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Relationships between microfinance, solidarity groups, and informal lending in developing countries: the importance of trust and social capital and the WishVast potential

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Abstract

In developing countries, prospective entrepreneurs have a very difficult time gaining access to capital. Formal lending sometimes works for solidarity groups of small business owners who approach microfinance institutions (MFIs) to access capital for expanding their businesses. However, MFIs are not lending money to entrepreneurs interested in starting new businesses. In order to create an environment where startup business and entrepreneurship thrives, it is crucial to meet the needs of the clients being marginalized. As a response to this trend, the informal lending and credit market in rural Kenya is growing fast and little research is available regarding the mechanics of this system. Instead of decomposing the microfinance industry into a binary relationship between MFIs and their clients, our research views the microfinance industry as a multi-actor system (MFIs, solidarity groups, and informal lenders) and how their success is mutually dependent. This paper will discuss the dynamics between these actors, the role of trust and social capital in these complex relationships, and the potential role of WishVast to help individuals gain better access to capital.

CONTENTS

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This thesis was completed in conjunction with the EDSGN 452.3 class. Over the course of the semester, I was the lead author of a paper titled “Relationships between microfinance, solidarity groups, and informal lending in developing countries: the importance of trust and social capital” (pending acceptance) with co-authors Steve Garguilo, Matt Prindible and Khanjan Mehta. Sections within this text (see citations) are based off of their research, observations, photographs and ideas. Steve Garguilo, Matt Prindible, Andrew Okello Syata and Khanjan Mehta traveled to Nyeri, Kenya in the summer of 2009 to gain validation for the WishVast system. Their time and effort in explaining their observations, views and the WishVast concept set the basis for this thesis. Reference to the “WishVast team” or “the team” refers to Steve, Matt, Andrew and Khanjan.

Finally, I would like to thank the remainder of the EDSGN 452.3 class. The countless hours put in by the class to prepare those traveling to Kenya for the summer has inspired, enlightened and motivated me.

INTRODUCTION

Almost three billion people live on less than two dollars a day, adjusted for purchasing power. Eight hundred and forty million people don't have enough to eat. One billion people lack access to clean water. Ten million children die every year from easily preventable diseases (Easterly, 2006). In light of such human tragedies, 192 United Nations member states and 23 international organizations came forth at the Millennium Summit in 2000 to establish the Millennium Development Goals (MDGs). The eight goals for 2015 are:

- Eradicate extreme poverty and hunger
- Achieve universal primary school enrollment
- Promote gender equality and empower women
- Reduce child mortality
- Improve maternal health
- Combat HIV/AIDS, malaria and other diseases
- Ensure environmental sustainability
- Develop a global partnership for development

Billions of people in developing countries earn their living through small-scale businesses (World Bank, 2004; Hernando de Soto, 1989). Recent studies that combine 13 World Bank Living Standards Measurement Surveys find that, on average (across countries), 21.9% of households living on less than US $1 per person per day and 24.1% of households living on less than US $2 per day have at least one self-employed household member (Banerjee and Duflo, 2007). Detailed literature surveys show that micro and small enterprises contribute to economic growth through several pathways that go beyond job creation (Ayyagari, Beck, & Demirguc-Kunt, 2003).

In Kenya, employment in small and medium enterprises (SMEs) has been estimated to account for more than 20% of adult employment and for 12-14% of national GDP (Daniels and Mead, 1998). The majority of these businesses are composed of a solo entrepreneurs working off of minimal capital levels. (Liedholm and Mead, 1987, 1993 and 1998) The following figures illustrate some of the SMEs the WishVast team encountered in their time in Kenya, the diversity and creativity illustrated typical of small scale entrepreneurship across the developing world.

Figure 1: Women agro-entrepreneurs selling fruits and vegetables in a small community market. The young lady in front purchases bananas from the stall (behind) and travels from home to home selling bananas.

Figure 2: These three entrepreneurs run a small entertainment center where customers can listen to music for a small fee; the music system runs on car batteries that need to be recharged every week.

Figure 3: A small pharmacy at a community center in Kenya. The owner borrowed $150 from various family members to start this business.

Figure 4: Bicycle mechanic fixing bikes at a community center; capital needed to start a similar business is about $80

	
Figure 5: A traditional phone booth that runs of car batteries. Customers pay by the minute to make phone calls to friends and relatives in Kenya. These are mostly replaced with cellphones now.	Figure 6: A small enterprise that aggregates and dries hibiscus flowers to make a hibiscus tea (a branded product). Financial capital is necessary for the dryers and to start the cash flow.

Much attention and energy from government and private sources has been focused on credit constraints amongst micro-entrepreneurs in the developing world. However, the effectiveness of various microcredit initiatives is still largely unknown, with many banks losing money on these programs (Morduch, 1999) The substantial attention the concept of microfinance has created the misconception that Microfinance Institution (MFI) loans are readily available for the poor. The fact is that only 8-14% of the market demand for microfinance is currently being met and less than 20% of SMEs in Kenya have ever received credit from formal financial institutions. The problem remains that MFIs have no cost-effective manner to assess credit worthiness of the poor. They have responded to this by charging higher interest rates than the poor can afford or by requiring collateral they inherently lack. (FSD Kenya, 2008) Gradually, MFIs have scaled their operations toward for-profit ventures that focus on relatively richer clientele (Elisabeth Malkin, 2008). This observation has been further validated while working on various Humanitarian Engineering and Social Entrepreneurship ventures in Kenya over the last six years, particularly this past summer as the WishVast team focused on the dynamics of the informal economy. (Brown, Garguilo, Prindible & Mehta, pending acceptance)

"How do micro-entrepreneurs in Kenya get access financial capital to start small businesses?" The WishVast team spoke to various sources including small-scale entrepreneurs, aspiring entrepreneurs, MFI officials, members of solidarity groups, ROSCA members, etc. In the process, it was revealed that the social dynamics of seeking capital are actually very involved and complicated with trust and social capital playing a critical role. The first section discusses the social networking venture that provided the foundation for this study and series of observations. The second section discusses the various societal constructs that affect access to capital. Various sources of capital for micro-entrepreneurs and the role of trust and social capital are discussed in the third section. The complex relationships between MFIs, solidarity groups and informal lenders and the potential of the WishVast system are discussed in details in the final section of the paper.

WISHVAST: BUILDING TRUST AND SOCIAL CAPITAL USING CELL PHONES

WishVast harnesses the power of cell phones in developing countries to build trust and optimize resource utilization and supply chains to facilitate people-to-people trade with the ultimate goal of alleviating poverty. According to the latest data from the United States Central Intelligence Agency, there are approximately 4.1 billion cell phone users worldwide, and it is estimated that 97% of people in Tanzania have access to cell phones (BBC, 2005). Cell phones penetration in Kenya is very similar. While internet access is generally non-existent for the rural poor, connection by mobile phones is quickly becoming the status quo. As the availability of mobile phones in developing regions continues to rapidly increase, so does the ability to reach people in geographically dispersed places. Connecting people in rural communities with each other and to people in urban areas is essential to achieving a fully-integrated and thriving society. Facilitating the creation of trusting relationships is an essential step after connecting people. A study of the social networks of women agro-entrepreneurs in northern Tanzania revealed that the single most important component when conducting business is trust. Despite limited access to financial resources for individuals in developing regions, trust is more important than price, logistics, and other factors when conducting business. (Mehta, Semali, Maretzki, Findeis, Kuldau, & Willyerd, 2009)

As shown in Figure 7, the WishVast technology is built on a cell phone tethered to a laptop. The laptop runs the “WishVast Network Management System” software, which was developed by The WishVast team as a cross-platform Java application. This application allows the cell phone to receive messages from WishVast’s users via SMS text messaging, then routes the messages appropriately by interfacing with a database on the computer. WishVast leverages existing technologies; users only need their cell phones without any modifications or additional software to use the system.

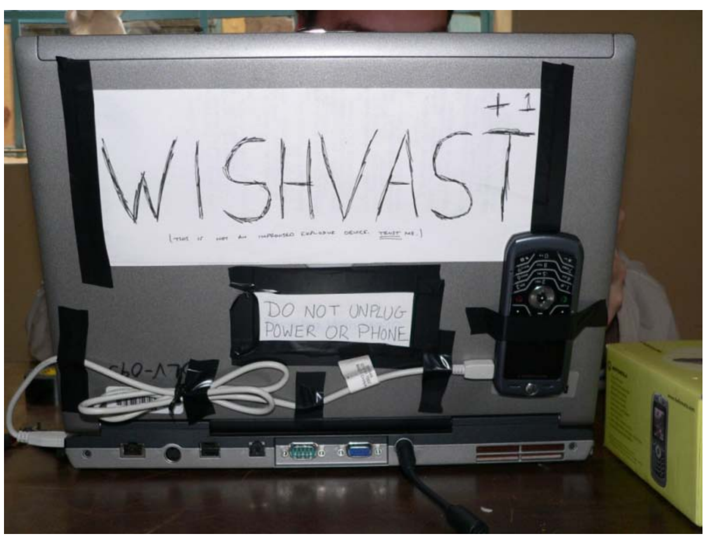

Figure 7: The WishVast hardware: one laptop, one cell phone, one USB tether.

WishVast users can join groups of local relevance, then send SMS text messages to the entire group to advertise themselves, their products or services, or get access to resources (Mehta, Semali, Maretzki, Findeis, Kuldau, & Willyerd, 2009). WishVast users can realize the value of their current social networks, forge new relationships, and expand their social and business networks. Upon the completion of a transaction over the WishVast network, users can exchange points to rate their satisfaction with the interaction. This is similar to eBay’s current model of building buyer/seller feedback. Over time, these points add up, and users of the Wishvast system develop trust and a digital reputation. WishVast is applicable to a myriad of different scenarios in the developing world. For example, ad hoc laborers can use the system to connect with employers in a timely manner while avoiding the overhead costs of an employment bureau. (Garguilo, Prindible, Syata, & Mehta, 2010) (Brown, Garguilo, Prindible & Mehta, pending acceptance)

Relentless Pursuit of Capital

In developing countries where there are so many opportunities for growth and improvements, practical solutions are abundant to solve many pressing issues. The story of lending in these regions begins with a single good idea. The prospective entrepreneur would first seek money from immediate family (high level of trust and mutual understanding). If financial needs continue to be unsatisfied and the money the family has to lend has been exhausted, the entrepreneur would move onto friends (high [potentially diminishing] level of trust, diminishing level of mutual understanding), and after exhausting these connections, an entrepreneur is forced to move onto weak-tie relationships (low level of trust, and minimal contact leads to a lack of mutual understanding).

The financial system in most developing countries can be broadly broken down into the formal and informal sectors. The formal sector, servicing established businesses and individuals, consists of the central bank, commercial banks, development banks, savings banks, social security schemes and insurance companies. The informal sector includes individuals such as moneylenders, relatives, friends, neighbors, landlords, traders dealing mostly with the "traditional, rural, subsistence-oriented branch of the economy" (Bakhtiari, 2006) that have no established formal credit histories.

Who-you-know Network Systems

In East Africa, "who-you-know" network knowledge systems appear to be prevalent and may extend beyond an individual’s immediate social network to a larger collective network that may provide a useful advantage in social, political or economic situations (Granovetter, 1995). There is little differentiation between these economic and social networks because there is very significant overlap in most communities in developing countries (Mehta, Semali, Maretzki, Findeis, Kuldau, & Willyerd, 2009). In the agricultural sector, it has been demonstrated that most farmers look for information from other farmers they know and trust (Kafewo, 2006) (Microsoft Research India 2008).

In that vein, social networks play a huge role in micro-businesses. Entrepreneurs carefully manage their social, economic and political relationships as they seek capital for their small businesses. A conversation by the WishVast team with a Macademia nut broker in Nyeri, Kenya highlighted the issue; detailing his carefully constructed network within the region and expanding connections beyond typically constrained geographic boundaries through his cell phone. To demonstrate the point, even arranging a meeting with the broker leveraged the small social network the team had developed during their short stay in Kenya (a friend of a friend of a friend, to be exact!).

In less formalized systems like this, good fortune plays a deciding factor in the success of an entrepreneur’s micro-enterprise. Increasing the likeliness of “social-serendipity” would afford entrepreneurs a greater chance to meet with the right contacts—or at least someone who could put them in contact with the right person. A social networking system like WishVast can play a key element in increasing these chances. (Brown, Garguilo, Prindible & Mehta, pending acceptance)

Role of Cell Phones in Quest for Capital

In Tanzania, 97% of the people have access to a cell phone (BBC, 2005). Information and Communication Technologies (ICTs), such as cell phones, may help poorly functioning markets due to poor communication and transportation infrastructure work more efficiently and thereby increase incomes and/or lower consumer prices. "In fact, it has become increasingly common to find farmers, fishermen, and other producers throughout the developing world using mobile phones, text messaging, and employing the internet for marketing their products." (Mehta, Semali, Maretzki, Findeis, Kuldau, & Willyerd, 2009)

Cell phones have essentially become the identity of most micro-entrepreneurs. Cell phones reduce reliance on local relationships and facilitate longer-distance business and social connections. As the category of casual (weak-tie) friendship emerges, this category comes to encompass an ever-larger share of the total number of an individual's social contacts. The new weak social ties may be very beneficial to micro-entrepreneurs because weak social ties lead to larger networks and new resources (Mehta, Semali, Maretzki, Findeis, Kuldau, & Willyerd, 2009).

Informal Lending

Family, Friends, and Fools

The first stop in the relentless pursuit of capital for a micro-entrepreneur is family and close friends. Entrepreneurs from both underdeveloped and developed economies and particularly those entrepreneurs seeking start-up capital rely extensively on family and friends for immediate access to capital. The entrepreneur has taken the time to build trust and social capital (credibility) with these individuals. Therefore, a high level of mutual understanding exists between these parties. In this context, mutual understanding is defined as each party being able to share reciprocal ideas and understand undesirable circumstances that may arise throughout the life of the loan. Mutual understanding, similar to trust, is the belief that the other party always has good intentions. Friends and family are best able to make proper judgment of character and financial ability (two of the five characteristics scored by a financial services institution) of the borrower, avoiding unnecessary time and money spent by the lender and resulting in significantly lower transaction costs.

Outside of this ideal state are myriad complicated situations that make accessing capital a riskier decision. The nature of informal lending requires a high degree of trust and mutual understanding amongst its participants. During a 2008 study in Tanzania, the interviewed women trusted 96% and respected 100% of the people with whom they worked (N=92). The data reflected that the women truly valued long-term business relationships based on respect and trust. Within these relationships, price was secondary to loyalty and relationships. The women generally distrusted others at the outset and trust was gradually built over time. (Mehta, Semali, Maretzki, Findeis, Kuldau, & Willyerd, 2009)

Pros & Cons of Informal Lending Community

African finance systems have historically taken on a dualistic nature, with little overlap of formalized banking and informal agents (including their clientele). (Nissanke, 1992) Under conditions of lacking information and infrastructure that make it inaccessible for formal financial institutions, "informal intermediaries may provide the best financial linkage to the bulk of the population." (Steel, Aryeetey, Hettige & Nissanke, 1997) These informal financial institutions finance SMEs and organize household savings that is beyond the reach of formal financial systems. (Adams, 1992; Wai, 1992) Sadegh Baktiari points to several advantages the informal lending community has given the nature of its borrowers and lenders:

- Informal moneylenders have local information which helps them appraise credit needs and credit worthiness of the client.
- Informal moneylenders will profit from social sanctions such as those that may exist between members of a family. Those sanctions may serve as a substitute for legal enforcement.
- Informal moneylenders use specific incentives to stimulate repayment, such as repeat lending to borrowers who repay promptly, with gradually increasing loan size. (Bakhtiari, 2006)

The main challenge of the informal lending market is the extremely high interest rates resulting from a lack of credible information. High interest rates are generally credited to asymmetric information, meaning the lender has less information regarding the borrower's ability and likeliness to repay his or her debts. This imperfect information affects both the supply and demand sides of the informal credit market. For the supply side, the lender must expend significant time and energy to determine the borrower's credit worthiness in an environment where this information is not easily ascertainable. The screen costs involved are "further enhanced by moral hazard—any source of information has to be further screen for reliability." (Aleem, 1990) On the demand side, the lack of market transparency hinders borrowers from screening competing loan rates for the best price.

It is clear that while informal lending has its benefits, there are basic limiting factors. Informal credit is generally conducted at the local level, where the market is segmented and information does not flow freely. The trust built in the informal community is not being leveraged to branch out and access more capital; the transaction remains solely between the borrower and lender. The borrower would like to capture/harness/leverage the trust built between themselves and the lender as a form of collateral to access more capital from other sources.

ROTATING SAVINGS CREDIT ASSOCIATIONS (ROSCAS)

Recent research in the Philippines in 2005 and in Kenya in 2006 suggests that the poor, like everyone else, have problems resisting the temptation of spending money that they have at hand (Banerjee and Duflo, 2007). Most self-employed individuals in rural Kenya do not have a formal bank account. The main reasons given for not owning an account were that formal banks typically have large opening fees and have minimum balance requirements (often as high as 500 Ksh, or US $7.70). Savings account are also offered by savings cooperatives, but the cooperatives are urban and employment based, and therefore rarely available for self-employed workers. Instead, individuals typically save in the form of animals or durable goods, or in cash at their homes.

One of the most secure ways to save money in the informal sector is through the use of Rotating Savings and Credit Associations (RoSCAs), which are commonly referred to as merry-go-rounds. Most RoSCAs have periodic meetings, at which members make contributions to the shared saving pool. The pot money is then given to one member every period, in rotation until everyone has received the pot. RoSCA participation in Kenya is high, especially among women, and many people are active in multiple RoSCAs. (Gugerty, 2007) In general, RoSCAs participants use the funds for their larger expenses such as school fees for children or other large one-time expenses.

Because the money in a merry-go-round is not invested and there is no interest earned, why don't people save individually? Interestingly, on average, an individual will receive the entire merry-go-round fund before he or she could have completely saved the amount on their own. This allows bulk purchases to occur before they normally would. (Higbee, 2009) Additional studies on merry-go-round usage point to differential consumption choices and intra-household conflict between husband and wives. RoSCAs have become a means for women to conceal money from their husbands. (Siwan and Baland, 2000)

There is wide variation amongst RoSCAs regarding the order of allotment (random, bidding process, seniority, etc.), frequency of meetings and amount contributed. (Siwan and Baland, 2000) Anderson and Baland, in a study of Africa's largest slum Kianda village of Kibera, pointed to the following statistics on the local merry-go-rounds:

- Had 15.8 members, on average
- Has existed for two years and 4 months, on average
- Most commonly contributes every month (49%), followed closely by weekly contributions (35%)
- Has a median cycle that lasts 6 months
- Comprises only women (65%), or both men and women (30%)
- Was started by friends, relatives, or neighbors (85%) (Anderson and Baland, 2000)

Figure 8: A Merry-go-round in progress at a small community in Western Kenya. A number of group members are older women and hence this younger lady goes from person to person, collects their money and drops it in the plastic bowl.

Figure 9: When funds from all the members are collected, they are handed over to the recipient of that week's merry-go-round. Since this group is geographically dispersed, they meet on a bi-weekly basis. Merry-go-rounds might meet on a daily basis…all the way up to a monthly basis!

Figure 10: Tea is being prepared for all the members of the merry-go-round group. The members take turns hosting the merry-go-round; the host foots the bill for the refreshments which consists of tea and sliced bread.

Figure 11: The funds pooled by each member in this particular bi-weekly merry-go-round 300 Ksh. The cost of the tea and bread was approximately 550 KSh!

Figure 12: The financial transactions were completed in about 30 minutes; the refreshments and socializing continued for about two hours thereafter. The conversations focused on livelihoods, local social issues and local politics.

Figure 13: The young lady works as a HIV/AIDS counselor and narrated how she was able to save money through the merry-go-round and was able to buy a goat after every cycle. She now has three milking goats that provide additional income.

Solidarity Groups

Solidarity groups are groups of individuals (typically women) who come together to mutually guarantee the repayment of a microfinance loan. Groups have generally been working together in different businesses for a significant portion of time allowing them to build enough trust to take the risk of taking on a loan. It is common for solidarity groups to come together to access capital in which all of the members are mutually liable for each individual's loan, building an alternative to normal loan collateral requirements (which the poor inherently cannot fulfill). "From the lenders' perspective such joint liability lending enables a transfer of default risk from the institution to the borrower, and can reduce the transaction cost of providing a large number of small loans (by concentrating clientele in groups, at regular village based meetings, rather than dealing with individual borrowers at different times)." (Montgomery, 1996)

SOCIAL PERSPECTIVE

The driving forces in solidarity groups are trust, mutual understanding and peer pressure to ensure all individuals goals are aligned. Dr. Muhammad Yunus expands on this concept, stating:

*... Group membership not only creates support and protection but also smoothes out the erratic behavior patterns of individual members, making each borrower more reliable in the process. Subtle and at times not-so-subtle peer pressure keeps each group member in line with the broader objectives of the credit program. … Because the group approves the loan request of each member, the group assumes moral responsibility for the loan. If any member of the group gets into trouble, the group usually comes forward to help. (*Yunus, 1996)

The point of aligned incentives was driven home in a former study of solidarity group schemes in several different continents:

The mutual trust arrangement itself; at the heart of the group guarantee, has profound social implications. The solidarity group, because of its basis in mutual support, frees borrowers from . . . . dependent relationships. Further, the peer group itself, becomes the building block to a broader social network. . . . . The social objectives of mutual self-help and poverty alleviation, remain fundamental to the broader goals of these peer group lending schemes (Berenbach and Guzman, 1992)

THE TEAM'S OBSERVATIONS

While in Kenya, the WishVast team spent time with a solidarity group of twelve business owners (eight women, four men, and three children) from a variety of industries composed of friends of friends of friends. The solidarity group was formed out of a RoSCA, with the group approaching a Microfinance Institution after they had saved enough funds. At the solidarity group meeting, the accountant of the group collecting payments, updating a log book containing every transaction the solidarity group has even done internally and with their MFI and individuals had casual and business-related conversation. The members of the solidarity group stressed the benefit in expanding individual social networks and sharing their contacts with the solidarity group to benefit the other members. The group members emphasized their biggest challenge (next to collateral and debilitating securities) is indentifying new customers to help sustain and grow their businesses. "Markets are entirely too saturated… in everything! Where do I look for new opportunities? We need access to new markets. It's the close social ties we have that bring in customers from other towns and from far away," stated one member. (Brown, Garguilo, Prindible & Mehta, pending acceptance)

Figure 14: In this picture, Joseph is shown working as a carpenter. In order to expand his business, he has joined a solidarity group so that he can gain further access to capital.

SAVINGS AND CREDIT COOPERATIVES (SACCOS)

After reaching a certain critical mass in both clients and capital, many solidarity groups, over a long period of time, join together to form a more formalized financial institution. Savings and Credit Cooperatives, or SACCOs, are very similar to the modern western credit unions in that they are member owned. This is beneficial in the fact that members (both stakeholders and borrowers) understand the financial conditions and circumstances (higher degree of mutual understanding). SACCOs function to support saving, provide credit at reasonable rates and offer various other financial services; all while promoting social networking opportunities over a more geographically dispersed region.

There are typically two types of SACCOs, employer-based (generally urban) and cash crop/agriculture-allied activities (generally rural). The services usually provided by SACCOs include selling shares, offering credit facilities and savings. Deposit facilities are available to both members and non-members with interest pegged at 3% below commercial banks. The savings provisions are extremely attractive, with non-members generally making up a large portion. However, taking loans is restricted to SACCO members. Loans are usually classified as "'development' loans (e.g. housing) or 'social loans' (for emergencies school fees)" (Matua and Oyugi, 2006) and are generally granted at ~1%/month. In Kenya, the number of rural SACCOs was over 155 at the start of 2005, up from 100 in 1999. Likewise, outstanding loan portfolio increased to Kshs 2.3 billion from Kshs 1.5 billion over the same time period. The growth in number and outstanding loans "is good evidence of the savings potential and utilization that exists among 'small savers'." (Matua and Oyugi, 2006)

The Team's Observations

Most of the prospective entrepreneur's the WishVast team interacted with were involved with at least one SACCO. Every SACCO has its own distinct function and rules—with members directly responsible for these decisions. Directors are elected and responsible for day-to-day operations and decision making. All members attend status meetings every two weeks. Upon speaking with a member of a 600 person matatu SACCO, the team learned she had to pay an application fee, needed several references and had to yield the title to her matau as collateral. After being a member for a designated time period, she was able to apply for a loan through the SACCO. While records of such transactions are kept of all members, accuracy is a daunting problem given the size and geographic dispersion. It would be helpful for the members to have a digital reputation to ensure trustworthiness. (Brown, Garguilo, Prindible & Mehta, pending acceptance)

Formal Lending - Microfinance Institutions

Formal Lending – Challenges of the Formal Banking System

The majority of the African population makes little to no use of formal savings and lending institutions for a number of reasons. A study by the Namibian Economic Policy Research Unit points out that most formal financial services entities do not reach the poor for several reasons, including scattered demand, lack of usable collateral, lacked contract enforcement and the poor's general reliance on seasonal farming (Matua and Oyugi, 2006). Likewise, being formal entails costs. These costs include taxes, regulatory compliance and potential bribery to government officials. (Straub, 2005) In addition, African culture dictates sharing wealth with extended family; making amassed wealth much easier to track for family to make requests or elicit bribes. Other reasons include land generally coming under communal possession, hindering it from being used as collateral.

Microfinance has been a field of explosive growth over the course of the past several decades. According to the Microcredit Summit Campaign, microfinance institutions had 154,825,825 clients, more than 100 million of them women, as of December 2007. CGAP, a branch of the World Bank dedicated towards promoting micro-credit, reports in the FAQ section of its web-site that "There is mounting evidence to show that the availability of financial services for poor households--microfinance--can help achieve the MDGs." (Banerjee, Duflo, Glennerster & Kinnan, 2009) Developed to correct the flaws in the formal financial system when targeting the poor, microfinance is an extension of modern formal financial services to low-income clients who cannot access commercial bank loans that are appropriate to their needs (principal, interest, collateral, etc). The range of financial services includes loans, savings, insurance, leasing, money transfers, etc. (Bakhtiari, 2006)

MFI Origins - Grameen Bank

Grameen Bank was developed in 1983 as a specialized bank. Muhammad Yunus intended Grameen to interact directly with the poor; lending directly and empowering self-employed micro-enterprises with the opportunity to pull oneself from poverty. Today the bank has ~7.8 million members, ~$8 billion in cumulative loans dispersed and ~98% repayment rate. Here we take a look at the history and statistics of Grameen Bank:

Grameen Bank, Selected Statistics, *as of April 2009, in USD* (www.blogabiv.com)	
Cumulative Amount Disbursed Since Inception	$7,971,490,000
Cumulative Amount Repaid Since Inception	*$7,071,710,000*
Loans Outstanding	$715,080,000
Repayment Rate	97.94%
Deposit Balance	$973,020,000
Deposits as a % of Outstanding Loans	136%
Net income (2007)	$1,540,000
Number of Members	7,840,583
Number of Branches	2,554

Figure 15

- Dr. Yunnus, founder of the Grameen bank and considered the "grandfather of microfinance", first explored the concept of microfinance first in 1974 when he lent $27 to 42 villagers, who otherwise were forced to use usurious money lenders
- The idea further developed in 1976 into various villages of Jobra, and officially became an independent bank in 1983
- Currently 95% of the equity is owned by the poor borrowers of the bank, the remaining 5% by the government
- 7.84 million borrowers of which 97% are women
- Interest rates on microloans: 20% for income generating loans, 8% for housing loans, 5% student loans, 0% for beggar loans, deposit savings rate is 8.5%
- No contracts or collateral is ever employed
- Offer comprehensive financial services: Microloans for business development, housing loans, education loans, savings accounts, pension schemes, loan insurance, life insurance
- Grameen has over 19 sister companies, some are run as for profit businesses, while others are run as no-loss, no dividend, sustainable “social businesses” which focuses on providing subsidized or low cost services (clean water, nutritious foods, healthcare services) to the poor of Bangladesh
- In 2006, Grameen Bank won the Nobel Peace Prize

Grameen basic principles:

- The bank would lend only to the poorest of the poor in rural areas
- The bank would remain woman-focused, 97% of its customers are women
- These loans would be without collateral or security
- The borrower - and not the bank - would decide the business activity for which the loan will be utilized
- The bank would help support the borrower in succeeding
- Borrowers will pay as little or as much interest required to keep the bank self reliant (that is, not dependent on grants or donations)

The banking units of Grameen Bank are created by the collection of groups of five individuals (solidarity groups). Individuals receive small loans (usually less than $100) that they repay in 50 weekly installments. While loans are made to individuals, everyone in the group is liable; thus enforcing peer pressure. In order to ensure no anti-group action, six to eight groups form what is called a “center”, where all transactions are openly discussed amongst the groups.

Grameen Bank’s credit delivery and savings mobilization model is designed to combat both behavioral and material risks of lending. Behavioral risk results from asymmetric information and poor enforcement of loan contracts, typical of rural credit markets. In contrast, material risk of lending ‘is caused by agroclimate and production risk that characterizes production relations in rural areas. Both types of risks are sources of poverty and failure of rural financial institutions." Grameen's group-based lending, "i.e., tying credit provision to group, not individual, repayment behavior; mandatory savings that improve the financial strength of borrowers; mandatory insurance scheme that protects loans against material production risks; provision of loan rescheduling in cases of natural disaster; and introduction of seasonal loans combined with nonfarm loans or goat loans" (Shahidur, 1996) are all geared to minimize inherent risks of lending for both lender and borrower.

Prominent MFIs

Here we look at the history, structure and financials of several prominent MFIs:

'Philippines' CARD'

Philippines CARD, Selected Statistics, as of 2004, in USD	
Active Clients	80,098
Percentage Female Clients (% total)	99%
Portfolio Outstanding (USD millions)	6.80
Average Loan	93
Average outstanding loan size/GNP per capita	8.6%
Portfolio at risk > 30 days	3.5%

Figure 16

- Center for Agriculture and Agricultural Development, Inc. (CARD) was founded in December 1986 targeting the landless poor women that have per capita income of no more than $26 USD/month.
- Presently, CARD is structured as a Mutually Reinforcing Institution (CARD MRI) to provide diverse finance and non-financial services. CARD MRI consists of CARD's non-governmental organizational entity (CARD NGO), CARD Bank, CARD Mutual Benefit Association and CARD MRI Development Institute
- In 1989 CARD began lending to solidarity groups, modifying the Grameen Bank method to suit its Filipino audience. However, it has since modified its strategy to focus on individuals versus group (solidarity) lending. It two major loan programs are:
  - *Sikap Loan*: Used to finance usual Filipino microenterprise ventures including vending, crop and livestock projects, hollow block making, bakery operations, dressmaking and dry fishing
  - *Sagip Loan*: Used for emergency purposes or social obligations such as education or health (Center for Agriculture and Rural Development, Inc. Annual Report, 2003-2004)

'Thailand's Bank for Agriculture and Agricultural Cooperatives'

Bank Raykat, Selected Statistics, as of 2006, in USD	
Active Clients	3,330,762
Percentage Female Clients (% total)	50%
Portfolio Outstanding (USD millions)	2,319.50
Average Loan	696
Microfinance as a percentage of total	31%
Local units	3,700

Figure 17

- Thailand's Bank for Agriculture and Agricultural Cooperatives (BACC) was established in 1966 as a state enterprise under the jurisdiction of the Ministry of Finance
- Administrative structure is as follows:
    - 22 Departments
    - 48 Divisions
    - 10 Projects
    - 1 Group
    - A Network of Branches including:
    - 75 BACC Provincial Offices
    - 1 Agricultural Central Market
        - 593 Main Branches
        - 97 Islamic Bank Fund
        - 372 Sub Branches

Sadegh Bakhtiari, in his discussion of the Bank, references five elements that have guided its reform over the past several years:

- A corporate culture emphasizing cost effectiveness, productivity and efficiency
- Decentralization and expansion of branch network operating as profit centers
- Individual lending through joint liability groups, financial technology attuned to Thai culture
- Substantial improvements in portfolio quality, which created depositor confidence
- A radical shift in financial resource base to rural savings mobilization (Bakhtiari 2006)

‘Bank Rakyat’

Bank Raykat, Selected Statistics, as of 2006, in USD	
Active Clients	3,330,762
Percentage Female Clients (% total)	50%
Portfolio Outstanding (USD millions)	2,319.50
Average Loan	696
Microfinance as a percentage of total	31%
Local units	3,700

Figure 18 (Women's World Banking, 2009)

- Bank Rakyat Indonesia (BRI) is a government bank that began as an agricultural development bank
- BRI was founded in 1985 during the Dutch colonial period by Raden Aria Wirjaatmadja
- BRI gained a good deal of notoriety when it came out of the East Asian financial crisis of 1997 largely unscathed. This was a result of little lending in foreign currencies or to corporations borrowing heavily overseas (Bakhtiari, 2006)

Risks/Loan Sizes

The Grameen model has proven to be largely successful in its areas of implementation; the beauty being that it largely eliminated the need for collateral. Grameen Bank capitalizes on a highly motivated and well educated work force to assess/assist several extremely small loans. Each Grameen "center" is assisted by a Grameen Bank worker every week. However, Grameen's labor intensive model has caused many of the major microfinance organizations to stray from that original MFI standard. Current practices in MFI heavily favor lending money to more established businesses and solidarity groups in an effort to scale up business. A study by the Namibian Economic Policy Research Unit points out that while the emergence of MFIs twenty-five years ago was to fill the gap left by banking institutions, MFIs over the last decade have largely neglected rural finance. (Matua and Oyugi, 2006) In fact, not a single one of the MFIs the WishVast team personally interviewed funded start up companies. In this vein, Gonzalez-Vega analyzed the three main reasons why loan sizes within MFIs have seen these major increases, citing:

- Information-induced increases: the MFIs cumulative experience in the market allows them to revise and refine their perceptions of repayment ability and poverty level. This enables them to increase initial loan size and speed of loan growth
- Client-induced increases: the borrowers gain a repayment track record that allows them to demand more credit. For the MFI, the longer it has been in business, the more of these established clients its portfolio will have; and
- "Policy-induced increases: due to changes in the loan-supply criteria adapted by the organization as a response to threats to its sustainability or redefinitions of its market niche. These increases may reflect the search for wealthier clients who, ceteris peribus, demand larger loans than poorer clients" (Gonzalez-Vega et al, 1996)

There are obvious benefits to this scaling mechanism: fewer loans means less time/monitoring, higher returns on economies of scale and more established credit history. In a study of a major microfinance institution, it was demonstrated that the reduction in its average operation costs was a result of an increase in average balance outstanding, despite a reduction in transaction efficiency. (Gonzalez-Vega et al, 1996)

Microfinance effectiveness

The microfinance revolution, while clearly honorable in its ambitions, has recently come under intense debate as to its effectiveness in poverty alleviation. "Despite recent claims, the equation between microfinance and poverty alleviation is not straight-forward, because poverty is a complex phenomenon and many constraints that the poor in general have to deal with." (Bakhtiari, 2006) In this vein, several of the leading research institutions set out to determine the actual merit of microfinance efforts.

The problem when evaluating microfinance effectiveness, and largely the explanation for the lack of academic vigor in the field, stems from hard to control selection biases. Logically, those that receive microloans are self-selected and therefore inherently more likely to be entrepreneurial/self-motivated. To control for this problem, Banerjee et al set out to conduct randomized large-scale trials to make sure the only difference between residents was easier ability to receive microloans in the treatment area. (Banerjee, Duflo, Glennerster & Kinnan, 2009)

Spandana, one of the largest microfinance organizations in India, was selected by Banerjee et. al to conduct the experiment. Spandana's constitutes use their loan for self-determined purposes (i.e. it does not have to go to starting a new microenterprise. Loans were generally categorized into old business owners, new entrepreneurs and non-entrepreneurs). Loans are made to self-formed solidarity groups (of women) with eligibility determined by "(a) female (b) aged 18 to 59, (c) residing in the same area for at least one year, (d) has valid identification and residential proof (ration card, voter card, or electricity bill), (e) at least 80% of women in a group must own their home." (Banerjee, Duflo, Glennerster & Kinnan, 2009) Spandana implementation was randomly selected from 120 potential sites, comparing results to control (non-selected) areas.

Results showed that household expenditure per adult did not vary significantly between treatment and control households. Interestingly, however, the composition of expenditures varied between the two groups. Households in treatment groups spent significantly more on durables (used in household business). This increase was offset partially by less spending on 'temptation goods' such as alcohol, tobacco, betel leaves, gambling, etc.

The modification in consumption habits give testament to the 'discipline of debt' and potential positive impact of microfinance efforts. However, microfinance often claims to empower women and allow for better adolescent schooling. In measuring the effects on women's decision-making, children's health and education spending the study found that: women in treatment areas were no more likely to be make decisions about household spending, investment, savings, or education (even focusing on non-food decisions, more sensitive to changes in empowerment did not change), and there was no effect on health or education outcomes.

A similar study was conducted by Jonathan Murdoch from the Department of Economics and HIID at Harvard University. In 1991-92 Murdoch conducted a cross-sectional survey of nearly 1800 households in Bangladesh served by microfinance programs of the Grameen Bank, the Bangladesh Rural Advancement Committee (BRAC), and the Bangladesh Rural Development Board (BRDB). The controls for the study were similar areas without MFI availability.

Murdoch founds that while MFI areas appeared more sustainable, when controlling for selection biases, access to the microfinance programs did not "yield meaningful increases in per capita consumption, the education of sons, nor the education of daughters." (Murdoch, 1998) However, the program did aid in diversifying labor supply over the course of the year. This led to a reduction in variability of consumption across seasons, a major problem in third world (largely rural) countries.

In conclusion, microfinance has been confirmed to enable households who "would not or could not pay the fixed cost associated [with start-up business] without borrowing, to become entrepreneurs." (Banerjee, Duflo, Glennerster & Kinnan, 2009) Likewise, it lubricates established business to expand their operations. However, some of the social impacts microfinance has claimed may be preliminary at best and grandiose at worst. In the vein of poverty being a "complex phenomenon and the many constraints the poor in general have to deal with," Graeme Buckley lists several factors that limit the poor beyond simply access to credit. He sees poverty more as a 'result systematic denial of rights':

- Enterprise as an impermanent portfolio of activities
- Particular role expectations, social sanctions and cultural standards

- The absence or weakness of property rights
- Weak states and the insecurity this implies
- Self-determined limits to growth
- The nature of labor input
- Historical precedent
- Weakness of market factors (Buckley, 1997)

Limitations on MFIs

In a 2002 study of MFIs in Bangladesh (where there are often as many as 10 different MFIs offering loans), Rutherford states that "their share in transaction-flow is less than 15% of the total" versus largely informal lending. As we saw before, only 8-14% of the market demand for microfinance is currently being met and less than 20% of SMEs in Kenya have ever received credit from formal financial institutions. (FSD Kenya, 2008) Rutherford concludes that their minor role in the market results from their lack of flexibility and reliability. (Rutherford, 2002) If MFIs choose not to (or unable to) offer saving services to poor people, then the poor are forced to use the informal sector to save; they are left facing decision of "relative risk of the various semi-and informal saving systems open to them". Those forced to save in the informal sector are bound to lose some money—probably around one quarter of what they save there. (Wright, 2005). The increasing difficulty poor people have accessing MFIs is exacerbating the savings problem.

Role of Trust and Social Capital: The Team's Observations

The WishVast team observed that trust was the resounded answer when asked the reason for solidarity groups deciding upon a particular MFI. Many MFIs promoted religion to build potential customer's trust. For example, Faulu's first core value is, "The Lordship of Jesus Christ."

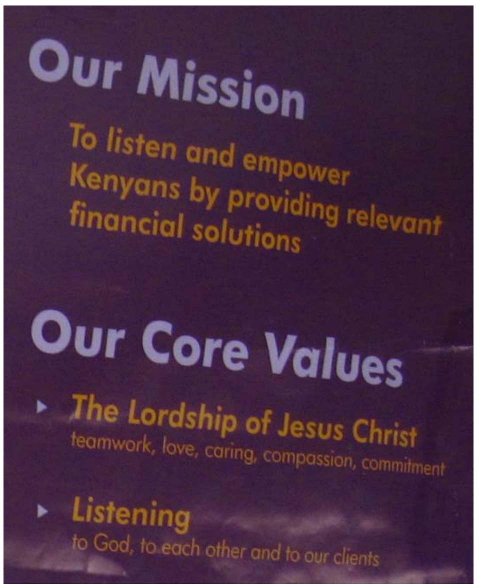

Figure 19: Sign posted inside the Faulu office: Nyeri, Kenya

Interestingly, none of the MFIs interviewed seemed to be concerned with a competitive advantage strategy. They all operated with the same lending platform, similar lending rates, payment structures, etc. The team spent much of their time analyzing and understanding the cultural differences that led to this status quo. They also a saw a great value opportunity for the MFIs if they could leverage the trust being formed within the solidarity groups. This would enable an MFI to identify which candidates would eventually have the capacity successfully utilize its services and target these as future customers. (Brown, Garguilo, Prindible & Mehta, pending acceptance)

MUTUAL DEPENDENCE BETWEEN THE THREE

To date, most of the research has focused on the binary relationship between MFIs and solidarity groups. Generally, the common wisdom has been that informal finance offers one lessons to the design of microfinance (e.g. Schreiner, 2001; Ardener and Burman 1995; Bouman 1995). However, none of the research we have come across has discussed the huge potential for MFIs, solidarity groups and *informal lending* to form a three way actor system that is mutually dependant and beneficial to each other. Indeed, Brau and Woller, in a comprehensive assessment of over 200 peer-reviewed articles that address the issue of microfinance, posed outside interaction of MFIs and solidarity groups as one of topics left to be explored within the field. (Brau and Woller, 2004)

While the benefits of capital that MFIs and solidarity groups could provide to the informal lending community is obvious, easily overlooked is the potential power such a large group of motivated individuals has to benefit the MFIs and solidarity groups. As MFIs scale their businesses, the gap for access to capital slows start-up growth. Long term, sustaining growth at the top is dependent on fueling growth at the bottom. Here steps in the informal lending community, allowing start ups the ability to develop the scale to be eligible for MFI-size loans. Other potential interactions include MFIs reaching out to solidarity groups (current clients) for "character loans", inquiring who they work with outside their solidarity group (informally) that would be prime for a microfinance loan. Here, MFIs could prep groups of informal borrowers for microfinance money. Likewise, it is important to remember that individuals will attempt to access capital that is most readily available to them, often drawing from multiple sources. This is not a lifestyle choice, but rather their livelihood.

PUTTING IT ALL TOGETHER

In a 2005 study in Naorbi, Kenya, Wright focuses on the story of Amina to demonstrate the typical finances of the Kenyan poor. Amina first lends and borrows from her neighbors in a complex web of reciprocal agreements to cover short-term emergencies, smooth consumptions, etc. Amina is also a member of a savings club, saving $.40 each week, which she will borrow at 5% interest if her neighbor arrangements are unreliable. The savings club liquidates two weeks before the main Eid festival—providing her with ~$41 to cover social obligations.

Additionally, Amina has $1.67 in a mud bank hidden from her husband in their roof. The money is for emergencies; it is hidden from her husband because she fears he will spend the money frivolous activities (temptation goods). Finally, for larger capital needs, Amina is in a solidarity group that is a member of BURO, Tangil, one of the more flexible MFIs in Bangladesh. “From BURO, Tangail, Amina cannot not only borrow for her husband’s rickshaw business, but also for larger scale emergencies that cannot be financed through the informal mechanisms outlined above.” (Wright 2005)

THE TEAM’S OBSERVATIONS

For individuals who survive on a daily economy, the norm is not to borrow money solely through any one channel; it is part of a complex web that includes many different options – family, friends, fools, RoSCAs, SACCOs, solidarity groups, and MFIs. Individuals the WishVast team spoke with in Nyeri, Kenya were extremely interested in brainstorming new ways to better gain access to capital, but in many ways they were frustrated and felt they were already exhausting every possible outlet they knew. All of these interactions were validation for the potential for a system like WishVast to radically change the status quo by building trust and social capital to access more capital at lower interest rates. (Brown, Garguilo, Prindible & Mehta, pending acceptance)

THE WISHVAST POTENTIAL

The WishVast Point system creates a transferable record of accountability, combating the lack of trust and mutual understanding found in informal lending practices. An entrepreneur is now able to leverage previous positive transactions as collateral in the form of WishVast Points. He or she can take their ratings from working with X and present to Y to increase trust and mutual understanding immediately, reducing uncertainties. All of the social capital built up amongst the informal lending community, once scattered amongst individual borrowers and lenders, is now captured and leveraged by the WishVast system. In a sense, WishVast is taking informal lending practices and formalizing them.

WishVast provides a medium for impoverished constituents to improve their lives by increasing their credibility and efficiency. By building trust in the informal lending community, we are able to narrow the gap that exists between MFIs and informal lenders. By extension, we are harnessing the built up social capital to become mutually beneficial for MFIs, solidarity groups and the informal lending community. The ultimate goal of WishVast is to empower, to employ and to elevate the standard of living of its users. Beyond the obvious economics benefits WishVast provides, it empowers its users to leverage previous successes to build vital social capital. As put forth by Muhammad Yunus, "Worst of all, economists have failed to understand the social power of credit. In economic theory, credit is seen as merely a means with which to lubricate the wheels of trade, commerce and industry. In reality, credit creates economic power, which quickly translates into social power." (Yunus, 1999)

HOW WISHVAST WOULD WORK

Take for example Paul, a micro-entrepreneur similar to Amina, who makes a living running a bike repair shop. While Paul has ample business sent his way, he is limited to the daylight hours to conduct his business; losing out on valuable income for his family. Paul would like to borrow $40 for a battery that would allow him to power a lamp to continue to repair bikes for 2.5 hours more per day, making ~$3.5 more per week. Paul has borrowed a dollar here and there from friends and family for tools and such, but has no one in his close-tie social network is able to lend him that much money. He has approached moneylenders but with no borrowing history or collateral, they would charge over 60% interest. The interest rate would eat away the entire additional profit he would make from the extra time working.

Enter WishVast. Paul is able to join a group of potential borrowers and lenders within a ten-mile proximity. Now, with a single text, Paul is able to reach several lenders stating his bike repair business, capital needs and reason for loan. Potential lenders check Paul’s WishVast rating and make him offers. Paul decides which offer is best and the system confirms the terms of the contract. Paul then purchases his battery and makes his scheduled payments. After the interaction is complete, both Paul and the lender rate their satisfaction with the each other.

Building a positive digital reputation could greatly enhance the ability for a prospective entrepreneur like Paul to get the loan he or she needs. The ability for participants to realize trust and social capital among those they don't know as well can only serve to increase informal lending opportunities and enhance RoSCAs, SACCOs, and solidarity groups. By increasing the pool of potential partners, WishVast ratings would allow people from all over to connect. Once connected, these people may also have the power to have a unified voice against MFIs who have great power over a single individual. As MFIs continue to demand more and more before approving loans, they become less and less like the Grameen model and become more like commercial banks. By affording people the opportunity to harness their trust and social capital, access to capital would become easier and fairer.

CONCLUSION

Access to capital is essential for fueling new ideas and innovation and eventually poverty alleviation. Building trust and social capital, however, is potentially more important as its implications extend far beyond just finance. Given that micro and small enterprises contribute to economic growth through many pathways, by truly understanding the dynamics of how people access capital and the way people manage their budgets, there are more opportunities to solve the root problems and help people (Ayyagari et al, 2003). With only 8-14% of the market demand for microfinance currently being met, and less than 20% of small to medium sized enterprises (SMEs) in Kenya having ever received credit from formal financial institutions, there is a large opportunity for improving the situation. Currently the path to capital is very convoluted and involves many different means, including but not limited to informal lending, RoSCAs, SACCOs, solidarity groups, and MFIs. If individuals could better leverage weak-tie relationships in their quest for capital, more doors could potentially be opened.
WishVast allows users to accrue points (and therefore social capital and trust) becoming a form of non-monetary collateral to allow entrepreneurs to access more capital at lower interest rates. The hope is that with WishVast in place, the journey to access capital might not take nearly as long as more informal lending opportunities could arise beyond the standard "who-you-know" networks. With a digital reputation, more opportunities might be available for people to join RoSCAs, SACCOs, and solidarity groups. The importance of trust and social capital are evident in every form of lending, and with a standardized rating system people may have more power to access the capital they need and realize their entrepreneurial aspirations.

REFERENCES

Adams, D. W. “Taking a Fresh Look at Informal Finance.” *Informal Finance in Low-Income Countries*, ed. D.W. Adams and D. A. Fitchett. Westview Press, Boulder, CO. 1992

Aleem, Irfan " Imperfect Information, Screening, and the Costs of Informal Lending: A Study of a Rural Credit Market in Pakistan." Vol. 4. No. 3: The World Bank Economic Review, 1990. 329-330. Web. 7 Mar. 2010.

Anderson, Siwan; Baland, Jean-Marie. "The economics of Roscas and intra-household resource allocation." *Tilburg University, Center for Economic Research*. N.p.: n.p., 2000. Web. 4 Mar. 2010.

Ardener, S. and S. Burman (1995) Money- go-rounds: The Importance of Rotating Savings and Credit Associations for Women, Oxford: Berg

Armendáriz, Beatriz and Jonathan Morduch. 2005. “The Economics of Microfinance.” Cambridge, MA: MIT Press.

Ayyagari, M., Beck, T., and A. Demirgüç-Kunt, 2003. “Small and Medium Enterprises across the Globe” World Bank Working Paper WPS2127

Bakhtiari, Sadegh. "Microfinance And Poverty Reduction: Some International Evidence." *International Business & Economic Research Journal* 5.12 (2006). Isfahan University, 2006.

Banerjee, Abhijit and Esther Duflo. “The Economic Lives of the Poor.” Journal of Economic Perspectives 21 (1): 141-167. 2007

Banerjee, Abhijit; Duflo, Esther; Glennerster, Rachel; Kinnan, Cynthia "The miracle of microfinance? Evidence from a randomized evaluation." *Massachusetts Institute of Technology*, October 2009. 1-8, 14. Web. 3 Mar. 2010.

BBC. *Mobile Phones Boom in Tanzania.* 2005.
<http://news.bbc.co.uk/1/hi/programmes/click_online/4706437.stm.>

Berenbach, *S.* and Guzman, D. (1992). *The Solidarity Group Experience.* Bethesda: Gemini Working Paper No. 31.

Bouman, F. J. A. 'Rotating and accumulating savings and credit associations: a development perspective', World Development, 1995. 23(3):371-384.

Brau, James C. and Woller, Gary M. " Microfinance Institutions: A Comprehensive Review of the Existing Literature and an Outline for Future Financial Research." Journal of Entrepreneurial Finance and Business, (2004): 28-30.

Brown, A.; Garguilo, S.; Prindible, M.; & Mehta, K. “Relationships between microfinance, solidarity groups, and informal lending in developing countries: the importance of trust and social capital.” Journal of Developmental Entrepreneurship: Humanitarian Engineering and Social Entrepreneurship. Pending acceptance.

Buckley, Graeme. "Microfinance in Africa: Is it Either the Problem or the Solution?." *Department for International Development, London, UK*. Vol. 25. No. 7: World Development, 1997. 1081-1082, 1088-1092. Web. 9 Mar. 2010.

de Soto, Hernando. 1989. The Other Path: The Invisible Revolution in the Third World, New York, NY: Harper and Row.

Easterly, William. The White Man's Burden: Why the West's Efforts to Aid the Rest Have Done So Much Ill and So Little Good: The Penguin Press HC, 2006. 8. Print.

FSD Kenya. (2008). The potential for credit scoring for SME lending in Kenya. Nairobi.

Garguilo, S., Prindible, M., Syata, A. O., & Mehta, K. "Labor Hiring Practices and Produce Supply Chains in Rural Kenya: the Case for WishVast Networking." International Journal for Service Learning in Engineering: Humanitarian Engineering and Social Entrepreneurship. 2010.

Gonzalez-Vega, Claudio; Schreiner, Mark; Meyer, Richard L.; Rodriguez, Jorge and Navajas Sergio. "Bancosol: The Challenge of Growth for Microfinance Organizations." Rural Finance Program, Department of Agricultural Economics; The Ohio State University (1996): 20, 22.

Grameen Bank, Head Office. Grameen Communications, 9 June 2009. Web. 9 Mar. 2010. <http://web01.grameen.com/bank/>.

Granovetter, Mark. "The strength of weak ties." *American Journal of Sociology*, 1973: 1360-1380. Hansen, E L. "Entrepreneurial network and new organization growth." *Entrepreneurship: Theory & Practice*, 1995: 7-19.

Gugerty, Mary Kay. "You can't save alone: Commitment in Rotating Savings and Credit Associations in Kenya", Economic Development and Cultural Change, 2007. 55: 251-282.

Higbee, Jason. "An Introduction to Merry-Go-Rounds in Kenya." *Covalent Global Capital*. Covalent Global Capital, Inc., 20 Apr. 2009. Web. 5 Mar. 2010.

Kafewo, D S. "Simli Radio: deconstructing the myth of broadcasting." *Africa Media Development Initiative*, 2006.

Liedholm, Carl and Mead, Donald C. 1987. "Small Scale Industries in Developing Countries: Empirical Evidence and Policy Implications." MSU International Development Paper No. 9.30

Liedholm, Carl and Mead, Donald C. 1993. "The structure and growth of microenterprise in Southern and Eastern Africa: Evidence from recent surveys." GEMINI Working Paper, No. 36, PACT Publications, New York.

Liedholm, Carl and Mead, Donald C. 1998. "The Dynamics of Micro and Small Enterprises in Developing Countries". World Development, 26 (1): 61-74.

Malkin, Elisabeth. 2008. "After Success, Problems for Microfinancing in Mexico," New York Times, April 5, 2008.

Matua, John M. and Oyugi, Lineth N. "Access to Financial Services and Poverty Reduction in Rural Kenya" The Namibian Economic Policy Research Unit; Nepru Working Paper No. 108 (April, 2006): 1, 16-21.

Mehta, K., Brannon, M., Zappe, S., Colledge, T., "eplum Model of Student Engagement: Expanding non-travel based Global Awareness, Multi-disciplinary Teamwork and Entrepreneurial Mindset Development", International Division, American Society of Engineering Education (ASEE), Annual Conference 2010 (Accepted pending revisions)

Mehta, Khanjan, and Ladislaus Semali. "WishVast: Building Trust and Social Capital using Cellphones." *Proceedings of the International Multiconference on Computer Science and Information Technology.* Mragowo, Poland, 2009. 375 – 381.

Mehta, Khanjan, Ladislaus Semali, Audrey Maretzki, Jill Findeis, Gretchen Kuldau, and Katelyn Willyerd. "Cellphones and Social Networks: Defining new opportunities and discovering champions for entrepreneurial ventures in developing communities." *Proceedings of the NCIIA Annual Meeting.* Washington DC: NCIIA, 2009.

Microfinance Council of the Philippines Database. Annual Report: Center for Agriculture and Rural Development, Inc. 2003-2004. Web. 4 Feb. 2010. <http:// www.cardbankph.com>.

Microsoft Research India. *Digital Green.* August 2008. http://www.digitalgreen.org.

Miracle, Marvin P., Diane S. Miracle and Laurie Cohen. "Informal Savings Mobilization in Africa." Economic Development and Cultural Change, 28.4 (1980): 701-702.

Montgomery, Richard. "Disciplining or Protecting the Poor? Avoiding the Social Costs of Peer Pressure In Micro-Credit Schemes." Journal of International Development (1996): 290- 291.

Morduch, Jonathan. 1999. “The Microfinance Promise,” Journal of Economic Literature 37 (4): 1569-1614.

Morduch, Jonathan "Does Microfinance Really Help the Poor? New Evidence from Flagship Programs in Bangladesh." *Department of Economics and HIID, Harvard University & Hoover Institution, Stanford University*, June 27, 1998. 1-8, 14. Web. 3 Mar. 2010.

Nissanke, M. (1992) “Mobilizing domestic resources for African development and diversification: Structural impediments to financial intermediation.” *Economic Reform in Sub-Saharan Africa*, ed. A. Chhibber and S. Fischer. World Bank, Washington, DC.

Rutherford, Stuart, “Conversations with Poor Households in Bangladesh about Managing Money”, Institute for Development Policy and Management, University of Manchester, (2002).

Schreiner, Mark. “Informal Finance and the Design of Microfinance.” Vol. 11, No. 5, Development in Practice (Nov., 2001). Taylor & Francis, Ltd. on behalf of Oxfam GB: pp. 637

Shahidur, Khandker R. "Grameen Bank: Impact, Costs, and Program Sustainability." *"Credit Programs for the Poor: Household and Intrahousehold Impacts and Program Sustainability"*. Vol. 14. N.p.: Asian Development Review, 1996. 68-70. Web. 4 Mar. 2010.

Steel, William F.; Aryeetey, Ernest; Hettige, Hemamala; Nissanke, Machiko "Informal Financial Markets Under Liberalization in Four African Countries." Vol. 25. No. 25: *World Development*, 1997. 817-819. Web. 2 Mar. 2010.

Straub, Stephane “Informal Sector: The Credit Market Channel.” Vol. 25. No. 25: *Journal of Economic Development*, 2005. 299-301. Web. 4 Mar. 2010.

Wai, U. T. (1992) “What Have We Learned about Informal Finance in Three Decades?” *Informal Finance in Low- Income Countries,* cd. D. W. Adams and D. A. Fitchett. Westview Press, Boulder, CO.

Wright, Graham A. "Understanding and Assessing the Demand for Microfinance." *Microsave* (2005). Web. 5 Mar. 2010. <http://www.afd-mozambique.org>.

Yunus, Muhammad (with Alan Jolis). “Banker to the Poor: Micro-lending and the battle against world poverty”, Public Affairs, NewYork, 1999, pp. 62-63, 121

Zaman, Hassan. “The Scaling-Up of Microfinance in Bangladesh: Determinants, Impact, and Lessons.” World Bank Policy Research Working Paper 3398. New York: World Bank, 2004.

WWB's Global Network for Banking Innovation (GNBI). Women's World Banking, 2009. Web. 1 Mar. 2010.

World Bank. 2004. World Bank Development Report 2005: A Better Investment Climate – for Everyone, New York, NY: World Bank and Oxford University Press.

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