that holds them together.* (World Bank 3 2009)

2.3.2 Social capital on different levels

Social capital exists at all levels of the society; national level, community level and on an individual level. On the national level social capital refers to trust in government and other institutions (Gomez & Santos 2001 p. 946) which include the promise that everyone is treated equally in front of the law (Castiglione, Van Deth & Wolleb 2008 p. 373f). It also includes the willingness of the people to participate in community activities and obey the law (Gomez & Santos 2001 p. 946).

On the community level social capital mainly consists of social networks, norms and trust, which hypothetically lead to coordination among the members to achieve common goals more efficiently. This level of social capital can therefore be seen as the quantity as well as the quality of interactions among the members in the community (Gomez & Santos 2001 p. 946).

The individual characteristics of social capital can be associated with an asset in the social context. For example this can be a person's charisma and access to social networks. These are properties that make it possible for individuals to benefit from integrating with other individuals (Gomez & Santos 2001 p. 946).

2.3.3 Dimensions of social capital

As well as different levels, different dimensions of social capital can be identified. The World Bank identifies five dimensions of social capital; *group and network, trust, collective action, social inclusion* and *information and communication.*

Group and network

Networks and organizational support are necessary for linking the social capital. The result of people's ability to organize themselves, which rests upon social capital, makes it easier to solve common issues and to mobilize recourses. How effective a group is, is based on the structure, the membership and how it works. When an organization is effective it makes it easier to disseminate information, facilitate decision making and reduces the risk for opportunistic behavior (World Bank 4 2009).

Trust

Trust has a great influence on attitudes towards other human beings and facilitates interaction between people. In societies with widespread trust between people and against the institutions, it is easier to conduct transactions and implement changes (World Bank 4 2009). Trust in those in your close surrounding, the people you know, is called bonding social capital

and trust in those outside your close surroundings is known as bridging social capital. (Lundåsen & Pettersson 2009 p. 127). These types of social capital will be described in a following section.

Trust is required when a group of people must co-operate their actions to achieve a common goal. The lack of trust on the contrary can lead to the fact that the collaboration does no takes place even if all parties would benefit. Therefore trust is important for an agreement to take place. If each party believed that the others would break the agreement from the beginning then each party would in fact break the agreement from the start (Dasgupta 2005 p. 2, 7).

Trust is largely based on whether you feel that you can rely on the promise of other people. What makes a promise credible depends on if the involved parties care about each other enough (Dasgupta 2005 p. 2) Countless transactions between people originate from the fact that people care about each other and that they believe that other people care about them, but also the fact that they trust one another to keep their promises (Rothstein 2003 p. 15).

Then, what makes a promise credible? Dasgupta (2005 p. 5) points out that there is often an external enforcer who makes sure that promises and contracts are kept. The government has often such a role; a credible government ensures that laws are followed and that if someone violates them, they will be punished. An external enforcer can also be other institutions and organizations, at a lower level than the state, that ensure that contracts are kept.

There are societies where there are no external enforcers present. This does not mean that agreements and trust do not exist but instead come from the residents. In many communities in Sub Saharan Africa much of the economic life is created in the absent of a legal framework and social norms therefore play an important role. The basic idea is that if individuals deviate from an agreement they will in the end punish themselves when this kind of behavior is not socially accepted. To solve the problem of credibility in the communities that lack an external enforcer, social norms of behavior must be established (Dasgupta 2005 p. 6).

A social norm is a rule of behavior that the members of a community follow and if everyone acts in accordance with the norm then it must be in everyone else's interest to also act according to the norm. To prevent people from breaking the norm, this has to be associated with a punishment. This means that if you break the norm you will suffer a greater personal loss than you would if you stick to it, which gives an incentive to follow the standard. The

punishment requires though that it is not only those who violated the agreement that are affected but also those who fail to punish them. It is this chain that makes the punishment credible (Dasgupta 2005 p. 6f).

Collective action

Collective action does not have a well-defined meaning and is used in many different contexts. It often requires collective action by a group of individuals to get access to services. The purpose of these actions varies between societies. It could for example be used for providing public services but also for improving governance and accountability through for example lobbying (World Bank 4 2009).

Social inclusion

Social inclusion is characterized by a desire to collaborate to solve common problems and achieve common needs. It also helps to resolve differences in a peaceful manner. Thereto it helps to remove informal and formal barriers that prevent people from participation and increases the access to opportunities (World Bank 4 2009).

Information and communication

The core of social interaction is communication and information. From a development perspective, the information that flows between the different levels of society is very important. This dialogue gives the civil society a channel for an exchange of ideas and knowledge. An open dialogue is also essential to strengthen the sense of fellowship in the community. A lack of this can lead to mistrust and suspicion. In communities where social capital has a negative impact, a dialogue can offset this impact and increase the trust (World Bank 4 2009).

2.3.4 Bonding, bridging and linking social capital

As well as the different dimensions of social capital there are also different types of the concept. A key distinction is between bonding, bridging and linking social capital, which is often used in analysis of what causes economic and social conditions, for example poverty (Muriisa 2009 p. 38).

Bonding social capital

This type of social capital refers to the connections among people who share the same characteristics (Woolcock & Sweetser 2002 p. 26). This indicates that you, for example, share the same ethnic background or religious view, belonging to the same organization or

belonging to the same community. The trust within these bonding networks is based on knowledge of other members and is called "thick trust". These networks could also exclude people who are not members and also limit the options for the members. It could mean that economic recourses and new ideas from the outside will be limited. In the long run this could result in increased poverty (Muriisa 2009 p. 37ff). A simplified definition of bonding social capital is trust in those in your close surrounding (Lundåsen & Pettersson 2009 p.127).

Bridging social capital

Bridging social capital refers to relationships between distant friends, colleagues and associates (Muriisa 2009 p. 38). A definition made by Woolcock & Sweetser (2002 p. 26) is that the concept also refers to people in the economic situation as you. These connections are based on "thin trust", when there is limited knowledge about the other parties. Bridging social capital can work as a link to external resources, since limited devotion to common network values makes it easier for a member to integrate with others outside the network (Muriisa 2009 p. 38). To simplify this definition, bridging social capital refers to general trust in those outside your close surrounding (Lundåsen & Pettersson 2009 p.127).

Linking social capital

Linking social capital, which is a kind of bridging social capital, refers to vertical relations between organizations, groups and individuals. Common for these relations is that they exist between people at different power levels in the society, for example people in a community and an authority. If there is a widespread trust in state institutions, this trust is likely to spread to trust in others (Muriisa 2009 p. 40).

2.4 The impact of social capital on microfinance

Social capital brings many benefits to a society and is very valuable to invest in because it increases with use. The ability to collaborate to achieve a common goal is based on the quality and quantity of interactions between parties in a society. Social capital affects the welfare of everyone in a society but it is especially beneficial for the poor because it can work as a substitute for human and physical capital. Therefore social capital creates economic avenues for poor people and helps communities to grow economically. In societies that lack a sufficient formal safety net, relations to people in the close environment could work as a substitute for this (World Bank 5 2009).

In general social capital has a big influence on the economy especially when the market is failing in some way (Castiglione, Van Deth & Wolleb 2008 p. 375). One example is that

social capital helps to reduce the transaction costs and therefore makes economies work more efficiently (World Bank 5 2009). The higher level of social capital the higher the private economic gains will be for the individual (Gomez & Santos 2001 p. 946). It is important though to be aware that social capital can be a hindrance to economic development when group interests are not in line with society's overall interest (Castiglione, Van Deth & Wolleb 2008 p. 374).

Social capital appears to have an impact on actors in the society and society at large. For the purpose of this thesis it is interesting to distinguish the impact on the outcome of microfinance. Social capital between groups helps to mobilize resources such as increasing access to more formal credit systems, for example microfinance programs (World Bank 5 2009). Social capital does not only help poor people to get access to the programs but it also plays an important role for the outcome. Castiglione et al (2008 p. 468) states that the connection between local social networks that consist of associates, who trust each other, has a major impact on the success of microfinance. These connections have been an important channel through which an economy could reduce the impact of the failure of the financial market and make the economy more efficient, especially in developing countries.

Information sharing and collective actions that exist between members of a network have many positive outcomes. Foremost social capital helps to solve the problem with information asymmetry and also contributes to lower the transaction costs. Trust between parties that are interacting makes a third supervising party unnecessary and therefore the transaction costs are declining. Eventually the decreased transaction costs and the level of trust lead to aggregate benefits (Hjøllund & Tinggard Svendsen 2000 p. 3)

Through the horizontal relationship between group members, group lending can solve the problem of information asymmetry. When they work as a group, the connections between the members contribute to overcome the problem of hidden information but also problems of collective repayment through peer pressure (Castiglione, Van Deth & Wolleb 2008 p. 376).

Dolšak and Ostrom (2003 p. 275) argue that adverse selection and moral hazard can be avoided when people involved in microcredit projects can choose who to cooperate with. They then choose people that are trustworthy and have a personal knowledge about. This selection of group members promotes group homogeneity when it comes to land holding, gender and income. Group homogeneity also promotes repayment of the loans, when repayments are encouraged because the group members are required to act together.

2.4.1 Mechanisms

Three important mechanisms where social capital can have a positive influence in the self-employment process in microfinance have been recognized. Social relations are here the active component in social capital. The three mechanisms are defined as; instrumental support, psychological aid and productive information. All these forms of social relations can be thought of as an input in the production function for small-scale self-employed (Gomez & Santos 2001 p. 946f).

Instrumental support, which comes from social capital, can affect performance in different ways. For example this could be when a person that takes part in a microcredit program gets access to capital, which makes it possible to improve an on-going business. Instrumental support also refers to when a small business, which often is the case within microfinance, through social relations gets the possibility to lower its production costs. This because it is often family members or close friends that offer labor for free or below the market price (Gomez & Santos 2001 p. 946).

Through psychological aid, social relation prevents persons from ending up in vulnerable situations and improves businesses. The lack of social relations makes the individual worse off because if you lack these kinds of relations you are more likely to suffer from unemployment and depression. Social contacts can prevent personal problems like stress and emotional problems and have a positive influence on effort and motivation (Gomez & Santos 2001 p. 947).

Social relations have a great effect on the access to, and spread of, productive information. These can in turn help to improve the return from self-employment. Productive information can be anything from ideas, knowledge about local competition and whom to trust in business relations. Social relations can mean a growing and more trustworthy customer base but it can also make those that are involved in microfinance programs, with a wide range of local social contacts, more sensitive to the supply and demand relations in the area (Gomez & Santos 2001 p. 947).

3. Data and Method

The aim of this chapter is to give the reader an understanding of how the empirical and analytical part of this thesis is conducted. The empiric is gathered in autumn 2009 in cooperation with the microfinance institution The Foundation for International Community

Assistance (FINCA) in the Mbarara district, Uganda. We gathered the material by attending 34 meetings together with field officers from FINCA. It is important to have knowledge about the institutional context that our focus group is operating in, therefore a description of FINCA is necessary and follows below. This is followed by a description of the method and its limitations.

3.1 FINCA

FINCA International was founded in 1984 by John Hatch in South America. Hatch wanted, together with his colleagues, to create an alternative to the existing rural credit system. This was the first initiative to start the organization. Today FINCA has grown to an international organization that operates in four continents with its base in Washington. FINCA is not part of any religious, political or governmental organization. The main idea behind the organization is to give small loans foremost to women to improve their existing business and to improve the quality of their lives (FINCA 2006 p. 11).

3.1.1 FINCA Uganda

FINCA started to operate in Uganda in 1992, as the first country of the continent, and is nowadays one of the biggest microfinance institutions in the country (FINCA 2006 p. 11). They strive to accomplish the following statements:

> *Mission statement: To improve financial services to Uganda's lowest income entrepreneurs so that they can create jobs, build assets and improve their standard of living.* (FINCA 2006 p. 3)

> *Vision statement: To serve more low-income entrepreneurs than any other MFI in Uganda while operating on commercial principles of performance and sustainability.* (FINCA 2006 p. 3)

FINCA offers a range of different loans. They have individual loans with high collateral, village group based loans and the newest addition which is called FINCA Junior account (FINCA 2006 p. 11). For the purpose of our thesis we only focus on the group based loans.

The group based loans target low-income people with an ongoing business and therefore work as working capital loans. Before a group qualifies for a loan, they must undergo a training period in which they meet once a week for at least six weeks. Other requirements they must fulfill are that they have a commercial bank account and that each member have saved a minimum of at least 10 percent of the requested loan amount. The members act as borrowers

as well as managers of their own loans. As managers they can approve or deny new members and as borrowers they are jointly responsible for repayments of the loans. Each group has a chairman, a treasurer and a secretary (FINCA p. 11, 17).

When a group takes its initial loan at FINCA, they receive a so called normal loan (Bulikiro 2009). The amounts of the normal loans depend on the location of the group and the economic activity in the operating area (FINCA 2006 p. 11). This type of loan is on group basis but the total amount is divided into individual loans and therefore also different repayment schedules (Bulikiro 2009). The amount received by each member depends on the individual requirements which FINCA then will evaluate in terms of capability of the business and its returns. Based on this evaluation FINCA will decide if the desired amount will be granted, otherwise the organization itself will decide which amount each individual will receive. The amount for the next loan will also be based on previous repayment of the individual (O. Lule 2009).

The normal loans are taken in cycles of four, five or six months. Regardless of how long the loan cycle is, the rate is 3.5 percent per month and the repayments are made weekly, bi-weekly or monthly (FINCA 2006 p. 17). When a group first starts up they are required to meet weekly to ensure repayment and the functioning of the group. FINCA strives to make these appointments monthly since it is more cost- efficient for them. This is hard to implement since it requires the members to pay a larger amount each time they meet (O. Lule 2009).

Members are also obliged to save a certain amount which they cannot deposit until the ongoing loan is fully repaid and groups are not entitled to a new loan until the previous one is fully repaid. If the group as a whole exhibits a good ability to repay (larger repaid sums and faster repayments than expected), they are entitled to larger repeated loans. It is also possible for individuals who distinguish themselves, both in terms of participation and repayments, to take specific individual loans, which need to be approved by all the other members (FINCA 2006 p. 17). The purpose of these loans is either to pay school fees or for specific purposes of their activities. These loans have an interest of 3 percent per month (Bulikiro 2009). Members are jointly responsible for repaying each member's loans, both the normal loan and the special ones. If one member fails to repay, other members must step in as creditors (FINCA 2006 p. 17).

3.2 How to measure social capital

Because of the abstract nature of social capital and its many definitions there is a wide range of measuring methods. Due to this there is no consensus of how to measure social capital (Social Capital Research 2009).

In line with this Fukuyama (2001) states that:

> *One of the greatest weaknesses of the social capital concept is the absence of a consensus on how to measure it.*
> (Fukuyama 2001 p. 12)

Therefore there is not just one "true" way of measuring social capital. The choice of method depends on how one defines social capital, the dimensions, community, networks, organizations, trust etc. The method depends, as well, on the aim of the study and what level it is conducted on. Cleary, it is not easy to measure social capital. The methods are many, both combinations and different types of qualitative, quantitative or comparative methods are in use (World Bank 6 2010).

Due to the purpose of this thesis we have chosen to use a quantitative method consisting of a questionnaire (Appendix 1) with its questions based on an individual level.

3.2.1 Reviewing the questionnaire

The questionnaire used in this thesis is based on standard questions for measuring social capital used by World Bank, Hjøllund & Tinggard Svendsen and Holm & Nystedt.[2] It should be noted that the different sources use similar or the same questions in their surveys. The emphasis of this thesis lies on trust and networks and therefore the main part of the questions handles these topics.

First of all a set of questions (1-6) to characterize the sample are applied. In order for the reader to evaluate the sample, questions about gender, age, education level, income and business characteristics are identified. The question about income has been developed in cooperation with FINCA Mbarara, related to their clientele's income level.

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[2] The questions are taken from the following sources: Hjøllund, Lene & Tinggard Svendsen, Gert (2000). *Social capital. A standard method of measurement.* Department of Economics- The Aarhus school of business. Aarhus Holm, Håkan & Nystedt, Paul. (2005). *Trust in surveys and games- a matter of money and location?.* Department of Economics- Lund University, Lund and the World Bank´s *Instrument of the Social Capital Assessment Tool.*

The next set of questions (7-13) deal with trust. Questions about trust in general are taken from Holm & Nystedt and Hjøllund & Tinggard Svendsen and questions about trust in the village/neighborhood are taken from the World Bank. The Hjøllund & Tinggard Svendsen questions about trust in the legal system, the police, the administration and the government are used to explore "trust in institutions".

This is followed by questions (14-18) regarding networks and social inclusion taken from Hjøllund & Tinggard Svendsen and the World Bank. Only one question about social inclusion is included in the questionnaire (18.9).

The next section (19) handles questions about civic action and is taken from Hjøllund & Tinggard Svendsen.

The concluding section explores questions about information and communications, regarding accessibility to different sources, for example post office and telephone. These questions are taken from the World Bank.

3.2.2 The sample

To gather the data, we took part in 34 microfinance group meetings in cooperation with FINCA Mbarara. We required three responses per group and received a total of 102 individual responses. The individuals were randomly selected at the meetings, and often selected by the field officers.

3.3 Analysis method

To be able to analyze the questionnaires we use statistical methods; multiple linear regression analyzed with the method of ordinary least squares (OLS). From the cross-sectional data we have gathered, our aim is to analyze the relationship between social capital and the number of loans received by the groups. We are especially interested in what role the different dimensions, but also the different types, of social capital play.

3.3.1 Multiple linear regression

To analyze relations between economic variables and to be able to draw conclusions from these we use econometric methods. A multiple regression analysis is a method used to describe the relation between one dependent variable (Y) and a number of explanatory/independent variables (x_{ki}). The regression analysis gives us information about how a change in an independent variable will affect the dependent variable (Westerlund 2005 p. 137f).

$$Y = \beta_1 + \beta_2 x_{2i} + \beta_3 x_{3i} + ... + \beta_k x_{ki} + e_i$$

The equation above represents an econometric model, which is divided into one systematic – and one random part. The systematic part consists of k number of independent variables (x_{ki}) where the coefficient of slope (β_k) indicates the change of the conditional mean of the dependent variable (Y) given a unit change in the independent variable (x_{ki}), given that all other variables are kept constant (Westerlund 2005 p. 138). To be able to predict the values of β_k we will use the method of OLS because the estimators of OLS are BLUE (best linear unbiased estimators) (Gujarati 2006 p.174)

β_1 is the intercept of the model (Westerlund 2005 p. 138) and e_i is known as the error term, or as random variable because its value cannot be known before the regression is conducted. This error term represents the influence of variables that are not included in the model. It also represents the randomness in human behavior. Even if all the variables that have an impact on the dependent variable are included, there will always be some randomness in the dependent variable, this because human behavior is neither totally rational nor predictable. Errors in measurement may also be represented in this variable (Gujarati 2006 p. 138f).

In a multiple linear regression model, the results of the regression are interpreted given *ceteris paribus*, i.e. the change in one variable when all else are hold constant. If this condition is not met, it is not possible to isolate the effect of only one variable (Westerlund 2005 p. 138f).

3.3.2 The dependent variable

The dependent variable (Y) is set out to be the total number of loans each group in this thesis' sample, has received. This variable indicates how successful the specific group is in terms of repayments and efficiency. It consists of three different types of loans; normal loan, special loan and school fee loan, which are all describe in a previous chapter. Information about the loans was given by the administration of FINCA Mbarara (Bulikiro & O.Lule 2009).

3.3.3 The independent variables

The aim for our study is to investigate the impact of social capital on number of received loans. The independent variables (x_{ki}) will consist of question asked in the questionnaire; demographical aspects and the different dimensions of social capital. The demographic variables are included to describe the sample but also because we think that they have an

impact on the dependent variable. Therefore the explanatory degree would be higher and the risk of missing an important relationship could therefore be reduced. The social capital variables were transformed into aggregated variables corresponding to the different dimensions of social capital; Trust, Networks, Social inclusion, Collective action and Information and communication. All the social capital variables, including the aggregated, were transformed into dummy-variables responding to high and low social capital.

Gender

The original idea of microfinance was to give women an opportunity to get access to credit. Women often have a secondary position compared to men, in the households as well as in the society, and therefore have even less access to financial credit markets. FINCA mostly has female clients, but there were a few men in the groups we met. The expected impact of this variable is ambiguous, microfinance programs are originally designed for women but at the same time they have a subordinate economic position compared to men. In this context we find the gender variable important and interesting because it tells us whether men or women receive the most loans.

Age

One can assume that authority will come with age. This could in turn have a positive influence on the individual business opportunities but also on the individual position in the microfinance group. With age more life experience and knowledge will follow and more loans could therefore be received. On the other hand at a younger age you are probably more productive and this could have a positive influence on your business. Based on this reasoning we believe that age has an impact on the dependent variable, although it is hard to tell whether the benefits that come with a higher/lower age are the most beneficial ones.

Education

This variable is included because a higher education could bring many benefits to the individual and its business performance. Higher education could bring many advantages for an individual's business such as information about markets and the actors that operate on these et cetera. Therefore one might expect that a higher education would lead to more received loans.

Years in business

Over the years, involvement in business has resulted in accumulated knowledge about the market the individual operates on, about other competitive actors and about consumers. This

could imply that more years in business would mean more received loans because of the improved income possibilities. It is important to remember though that FINCA requires that the group members have an existing business when entering a microfinance group. The variation within this variable might therefore be reduced to some extent since all individuals already have an existing business and therefore quite similar pre-conditions.

Income per capita

The income variable is interesting because with a higher income you could invest in your business, make it grow and therefore improve its return. This would imply that the individual could repay loans more efficiently and better qualify for additional loans.

Trust

To receive repeated loans, but also to repay the loans, group members must cooperate for the group to work efficiently. According to theory, trust among the members is the most important factor for a functioning group. The expected impact of this variable is therefore that a higher level of trust results in more received loans.

Networks

People's ability to organize themselves makes it easier to reach common goals, solve common issues and to mobilize resources. This would imply that a microfinance group, whose individuals have a more developed network, would function more efficient and ultimately receive more loans.

Social inclusion

If an individual is socially accepted it should imply that he/she could have better opportunities to have a successful business and greater repayment possibilities, and therefore receive more loans than individuals that are not socially accepted.

Collective action

To get access to services, collective action is often necessary. In the case of microfinance collective action is necessary in order to get access to loans since members of a microfinance group are obliged to cooperate to receive loans. The higher level of collective action should therefore increase the number of loans received.

Information and communication

This variable refers to the individual information and communication opportunities. Access to

these resources could improve the business because the individual can gain information about for example markets and prices. This variable should therefore have a positive impact on the dependent variable.

Bonding social capital

This variable refers to trust in those in your close surrounding. To obtain this variable, we aggregated selected questions under the topics of trust and networks, which deal with this type of social capital. Trust in members in your group could therefore be seen as bonding social capital. Higher bonding social capital should therefore result in a better functioning group with better repayments and opportunity to receive more loans.

Bridging social capital

We aggregated selected questions under the topics of trust and networks, which deal with this type of social capital, to obtain this variable. This type of social capital refers to trust in those outside your close surrounding but also people that are in the same economic situation as you. This type of trust could work as a link to external resources since limited devotion to common network values makes it easier for a member of a group to integrate with others outside the network. Access to more resources could make a business more successful and repayments of microfinance loans could improve. In the long run, this should have a positive impact on the number of loans individuals receive.

Linking social capital

This variable relates to trust between people at different power levels in the society. Selected questions under the topics of trust and networks, which deal with this type of social capital, were aggregated to get this variable. If members of a microfinance group trust formal institutions, it might be an incentive to demonstrate a good repayment schedule and in the end receive more loans.

3.4 Limitations of the method

Every method has its limitations. Although the one used in this thesis is not an exception, we consider the chosen method to be appropriate due to the purpose of this thesis. To give credibility to the thesis it is important to clarify the limitations.

In general there are some problems with using a questionnaire with a few, predetermined answering alternatives. This can be problematic when the respondents use their accumulated life experiences; everyone has an individual frame of reference, which results in the fact that

the answering alternatives could have different meanings for different people. A problem regarding the questions is that some of them are broad and general; therefore there is room for individual interpretation which is not reflected in the answering choice since many of the answering alternatives are very limited (Lundåsen & Petterson, 2009 p. 133).

Another problem could be the meaning of social trust which can vary between and within countries but also on an individual level (Lundåsen & Petterson, 2009 p. 133). In our study the respondents were situated in a limited geographic area. This implies that the difference in interpretation of social trust would be small, and therefore not affect the outcome of the study, although there might still be some individual differences. It might also be the case that our view of social trust differs from the respondents' view. This could have an impact on our analysis.

The questionnaire was conducted in English but most of the group members that were involved in the study did not have sufficient language skills to complete the questionnaire on their own. Accordingly an interpreter was required at most of the meetings. The field officers worked as the interpreter and were not the same at all of the meetings. The different interpretations could therefore have played a role in how the respondents perceived the questions.

Another limitation is that the sample is rather small although it is large enough for econometric methods (see for example Westerlund 2005 p. 59) The sample might not be representative for all individuals involved in microfinance institutions but we can at least draw some conclusions from it.

4. Presentation of results

In this section the aim is to give the reader a notion of the result of the field study. In Appendix 1 a full presentation of the answer distribution of the questionnaire can be found, which corresponds to the explanatory/independent variables that are used in the regression that follows later in this chapter. The figure below illustrates a compilation of the dependent variable, i.e. number of loans received on group basis. The base-line for the dependent variable is the year of 2008, since FINCA started a new data system at that time and therefore we did not have access to older figures. All groups that we met have had an ongoing business since the base-line.

Figure 1
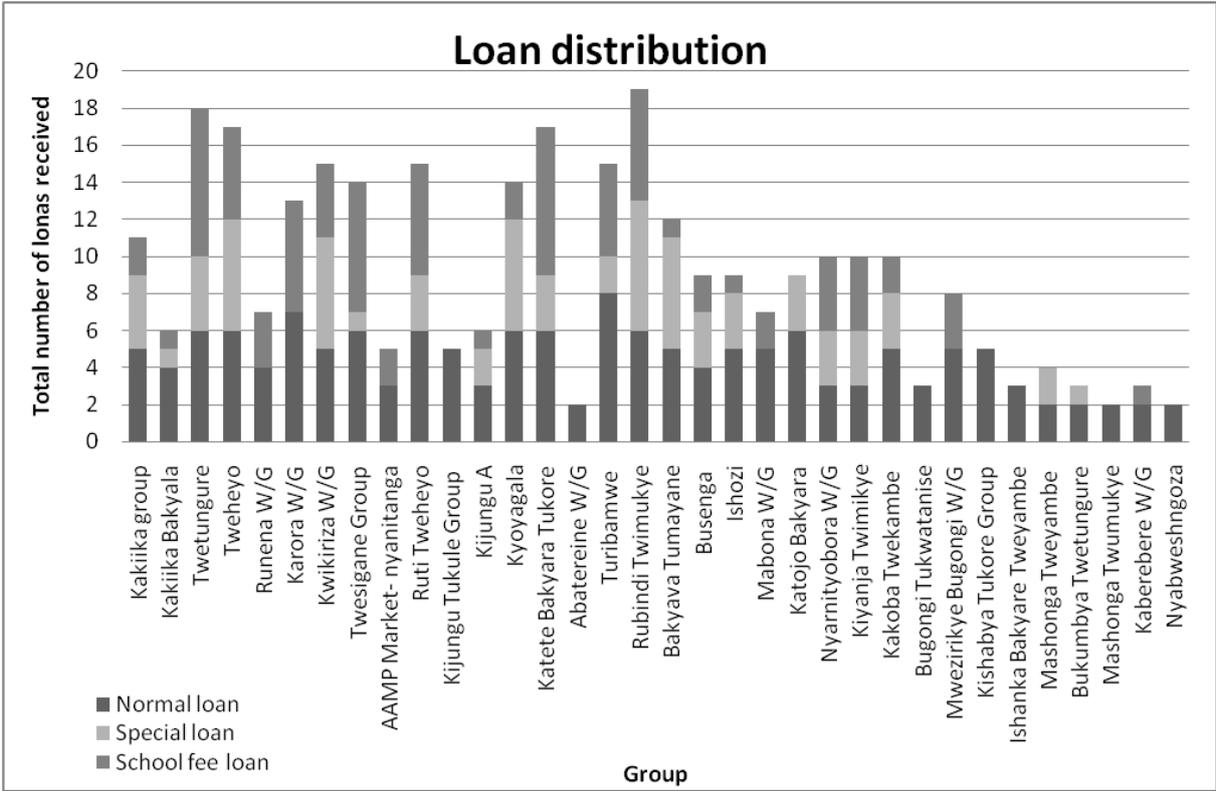
Figure 1: Conducted from the empirical material, gathered in cooperation with FINCA

The x-axis gives information about which group received the loans and the y-axis tells us the total number of loans each group received. Each bar is divided into different sections and corresponds to the different types of loans. The interesting aspect of this graph is that it tells us about the characteristics of the groups, but more important for this thesis, the variation of the dependent variable.

The aim of this thesis is to evaluate the impact of social capital on microfinance, which is done by two different regressions that in turn can be illustrated in two equations. To be able to use the method of ordinary lest squares (OLS) the data have to fulfill the assumptions of the multiple linear regression model (see for example Gujarati 2006 p. 212f). In our case all the assumptions are successfully fulfilled as can be seen in Appendix 2 (corresponding to the material used for regression 1) and Appendix 3 (corresponding to the material used for regression 2). The data have no problems with heteroscedasticity, correlation, inappropriate functional form, autocorrelation or multicollinearity. The method can therefore be seen as appropriate.

The first relationship that we test, Equation 1, is the impact of demographic variables and the different dimensions of social capital on the number of loans received.

Equation 1:

Number of received loans= β + β_1Gender + β_2Age + β_3Education + β_4Number of years in business + β_5Income per capita + β_6Trust + β_7Networks + β_8Social inclusion + β_9Civic action + β_{10}Information and Communication + ε

Table 1 below gives a summary of the variables and their expected value. This is followed by the regression.

Table 1

Variable	Definition	Expected impact
Gender	Female/Male. Male is represented by a high value and female by a low.	+/-
Age	Age.	+/-
Education	Highest completed education level.	+
Years in business	Number of years in business, more or less than five years.	+
Income per capita	Average income per capita in Ugandan shilling, on a yearly basis.	+
Trust	The aggregated trust held by the individual. Defined in the terms of high or low trust.	+
Networks	The size of an individual's network. Defined in terms of big or small.	+
Social inclusion	Feeling of acceptance in the society. Defined in terms of high or low acceptance.	+
Collective action	Individual participation in social activities. Defined in terms of high or low participation.	+
Information and communication	The access to communication and information. Defined in the terms of high or low access.	+

Table 2

Dependent Variable: Number of received loans				
Method: Least Squares				
Sample (adjusted): 1 96				
Included observations: 48 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	16.02264	6.516075	2.458940	0.0187
GENDER	2.714158	1.663034	1.632052	0.1112
AGE	-0.063112	0.816299	-0.077315	0.9388
EDUCATION	1.982861	0.978097	2.027264	0.0499
YEARS IN BUSINESS	0.965041	1.585111	0.608816	0.5464
INCOME PER CAPITA	0.123634	0.664776	0.185978	0.8535
TRUST	-4.936622	1.570962	-3.142420	0.0033
NETWORKS	-3.585214	3.022720	-1.186089	0.2431
SOCIAL INCLUSION	-7.060935	4.853424	-1.454836	0.1541
COLLECTIVE ACTION	2.753639	1.523359	1.807610	0.0788
INFORMATION AND COMMUNICATION	-0.885757	2.056668	-0.430676	0.6692
R-squared	0.403492	Mean dependent var		9.354167
Adjusted R-squared	0.242274	S.D. dependent var		5.196110
S.E. of regression	4.523083	Akaike info criterion		6.054315
Sum squared resid	756.9563	Schwarz criterion		6.483132
Log likelihood	-134.3036	Hannan-Quinn criter.		6.216365
F-statistic	2.502766	Durbin-Watson stat		0.972395
Prob(F-statistic)	0.020789			

From the beginning the sample size was set to 102 individuals but after processing the data a great loss appeared. As seen in the table above the sample size was reduced to 48 observations. The loss appeared not because of incomplete questionnaires, but because problems arose about the coding of some of the variables corresponding to social capital. All the individuals that once or more answered *"I don´t know"* and *"Hard to answer"* were excluded from the material. This because all the variables are coded into dummy variables responding to high or low social capital and we cannot say that this answering alternative is either high or low social capital. Therefore only individuals that are sure if that they have a high or a low social capital are included. Although a great loss is not desirable, the sample is still appropriate since econometric method states that a sample that has more than 30 observations can be seen as appropriate (see for example Westerlund 2005 p. 59).

The regression above is significant at $\alpha = 0.1$ and approximately 24.2 percent of the variation in the number of loans received (y-variable) are explained by the regression. The chosen regression has eleven explanatory variables; three of these are statistically significant, *Education*, *Trust* and *Collective action* (marked with grey).

The regression shows that the individuals that received the most loans are those that are relatively better educated, have a low level of trust and have higher collective action. These results can be deduced from the coefficient of slope (β). In the regression above this means that individuals with higher education receive on average two more loans than the study's participants with a relative lower education. Individuals with low trust, compared to individuals with high trust, receive on average five more loans. Finally, individuals with high collective action receive on average one more loan compared to the study's participants with low collective action.

Since the aim of this thesis also is to evaluate the impact of the different types of social capital; bonding, bridging and linking social capital, of the number of received loans, an additional regression is conducted. The following equation is used for the analysis.

Equation 2:

Number of received loans= β + β_1Gender + β_2Age + β_3Education + β_4Number of years in business + β_5Income per capita + β_6Bonding social capital + β_7Bridging social capital + β_8Linking social capital+ ε

Table 3 below gives a summary of the variables and their expected value. This is followed by the second regression.

Table 3

Variable	Defintion	Expected impact
Gender	Female/Male. Male is represented by a high value and female by a low.	+/-
Age	Age.	+/-
Education	Highest completed education level.	+
Years in business	Number of years in business, more or less than five years.	+
Income per capita	Average income per capita in Ugandan shilling, on a yearly basis.	+
Bonding social capital	The trust in those in the respondent´s close surrounding. Defined in terms of high or low trust.	+
Bridging social capital	The trust in those outside the respondent´s close surrounding. Defined in terms of high or low trust.	+
Linking social capital	Trust in an authority. Defined in terms of high or low trust.	+

Table 4

Dependent Variable: Number of received loans				
Method: Least Squares				
Sample (adjusted): 1 99				
Included observations: 64 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2.742629	3.657451	0.749874	0.4565
GENDER	2.903133	1.358395	2.137180	0.0370
AGE	0.085588	0.694004	0.123325	0.9023
EDUCATION	2.188464	0.965746	2.266087	0.0274
YEARS IN BUSINESS	0.589318	1.373241	0.429144	0.6695
INCOME PER CAPITA	-0.121775	0.618612	-0.196853	0.8447
BONDING SOCIAL CAPITAL	1.124701	2.729827	0.412004	0.6819
BRIDGING SOCIAL CAPITAL	-2.417652	1.328320	-1.820083	0.0742
LINKING SOCIAL CAPITAL	0.606121	1.268631	0.477776	0.6347
R-squared	0.218051	Mean dependent var		8.968750
Adjusted R-squared	0.104313	S.D. dependent var		5.086455
S.E. of regression	4.813857	Akaike info criterion		6.110575
Sum squared resid	1274.527	Schwarz criterion		6.414168
Log likelihood	-186.5384	Hannan-Quinn criter.		6.230175
F-statistic	1.917139	Durbin-Watson stat		0.664758
Prob(F-statistic)	0.075713			

After adjusting the data 64 observations remained. The regression is significant at $\alpha = 0.1$ and approximately 10.4 percent of the variation in the number of loans received (y-variable) are explained by the regression. Three of the independent variables are significant at the chosen level of α; *Gender*, *Education* and *Bridging social capital*. Men receive on average almost three more loans than women, individuals with a higher education level receive on average one more loan than individuals with a lower education level and individuals with low bridging social capital receive on average one more loan than participants with high bridging social capital.

Even if the demographic variables are the same in the two regressions, the significant variables are not entirely the same nor do they have the same coefficient value. The explanation is found in two different sources. First, the sample size is different in the two regressions; the first has 48 observations and the second 64. Second, it is not necessarily the same individuals in the two samples, since not all questions are included in the aggregated variables of bonding, bridging and linking social capital. The loss is therefore not the same in the two regressions.

5. Analysis

The aim of this thesis is to evaluate social capital's impact on microfinance. For this section we have used a combination of theory, the quantitative study and the gathered experienced from working with FINCA.

When we analyzed our first regression we were a bit surprised when only three variables out of 10 were significant and especially when only two variables corresponding to social capital were significant. Perhaps, this could be explained by the limitations of our method. After adjustments, our sample was rather small and this could of course be a limitation when making our regression. The questions could also have different meanings for different people and some questions also left room for individual interpretation. The meaning of social trust can vary between individuals and that is of course a great implication for our analysis. Could we have missed including variables, for example demographic variables, and therefore connections that could have been of importance for explaining our questions?

Returning to our results; we did not find it so surprising that the variables Education, Trust and Collective action were significant. The result that lower trust is positive, in relation to the number of received loans, was quite unexpected since it contradicts the mainstream theory on the subject, which states that social capital and especially trust are the key to the success of microfinance. The aim for microfinance is to target the poor population that often lacks a higher level of education. Our results could therefore be seen as quite bad news for microfinance institutions.

The explanation why education has a positive impact on the success of microfinance could possibly be found in the advantages that follow with a higher education. With a higher education one can assume that you have more knowledge and information about how the society works and how parties interact with each other. An individual could therefore have better knowledge regarding where to find information about for example prices of his/her commodity, markets where this could be sold, where customers might be found et cetera. The individual would therefore have an information advantage compared to other actors. Because of this, a higher educated individual might be more competitive. When one undergoes an education one could also gain a larger network and higher status which might help to gain a better reputation et cetera.

Following theory, our result that low trust has a positive impact on microfinance is quite surprising as stated before. The result tells us that a lower trust will give more loans which seem a bit contradictious. The answer could perhaps be found in the relationship between FINCA and the different banking groups. The groups may have low trust in other people in the society but higher trust in an external enforcer, in this case FINCA. Although linking social capital was not significant (in our second regression), the result from our survey shows that the respondents in general have fairly high confidence in the administrative power in the society. In the extension this trust might be applied to FINCA. FINCA works as an external enforcer that makes the group work and makes sure that the repayments are made. The feeling we got during the field study strengthen this assumption. The meetings rarely went smoothly and members were often missing. It was repeatedly the field officer that made sure that the members showed up and that the loans were repaid, at least in our opinion. One further aspect that implies that the groups did not function was that FINCA's goal that the groups should be self-driven and self- regulated is not fulfilled. For example, FINCA's aim is that the groups should meet on a monthly basis instead of weekly or biweekly, which is the case today.

It should not be excluded that FINCA also have an interest in having a large lending volume. The interests they charge are quite high, especially for poor people. This implies that FINCA makes a profit and hopefully this is reinvested in new loans. Within the organization there also seemed to be a hierarchy and a competition between the field officers to have the best groups in terms of repayment. Sometimes we experienced that some of the field officers asked us about the performance of the other officers' groups etc. This might be an indication of competition among them.

This is not an exhaustive answer to the question why people with lower trust receive more loans. One further explanation might be that people with lower trust present themselves as creditable among their group members. To become a member of a microfinance group you need the acceptance from other members and you also need their support to receive special/extra loans. Their strategy is based on the other member's naivety but their intension is not to harm the other by not repaying their loans. With this strategy, the aim might be to benefit from the privileges received through special loans and school fee loans. Although there might be individuals that do not trust the members of their group, they might be willing to take the risk of other members not being honest and who fail to pay back their loans because there are no other alternatives ways of receiving credit than through a microfinance institution.

The second significant variable corresponding to social capital is collective action. Within microfinance institutions, groups need to collaborate to achieve common goals; in this context this foremost means the ability to receive more and new loans. Even if all the members do not trust each other, they have to collaborate because they have a common goal they all want to reach. We consider this to be the strength of the group. Above, we discussed the possibility that people with lower trust created a strategy that was based on other member's naivety. Maybe the case is a bit different; people involved in microfinance all live in a very vulnerable economic situation with few options available to improve their situation. Microfinance activities are often the only option to receive credit and all members therefore eagerly want to succeed. Even if you are aware of other member's strategies or intentions, you are willing to accept these to get access to credit. Because the group has a common goal they all co-operate even if their individual incentives are different. When the members co-operate they will perform better and this in turn facilitates achieving their common goal; in the long run they receive more loans. However, this does not explain why people with lower trust receive more loans.

In our second regression we found some interesting results. As in the previous regression the education variable, as well as the variables of gender and bridging social capital, were significant.

The reason why it is more beneficial to be a man if you want to receive more loans could be explained by their superior position in the Ugandan society. A man is often the head of the household, even in financial terms. In relation to women's economic position in the household (they might not even have access to their own income) a man is often favored since he is often in charge of the household's gathered income. Following this reasoning, it might be easier for a man to have better repayment documentation and therefore qualify for additional loans.

Men's superior social and economic position may also affect the other significant variables such as education and collective action. Men could therefore have better opportunities to better and higher education but it might also be more socially accepted for men to take part in social activities. These are variables that, as we have already seen, have a positive impact on the number of loans received within microfinance.

One of the active mechanisms in social capital is instrumental support, which can affect performance in different ways. One example is when family members offer labor for free and therefore the production costs are lower. Since men often have a superior position in the

household, and over the resources, they could more easily have their family members working unpaid. Therefore men's repayment schedule could be better than women's.

Another possible situation could be that even if it is the women that are involved in microfinance it is in reality their husbands that decide over the repayment. If the husband is in control of the household's finances and if he does not have any incentives to see that the loans are replayed, maybe the wife will not have access to money to repay her loans. It is important to remember that it is the group members that work as the collateral and not the family. This could mean that women in the end receive fewer loans. This situation actually occurred during one of the meetings we attended. After a long argumentation between the field officer and a female member, it emerged that it was in fact her husband that prevented her from repaying her loan.

Members that have lower bridging social capital receive more loans than those with a relative higher bridging social capital. This type of trust refers to people outside your close surrounding, for example people that you have limited knowledge about. It also refers to people that are in the same economic situation as you. In that sense one explanation could be that individuals have a low bridging social capital because it is not profitable to trust these people, since they have very little to offer you. Hypothetically, with a high bridging social capital responsibility might follow. Many people in developing countries lack access to formal security nets and therefore personal contacts are important. Sometimes you might be in a situation where you must rely on people outside your our close surrounding for economic assistance. These ties work in the other direction as well. If you have a high bridging social capital you might have a larger amount of people that rely on your assistance. Therefore you sometimes have to share your assets more often and in the long run you might have less capability to repay your loans.

The other variables that are included in our models were not statistically significant, although we thought that they would have an impact. In our questionnaire we emphasized network importance by including a range of question within this topic. In theory as well networks have a central role. Therefore we were surprised when the variable was not statistically significant. As whit the other variables that were not statistically significant, it is hard draw any conclusions from these results. Many of the variables are not even close to being statistically significant and due to the small size of our sample there is a risk that conclusions drawn from these results could be misleading.

6. Conclusion

The aim of this thesis is to evaluate social capital's impact on microfinance, which is done through the following questions: *Do the different dimensions of social capital have any impact on the number of loans received?,* and *Do the different types of social capital; bonding, bridging and linking social capital, have an impact on the number of loans received?*

To sum up; the results of this study make it hard to draw any general conclusions about the impact of social capital. We find that social capital does matter though. In this thesis the conclusions that are made are that it matters in a different way to what our theory suggests. Trust is important for microfinance but individuals receive more loans if they have a lower level of trust. Collective action had a positive impact just as we thought. The other variables in our regression corresponding to the other dimensions of social capital turned out not to be statistically significant and therefore we are not able to draw any conclusions from them.

Bridging social capital has an impact on the number of loans received, although our results contradict mainstream theory when a lower bridging social capital is better in terms of number of loans received. Unfortunately the variables corresponding to bonding and linking social capital turned out not to be statistically significant and therefore it is hard to draw any conclusions from them.

Due to our results suggestions for future research could for example be to focus more on the other aspects of social capital and put this into other contexts than is done today. It would be interesting to analyze whether the negative aspects of social capital actually is present more often than we think when it comes to microfinance.

7. Literature list

Printed sources

Armendáriz de Aghion, Beatriz and Morduch, Jonathan. (2005). *The Economics of Microfinance* MIT Press, London

Arun, Thankom, Hulme, David, Matin, Imran and Rutherford, Stuart. (2009) Finance for the Poor. In Hulme, David and Arun, Thankom (2009) *Microfinance A reader* Routledge, Chippenham. p. 7-16.

Castiglione, Dario, Van Deth, Jan W and Wolleb, Gulielmo. (2008). *The handbook of social capital,* Oxford university press

Dasgupta, Partha. (2005). *The Economics of Social Capital,* Beijer, Tryckeri AB

Dolsak, AvNives and Ostrom, Elinor. (2003). *The commons in the new millennium: Challenges and adaptation,* MIT PRESS

FINCA- Village group accounts relationships. Officer´s training & procedures manual. 2006

Gujarati, Damodar N. (2006). *Essentials of Econometrics,* Mc Graw Hill, New York

Holm, Håkan and Nystedt, Paul. (2005). *Trust in surveys and games- a matter of money and location?* Department of Economics- Lund University, Lund

Hjøllund, Lene and Gert, Tinggard Svendsen. (2000). *Social capital: A standard method of measurement,* Department of Economics-The Aarhus school of business, Aarhus

Hulme, David and Arun, Thankom (2009). *Microfinance A reader,* Routledge, Chippenham

Islam, Tazul. (2007). *Microcredit and Poverty Alleviation,* Antony Rowe Ltd, Chippenham

Ledgerwood, Joanna. (1999). *Microfinance handbook: an institutional and financial perspective,* The World Bank, Washington D.C.

Lister, Ruth. (2004). *Poverty,* MPG Books, Bodmin, Cornwall

Lundåsen Susanne och Petterson, Thorleif. (2009). Att mäta tillit – teori och metodprobelm. In Trägårdh, Lars. (et.al.). *Tillit i det moderna Sverige- Den dumme svensken och andra mysterier,* SNS Förlag, Stockholm. p. 112-147

Muriisa,Roberts. (2009). *The AIDS Pandemic in Uganda – Social Capital and the Role of NGOs in Alleviating the Impact of HIV/AIDS*, VDM Verlag

Ray, Debraj. (1998). *Development economics,* Princeton University Press, Princetown

Robinson, S. Marguerite. (2009). Supply and Demand in Microfinance. In Hulme, David and Arun, Thankom, *Microfinance A reader* Routledge, Chippenham. p. 45-64

Robinson, S. Marguerite. (2001). *The Microfinance Revolution Sustainable Finance for the Poor,* The World Bank, Washington D.C.

Rothstein, Bo. (2003). *Sociala fällor och tillitens problem,* Första upplagan, SNS Förlag, Stockholm

Rutherford, Stuart. (2009). The need to save. In Hulme, David and Arun, Thankom, *Microfinance A reader* Routledge, Chippenham. p. 36-44.

Tinggard Svendsen, Gert. (1998). *Social capital, economic and transition economies*, Department of Economics-The Aarhus School of business

Verbeek, Maron. (2008). *A Guide to Modern Econometrics*, Third edition, John Wiley &Sons, Ltd,Wiltshire

Westerlund, Joakim. (2005). *Introduktion till ekonometri,* Studentlitteratur, Lund

Woolcock. Michael and Sweetser Anne T. (2002). *Bright ideas: Social capital- The Bonds That Connects*, ADB Review, 34 (2)

Wooldridge, Jeffrey M. (2003). *Introductionary Econometrics: A Modern Approach,* Second edition, Mason, Ohio: Thomson/ South-Western

Electronic sources

Cassar, Alessandra, Crowley, Luke and Wydick, Bruce. (2007). *The effect of social capital on group loan repayment: evidence from field experiments,* The Economic Journal, 117 (February), Blackwell publishing, F85-F106.

Available at: < http://ehis.ebscohost.com.ludwig.lub.lu.se/ehost/detail?vid=1&hid=114&sid=a2ff5a79-98a4-4abf8918fc26d2d68011%40sessionmgr114&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d#db=bth&AN=25751978 > 18 April 2010

FINCA, 2010, available at:
< http://www.villagebanking.org/site/c.erKPI2PCIoE/b.2671211/k.BFD7/Uganda.htm > 9 April 2010

Fukuyama, Francis. (2001). *Social capital, civil society and development*, Third World Quarterly, vol 22, No 1, pp 7-20
Available at: < http://home.ku.edu.tr/~dyukseker/fukuyama-socialcapital.pdf > 3 December 2009

Gauci, Adrian. (Year not available) *Spatial maps- Targeting & mapping poverty,* Working paper. United Nations, Economic Commission for Africa.
Available at: < http://www.uneca.org/espd/publications/spatial_maps_targeting_mapping_poverty.pdf > 21 August 2009

Gomez, Rafael and Santos Eric. (2001). *Membership Has Its Privileges: The Effect of Social Capital and Neighborhood Characteristics on the Earnings of Microfinance,* Canadian Journal of Economics, vol 34, nr 4, Blackwell Publishing, p. 943-966
Available at: < http://www.jstor.org/stable/3131932 > 18 April 2010

Jamison, David. (2003). *Marketing at the Frontier*, Journal of African Business, 4:3, 5-24
Available at:
<http://elin.lub.lu.se/elin?func=record&resid=4280f83c8d15d087cf15e78d869baa19&lang=se&query=all%3A%22Jamison%2C%20David.%22&start=1&sessionId=E3DA8830E9CD6662ABF495E5DA23E027&orgFunc=basicSearch&ftxtOnly=&sdi= > 22 February 2010

Katungi, Enid, Edmeades, Svetlana and Smale, Melinda. (2008). *Gender, Social Capital and Information exchange in Rural Uganda*, Journal of International Development, Nr 20, p. 35-52
Available   at:
<http://elin.lub.lu.se/elin?func=record&resid=ccf8715b9d79da6fb09a9ed5774b9c2b&lang=se&query=all%3AKatungi%2C&start=0&sessionId=86F40C60D04D6188B50B6F17016855DB&orgFunc=basicSearch&ftxtOnly=&sdi=> 29 January 2010

Olomola, Ade S. (2002). *Social capital, microfinance group performance and poverty implications in Nigeria,* Nigerian Institute of Social and Economic Research (NISER) Ibadan Available at: < http://www.csae.ox.ac.uk/conferences/2002-UPaGiSSA/papers/Olomola-csae2002.pdf > 18 April 2010

Shenggen, Fan & Xiaobo, Zhang. (2008). *Public Expenditure, Growth & Poverty Reduction in Rural Uganda*, African Development Review, vol. 20, nr 3, p. 466-496
Available at:
<http://elin.lub.lu.se/elin?func=record&resid=4264528939e27a9c1e0b6294ac849254&lang=se&query=%28all%3AShenggen%29%20AND%20all%3Auganda&start=0&sessionId=E5A18235FFFF234618BC5DD164DDA2B8&orgFunc=basicSearch&ftxtOnly=&sdi=> 23 October 2009

SIDA 1, 2009, available at:
<http://www.sida.se/Svenska/Lander--regioner/Afrika/Uganda/Landfakta/> 4 September 2009

SIDA 2, 2009, available at:
 <http://www.sida.se/Svenska/Lander--regioner/Afrika/Uganda/Lar-kanna-Uganda/> 4 September 2009

Social capital research 2010, available at:
<http://www.socialcapitalresearch.com/measurement.html> 22 January 2010

World Bank, *Instrument of the Social Capital Assessment Tool.* 2009, available at:
<http://siteresources.worldbank.org/INTSOCIALCAPITAL/Resources/Social-Capital-Assessment-Tool--SOCAT-/annex1.pdf> 18 August 2009

World Bank 1, 2009, available at:
<http://datafinder.worldbank.org/gni-per-capita> 1 October 2009

World Bank 2, 2010, available at:
<http://lnweb90.worldbank.org/eca/eca.nsf/0/2e4ede543787a0c085256a940073f4e4?OpenDocument>
2 April 2010

World Bank 3, 2009, available at:
<http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/EXTSOCIALDEVELOPMENT/EXTTSOCIALCA

PITAL/0,,contentMDK:20185164~menuPK:418217~pagePK:148956~piPK:216618~theSitePK:401015,00.html

> 18 August 2009

World Bank 4, 2009, available at:

<http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/EXTSOCIALDEVELOPMENT/EXTTSCIALCAPI
TAL/0,,contentMDK:20461319~menuPK:994404~pagePK:148956~piPK:216618~theSitePK:401015~isCURL:
Y,00.html> 18 August 2009

World Bank 5, 2009, available at:

<http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/EXTSOCIALDEVELOPMENT/EXTTSOCIALCA
PITAL/0,,contentMDK:20185249~isCURL:Y~menuPK:418213~pagePK:148956~piPK:216618~theSitePK:401
015,00.html> 20 August 2009

Word Bank 6, 2010, available at:

<http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/EXTSOCIALDEVELOPMENT/EXTTSOCIALCA
PITAL/0,,contentMDK:20193049~menuPK:994384~pagePK:148956~piPK:216618~theSitePK:401015,00.html
> 27 January 2010

Interviews

Bulikiro, Israel (2009): oral interview 2 December 2009, regional manager of FINCA, Mbarara.

O. Lule, Grace (2009): oral interview 9 December 2009, administrative staff member of FINCA, Mbarara.

8. Appendix 1
Questionnaire – Answer distribution

Defining the sample

1. Gender

Male	31.37 %
Female	68.63 %

2. Age

18-24	6.86 %
25-34	39.22 %
35-44	30.39 %
45-59	20.59 %
60-	2.94 %

3. Highest completed education level

Incomplete Primary or Primary schooling	45.10 %
Secondary schooling	42.16 %
High school	9.80 %
University degree	2.94 %

4. Type of business

Small	53.92 %
Medium	46.08 %
Large	0 %

5. Number of years in business

< 5 years	36.27 %
> 5 years	63.73 %

6. Income per capita on a yearly basis in Ugandan shilling

500.000-1.000.000	51.96 %
1.000.001-2.000.000	24.51 %
2.000.001-4.000.0001	16.67 %
4.000.001-Above	6.86%

Trust

7. Generally speaking, do you believe that most people can be trusted or can´t you be too careful in dealing with people?

Most people can be trusted	67.65 %
You can´t be too careful	32.35 %

8. Would you say that people most of the time:

…try to be helpful	51.96 %
…mostly are just looking out for themselves	48.04 %

9. Do you think most people would try to:

…take advantage of you if they got the chance	59.80 %
…be fair	40.20 %

10. When somebody else is mean to me:

…I go out of my way to be mean back to them	38.61 %
…I let it pass as if nothing has happened	61.39 %

11. How much confident do you have in the following institutions?

Institution	A great deal	Quite a lot	Not very much	None at all	Hard to answer
The legal system	24.51 %	27.45 %	25.49 %	5.88 %	16.67 %
The police	19.61 %	15.69 %	51.96 %	5.88 %	6.86 %
The administration	24.51 %	35.29 %	25.49 %	6.86 %	7.84 %
The government	49.02 %	22.55 %	13.73 %	3.92 %	10.78 %

12. Do you think that in this village/neighborhood people generally trust each other in matters of lending and borrowing?

Do trust	36.27 %
Do not trust	63.73 %

13. Do you think over the last five years the level of this trust has gotten better, gotten worse or stayed about the same?

Better	60.78 %
The same	18.63 %
Worse	20.59 %

Networks

14. Suppose someone from your village/neighborhood had to go away along with their family. In whose charge do you think they would leave their house?

Other family member	54.90 %
Neighbor	30.39 %
Anyone from the village/neighbor for this purpose	5.88 %
No one	8.82 %

15. If you suddenly go away for a day or two, who could you count to take care of your children?

Other family member	71.57 %
Neighbor	22.55 %
Anyone from the village/neighbor for this purpose	0.98 %
No one	3.92 %
Don´t have children	0.98 %

16. Suppose your neighbor suffer an economic loss. In that situation, who do you think would assist him/her financially?

No one would help	2.94 %
Family	28.43 %
Neighbors	13.73 %
Friends	39.22 %
Religious leader or group	3.92 %
Community leader	0 %
Business leader	0.98 %
Police	0 %
Family court judge	0 %
Political leader	1.96 %
Mutual support group to which she/he belongs	7.84 %
Other	0.98 %
No answer	2.94 %

17. People here look out mainly for the welfare of their own families and they are not much concerned with village/neighborhood welfare. Do you agree or disagree with this statement?

Strongly agree	31.37 %
Agree	47.06 %
Disagree	15.69 %
Strongly disagree	4.90 %
No answer	0.98 %

18. Please tell us whether *in general* you agree or disagree with the following statements:

	Strongly agree	Agree	Disagree	Strongly disagree
Most people in this village/neighborhood are basically honest and can be trusted	13.73 %	56.86 %	27.45 %	1.96 %
People are always interested only in their own welfare	38.24 %	33.33 %	25.49 %	2.94 %
Members in this village/neighborhood are always more trustworthy than others	19.61 %	50.00 %	24.51 %	5.88 %
In this village/neighborhood one has to be alert or someone is likely to take advantage of you	22.55 %	44.12 %	31.37 %	1.96 %
If I have a problem there is always someone to help you	42.16 %	48.04 %	7.84 %	1.96 %
I do not pay attention to the opinions of others in the village/neighborhood	23.53 %	11.76 %	46.08 %	18.63 %
Most people in this village/neighborhood are willing to help if you need it	21.57 %	55.88 %	19.61 %	2.94 %
This village/neighborhood has prospered in the last five years	33.33 %	48.04 %	13.73 %	4.90 %
I feel accepted as a member of this village/neighborhood	41.18 %	50.00 %	4.94 %	3.92 %
If you drop your purse or wallet in the neighborhood, someone will see it and return it to you	12.75 %	36.27 %	35.29 %	15.69 %

Collective action

19. In the last three years have you personally done any of the following things?

	Yes	No	Don´t know
Voted in the election	77.45 %	20.59 %	1.96 %
Actively participated in an association	86.27 %	8.82 %	4.90 %
Made a personal contact with an influential person	59.80 %	33.33 %	6.86 %
Made newspapers, radio and TV interested in a problem	35.29 %	63.73 %	0.98 %
Actively participated in an information campaign	43.14 %	49.02 %	7.84 %
Taken part in a protest march or demonstration	14.71 %	80.39 %	4.90 %
Contacted your elected representative	49.02 %	47.06 %	3.92 %
Talked with other people in your area about a problem	78.43 %	13.73 %	7.84 %
Notified the court or police about a problem	43.14 %	53.92 %	2.94 %
Made a donation of money or in-kind	66.67 %	29.41 %	3.92 %
Volunteered for a charitable organization	50.98 %	33.33 %	15.69 %

Information and communication

20. Do you have access to any of the following sources of information and communication?

	Yes	No
Post office	33.33 %	66.67 %
Telephone	95.10 %	4.90 %
Newspaper	67.65 %	32.35 %
Radio	88.24 %	11.76 %
Television	55.88 %	44.12 %

9. Appendix 2

This section illustrates that the assumptions of the multiple linear regression model are fulfilled.

First we illustrate the correlation between the variables.

Covariance Analysis: Ordinary				
Sample: 1 102				
Included observations: 102				
Pairwise samples (pairwise missing deletion)				
		Correlation	Probability	Observ.
AGE	AGE	1.000000	-----	102
COLLECTIVE ACTION	AGE	1.86E-17	1.0000	70
COLLECTIVE ACTION	COLLECTIVE ACTION	1.000000	-----	70
EDUCATION LEVEL	AGE	0.000789	0.9937	102
EDUCATION LEVEL	COLLECTIVE ACTION	0.156772	0.1950	70
EDUCATION LEVEL	EDUCATION LEVEL	1.000000	-----	102
INFORMATION AND COMMUNICATION	AGE	0.022299	0.8240	102
INFORMATION AND COMMUNICATION	COLLECTIVE ACTION	0.115801	0.3398	70
INFORMATION AND COMMUNICATION	EDUCATION LEVEL	0.130446	0.1913	102
INFORMATION AND COMMUNICATION	INFORMATION AND COMMUNICATION	1.000000	-----	102
INCOME PER CAPITA	AGE	0.140844	0.1580	102
INCOME PER CAPITA	COLLECTIVE ACTION	-0.054643	0.6532	70
INCOME PER CAPITA	EDUCATION LEVEL	0.034049	0.7341	102
INCOME PER CAPITA	INFORMATION AND COMMUNICATION	0.025497	0.7992	102
INCOME PER CAPITA	INCOME PER CAPITA	1.000000	-----	102
NETWORKS	AGE	0.008733	0.9320	98
NETWORKS	COLLECTIVE ACTION	0.174188	0.1586	67
NETWORKS	EDUCATION LEVEL	-0.106301	0.2975	98
NETWORKS	INFORMATION AND COMMUNICATION	0.144841	0.1547	98
NETWORKS	INCOME PER CAPITA	0.067432	0.5094	98
NETWORKS	NETWORKS	1.000000	-----	98
NUMBER OF LOANS	AGE	0.143018	0.1516	102
NUMBER OF LOANS	COLLECTIVE ACTION	0.048709	0.6888	70
NUMBER OF LOANS	EDUCATION LEVEL	0.155396	0.1189	102
NUMBER OF LOANS	INFORMATION AND COMMUNICATION	0.148357	0.1367	102
NUMBER OF LOANS	INCOME PER CAPITA	0.062719	0.5312	102
NUMBER OF LOANS	NETWORKS	-0.021832	0.8310	98
NUMBER OF LOANS	NUMBER OF LOANS	1.000000	-----	102
SOCIAL INCLUSION	AGE	0.127224	0.2026	102

SOCIAL INCLUSION	COLLECTIVE ACTION	0.169311	0.1612	70
SOCIAL INCLUSION	EDUCATION LEVEL	0.098828	0.3230	102
SOCIAL INCLUSION	INFORMATION AND COMMUNICATION	0.039118	0.6963	102
SOCIAL INCLUSION	INCOME PER CAPITA	0.060436	0.5462	102
SOCIAL INCLUSION	NETWORKS	-0.070829	0.4883	98
SOCIAL INCLUSION	NUMBER OF LOANS	0.041021	0.6823	102
SOCIAL INCLUSION	SOCIAL INCLUSION	1.000000	-----	102
YEARS IN BUSINESS	AGE	-0.016881	0.8663	102
YEARS IN BUSINESS	COLLECTIVE ACTION	0.162650	0.1785	70
YEARS IN BUSINESS	EDUCATION LEVEL	0.029921	0.7653	102
YEARS IN BUSINESS	INFORMATION AND COMMUNICATION	0.129639	0.1941	102
YEARS IN BUSINESS	INCOME PER CAPITA	0.021744	0.8283	102
YEARS IN BUSINESS	NETWORKS	0.053896	0.5981	98
YEARS IN BUSINESS	NUMBER OF LOANS	0.028604	0.7753	102
YEARS IN BUSINESS	SOCIAL INCLUSION	0.117820	0.2383	102
YEARS IN BUSINESS	YEARS IN BUSINESS	1.000000	-----	102
TRUST	AGE	0.089513	0.4783	65
TRUST	COLLECTIVE ACTION	0.266053	0.0646	49
TRUST	EDUCATION LEVEL	0.108457	0.3898	65
TRUST	INFORMATION AND COMMUNICATION	0.056136	0.6569	65
TRUST	INCOME PER CAPITA	0.195656	0.1183	65
TRUST	NETWORKS	0.180566	0.1533	64
TRUST	NUMBER OF LOANS	-0.171234	0.1726	65
TRUST	SOCIAL INCLUSION	-0.118783	0.3460	65
TRUST	YEARS IN BUSINESS	-0.011111	0.9300	65
TRUST	TRUST	1.000000	-----	65

The correlation coefficient lies between -1 and +1. Two variables are perfectly positive linearly related if the correlation coefficient is +1 and if the coefficient value is -1 this means that the variable is perfectly negatively linearly related (Gujarati 2006 p. 61) As we see in the table above the correlation coefficient of the independent variables is close to zero, therefore the material does not have any serious problems with correlation.

In cases when a regression has a high R^2 but few significant t ratios or high pairwise correlations among explanatory variables, there might be a problem with multicollinearity. Multicollinearity implies that there exists a linear relationship among the explanatory variables (Gujarati 2006 p. 363, 372). This in turn makes it hard to separate the effects of the individual independent variables on the dependent variable (Westerlund 2005 p. 159). As can be seen in the table below, this kind of problem is not present in our material.

Dependent Variable: Number of received loans				
Method: Least Squares				
Sample (adjusted): 1 96				
Included observations: 48 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	16.02264	6.516075	2.458940	0.0187
GENDER	2.714158	1.663034	1.632052	0.1112
AGE	-0.063112	0.816299	-0.077315	0.9388
EDUCATION	1.982861	0.978097	2.027264	0.0499
YEARS IN BUSINESS	0.965041	1.585111	0.608816	0.5464
INCOME PER CAPITA	0.123634	0.664776	0.185978	0.8535
TRUST	-4.936622	1.570962	-3.142420	0.0033
NETWORKS	-3.585214	3.022720	-1.186089	0.2431
SOCIAL INCLUSION	-7.060935	4.853424	-1.454836	0.1541
COLLECTIVE ACTION	2.753639	1.523359	1.807610	0.0788
INFORMATION AND COMMUNICATION	-0.885757	2.056668	-0.430676	0.6692
R-squared	0.403492	Mean dependent var		9.354167
Adjusted R-squared	0.242274	S.D. dependent var		5.196110
S.E. of regression	4.523083	Akaike info criterion		6.054315
Sum squared resid	756.9563	Schwarz criterion		6.483132
Log likelihood	-134.3036	Hannan-Quinn criter.		6.216365
F-statistic	2.502766	Durbin-Watson stat		0.972395
Prob(F-statistic)	0.020789			

Multicollinearity could also be discovered by using Variance Inflation Factors. In the table below we see that there is no multicollinearity, since the value of Centered VIF is closed to one (see for example Westerlund 2005 p.160 f)

Variance Inflation Factors			
Sample: 1 102			
Included observations: 48			
	Coefficient	Uncentered	Centered
Variable	Variance	VIF	VIF
C	42.45923	99.61949	NA
GENDER	2.765682	4.866713	1.216678
AGE	0.666345	14.75462	1.264158
EDUCATION	0.956674	7.107853	1.180745
YEARS IN BUSINESS	2.512578	4.175702	1.217913
INCOME PER CAPITA	0.441927	4.687498	1.122821
TRUST	2.467922	4.101486	1.196267
NETWORKS	9.136837	20.09738	1.256086
SOCIAL INCLUSION	23.55573	54.11595	1.127416
COLLECTIVE ACTION	2.320623	3.743256	1.169768
INFORMATION AND COMMUNICATION	4.229882	8.683773	1.085472

Autocorrelation is mostly present in time series data data and therefore it is not likely that our data has problems with this phenomenon (Gujarati 2006 p. 428). When autocorrelation is present the observations are no longer independent from each other (Westerlund 2005 p. 185).

The Durbin-Watson stat in the table below indicates that the data do not have any problems with autocorrelation at a significance level of 5 percent (see for example Gujarati 2006 p. 434ff).

Dependent Variable: Number of received loans				
Method: Least Squares				
Sample (adjusted): 1 96				
Included observations: 48 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	16.02264	6.516075	2.458940	0.0187
GENDER	2.714158	1.663034	1.632052	0.1112
AGE	-0.063112	0.816299	-0.077315	0.9388
EDUCATION	1.982861	0.978097	2.027264	0.0499
YEARS IN BUSINESS	0.965041	1.585111	0.608816	0.5464
INCOME PER CAPITA	0.123634	0.664776	0.185978	0.8535
TRUST	-4.936622	1.570962	-3.142420	0.0033
NETWORKS	-3.585214	3.022720	-1.186089	0.2431
SOCIAL INCLUSION	-7.060935	4.853424	-1.454836	0.1541
COLLECTIVE ACTION	2.753639	1.523359	1.807610	0.0788
INFORMATION AND COMMUNICATION	-0.885757	2.056668	-0.430676	0.6692
R-squared	0.403492	Mean dependent var		9.354167
Adjusted R-squared	0.242274	S.D. dependent var		5.196110
S.E. of regression	4.523083	Akaike info criterion		6.054315
Sum squared resid	756.9563	Schwarz criterion		6.483132
Log likelihood	-134.3036	Hannan-Quinn criter.		6.216365
F-statistic	2.502766	Durbin-Watson stat		0.972395
Prob(F-statistic)	0.020789			

If heteroscedasticity is present the residuals are constant for all levels. This means that the residuals no longer affect the coefficient of slope equally and therefore the model is not completely reliable. This in turn makes it difficult to estimate the reliability of the variables and inadequate conclusions can be drawn from statistical hypothesis (Westerlund 2005 p. 173ff). Heteroscedasticity is often present in cross-sectional data and therefore it is important to test for this (Gujarati 2006 p. 428).

To test heteroskedasticity we use the Breusch-Pagan-Godfrey test which is a more specific version of the White test. In this thesis Breusch-Pagan-Godfrey test is used because of the shortcomings of the White test when you have a small number of observations as in our case (Verbeek 2008 p. 100). The Breusch- Pagan test estimates a p-value. If this p-value is less than five percent it can be concluded that heteroscedasticity exists. The result should in this case be considered with some caution. Our material exhibits no problem with heteroscedasticity

(Wooldrige 2003 p. 267).

Heteroskedasticity Test: Breusch-Pagan-Godfrey			
F-statistic	1.354656	Prob. F(10,37)	0.2393
Obs*R-squared	12.86408	Prob. Chi-Square(10)	0.2314
Scaled explained SS	4.846298	Prob. Chi-Square(10)	0.9012

In the table below we have used the Regression Error Specification Test, RESET, to test if there is an omission of variables and/or if we have chosen an inappropriate functional form. If there is an omission of variables, the OLS estimator is no longer unbiased (Westerlund 2005 p. 158). The table below shows that the data does not have this kind of problem since our F-value is within the critical region.

Ramsey RESET Test			
Equation: UNTITLED			
Specification: NR_LOAN C GRUPP1			
Omitted Variables: Powers of fitted values from 2 to 4			
	Value	df	Probability
F-statistic	2.589612	(3, 34)	0.0689
Likelihood ratio	9.877918	3	0.0196
F-test summary:			
	Sum of Sq.	df	Mean Squares
Test SSR	140.7908	3	46.93027
Restricted SSR	756.9563	37	20.45828
Unrestricted SSR	616.1655	34	18.12251
Unrestricted SSR	616.1655	34	18.12251
LR test summary:			
	Value	df	
Restricted LogL	-134.3036	37	
Unrestricted LogL	-129.3646	34	

10. Appendix 3.

This section illustrates that the assumptions of the multiple linear regression model are fulfilled for the second regression. Explanation of the assumptions and tests is found in Appendix 2.

First we illustrate the correlation between the variables.

Covariance Analysis: Ordinary				
Sample (adjusted): 1 99				
Included observations: 64 after adjustments				
Balanced sample (listwise missing value deletion)				
		Correlation	Probability	Observ.
AGE	AGE	1.000000	-----	64
BONDING SOCIAL CAPITAL	AGE	-0.161597	0.2021	64
BONDING SOCIAL CAPITAL	BONDING SOCIAL CAPITAL	1.000000	-----	64
BRIDGING SOCIAL CAPITAL	AGE	-0.081973	0.5196	64
BRIDGING SOCIAL CAPITAL	BONDING SOCIAL CAPITAL	0.137235	0.2795	64
BRIDGING SOCIAL CAPITAL	BRIDGING SOCIAL CAPITAL	1.000000	-----	64
EDUCATION LEVEL	AGE	0.178594	0.1580	64
EDUCATION LEVEL	BONDING SOCIAL CAPITAL	0.245702	0.0503	64
EDUCATION LEVEL	BRIDGING SOCIAL CAPITAL	0.060921	0.6325	64
EDUCATION LEVEL	EDUCATION LEVEL	1.000000	-----	64
GENDER	AGE	0.167183	0.1867	64
GENDER	BONDING SOCIAL CAPITAL	0.114793	0.3664	64
GENDER	BRIDGING SOCIAL CAPITAL	0.054532	0.6687	64
GENDER	EDUCATION LEVEL	0.023246	0.8553	64
GENDER	GENDER	1.000000	-----	64
INCOME PER CAPITA	AGE	0.058126	0.6482	64
INCOME PER CAPITA	BONDING SOCIAL CAPITAL	-0.080659	0.5264	64
INCOME PER CAPITA	BRIDGING SOCIAL CAPITAL	0.225571	0.0731	64
INCOME PER CAPITA	EDUCATION LEVEL	0.221774	0.0782	64
INCOME PER CAPITA	GENDER	0.016788	0.8952	64
INCOME PER CAPITA	INCOME PER CAPITA	1.000000	-----	64
LINKING SOCIAL CAPITAL	AGE	-0.045549	0.7208	64
LINKING SOCIAL CAPITAL	BONDING SOCIAL CAPITAL	0.145521	0.2512	64

LINKING SOCIAL CAPITAL	BRIDGING SOCIAL CAPITAL	0.279981	0.0250	64
LINKING SOCIAL CAPITAL	EDUCATION LEVEL	-0.014188	0.9114	64
LINKING SOCIAL CAPITAL	GENDER	0.074957	0.5561	64
LINKING SOCIAL CAPITAL	INCOME PER CAPITA	0.019563	0.8781	64
LINKING SOCIAL CAPITAL	LINKING SOCIAL CAPITAL	1.000000	-----	64
N UMBER OF LOANS	AGE	0.116790	0.3581	64
NUMBER OF LOANS	BONDING SOCIAL CAPITAL	0.139100	0.2730	64
NUMBER OF LOANS	BRIDGING SOCIAL CAPITAL	-0.179472	0.1559	64
NUMBER OF LOANS	EDUCATION LEVEL	0.306697	0.0137	64
NUMBER OF LOANS	GENDER	0.267046	0.0329	64
NUMBER OF LOANS	INCOME PER CAPITA	-0.015199	0.9051	64
NUMBER OF LOANS	LINKING SOCIAL CAPITAL	0.019001	0.8815	64
NUMBER OF LOANS	NUMBER OF LOANS	1.000000	-----	64
YEARS IN BUSINESS	AGE	-0.054956	0.6662	64
YEARS IN BUSINESS	BONDING SOCIAL CAPITAL	0.114793	0.3664	64
YEARS IN BUSINESS	BRIDGING SOCIAL CAPITAL	0.191396	0.1298	64
YEARS IN BUSINESS	EDUCATION LEVEL	0.122428	0.3352	64
YEARS IN BUSINESS	GENDER	-0.047953	0.7067	64
YEARS IN BUSINESS	INCOME PER CAPITA	-0.080890	0.5252	64
YEARS IN BUSINESS	LINKING SOCIAL CAPITAL	0.074957	0.5561	64
YEARS IN BUSINESS	NUMBER OF LOANS	0.043414	0.7334	64
YEARS IN BUSINESS	YEARS IN BUSINESS	1.000000	-----	64

As we see in the table above the correlation coefficient between the independent variable is close to zero, therefore the material does not have any serious problems of correlation.

As can be seen in the table below, problems with multicollinearity are not present in our material.

Dependent Variable: Number of received loans				
Method: Least Squares				
Sample (adjusted): 1 99				
Included observations: 64 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2.742629	3.657451	0.749874	0.4565
GENDER	2.903133	1.358395	2.137180	0.0370
AGE	0.085588	0.694004	0.123325	0.9023
EDUCATION	2.188464	0.965746	2.266087	0.0274
YEARS IN BUSINESS	0.589318	1.373241	0.429144	0.6695
INCOME PER CAPITA	-0.121775	0.618612	-0.196853	0.8447
BONDING SOCIAL CAPITAL	1.124701	2.729827	0.412004	0.6819
BRIDGING SOCIAL CAPITAL	-2.417652	1.328320	-1.820083	0.0742
LINKING SOCIAL CAPITAL	0.606121	1.268631	0.477776	0.6347
R-squared	0.218051	Mean dependent var		8.968750
Adjusted R-squared	0.104313	S.D. dependent var		5.086455
S.E. of regression	4.813857	Akaike info criterion		6.110575
Sum squared resid	1274.527	Schwarz criterion		6.414168
Log likelihood	-186.5384	Hannan-Quinn criter.		6.230175
F-statistic	1.917139	Durbin-Watson stat		0.664758
Prob(F-statistic)	0.075713			

Multicollinearity could also be discovered by using Variance Inflation Factors. In the table below we see that there is no multicollinearity, since the value of Centered VIF is closed to one (see for example Westerlund 2005 p.160 f)

Variance Inflation Factors			
Sample: 1 102			
Included observations: 64			
	Coefficient	Uncentered	Centered
Variable	Variance	VIF	VIF
C	13.04705	37.81409	NA
AGE	0.479999	13.06401	1.187050
GENDER	1.766419	3.599711	1.068664
EDUCATION	0.888969	8.293063	1.225340
YEARS IN BUSINESS	1.845582	3.761034	1.116557
INCOME PER CAPITA	0.371258	5.161492	1.187133
TRUST	3.806318	7.584363	2.370113
BONDING SOCIAL CAPITAL	7.442517	20.22239	1.263899
BRIDGING SOCIAL CAPITAL	2.263758	3.383026	1.638653
LINKING SOCIAL CAPITAL	2.203955	3.393462	1.590685

The Durbin-Watson stat in the table below indicates that the data do not have any problems with autocorrelation at a significance level of five percent (see for example Gujarati 2006 p. 434ff).

Dependent Variable: Number of received loans				
Method: Least Squares				
Sample (adjusted): 1 99				
Included observations: 64 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2.742629	3.657451	0.749874	0.4565
GENDER	2.903133	1.358395	2.137180	0.0370
AGE	0.085588	0.694004	0.123325	0.9023
EDUCATION	2.188464	0.965746	2.266087	0.0274
YEARS IN BUSINESS	0.589318	1.373241	0.429144	0.6695
INCOME PER CAPITA	-0.121775	0.618612	-0.196853	0.8447
BONDING SOCIAL CAPITAL	1.124701	2.729827	0.412004	0.6819
BRIDGING SOCIAL CAPITAL	-2.417652	1.328320	-1.820083	0.0742
LINKING SOCIAL CAPITAL	0.606121	1.268631	0.477776	0.6347
R-squared	0.218051	Mean dependent var		8.968750
Adjusted R-squared	0.104313	S.D. dependent var		5.086455
S.E. of regression	4.813857	Akaike info criterion		6.110575
Sum squared resid	1274.527	Schwarz criterion		6.414168
Log likelihood	-186.584	Hannan-Quinn criter.		6.230175
F-statistic	1.917139	Durbin-Watson stat		0.664758
Prob(F-statistic)	0.075713			

Our p-value is not smaller than five percent and therefore heteroscedasticity is not a problem.

Heteroskedasticity Test: Breusch-Pagan-Godfrey				
F-statistic	1.245502	Prob. F(9,54)		0.2879
Obs*R-squared	11.00160	Prob. Chi-Square(9)		0.2756
Scaled explained SS	4.766840	Prob. Chi-Square(9)		0.8541

The table below shows that the data does not have this kind of problem since our F- value is within the critical region.

Ramsey RESET Test			
Equation: UNTITLED			
Specification: NR_LOAN C GRUPP2			
Omitted Variables: Powers of fitted values from 2 to 4			
	Value	df	Probability
F-statistic	2.586854	(3, 51)	0.0631
Likelihood ratio	9.065297	3	0.0284
F-test summary:			
	Sum of Sq.	df	Mean Squares
Test SSR	157.4852	3	52.49505
Restricted SSR	1192.429	54	22.08201
Unrestricted SSR	1034.944	51	20.29301
Unrestricted SSR	1034.944	51	20.29301
LR test summary:			
	Value	df	
Restricted LogL	-184.4077	54	
Unrestricted LogL	-179.8751	51	