The use of microfinance services among economically active disabled people – evidence from Uganda

Key words: Microfinance, disability, Uganda, savings, ROSCA, Microcredit

Abstract

This study investigates the use of microfinance services among economically active disabled people in Uganda. The findings suggest that disabled people make more use of microfinance services than previously assumed. A total of 89% of the survey's respondents state that they have used at least one type of microfinance service. Informal self-help schemes are more easily accessed than formal institutional schemes, and disabled people access more savings than loans. The multivariate analysis shows that access to microfinance services is positively related to education level. In addition, deaf people generally have less access to microfinance than those in other disability categories.

1. Introduction

According to the United Nations (UN, 2008), approximately 10% of the global population have disabilities; 80% of these individuals live in developing countries, and for those who live on less than $1 a day, 1 in 5 has a disability. The cost of disability is high for the affected individual, for his/her family and for society. All the same, disability is generally not an integrated part of development policies (Kett *et al.,* 2009), and efforts to support disabled people tend to be based on charity and government support (Gooding & Marriot, 2009) rather than socio-economic integration (ILO, 2002; Lewis, 2004). In developing countries, 80–90% of persons with disabilities do not have formal jobs, and government and charity support are in practice limited, so most of these people turn to self-employment (UN, 2008).

For the self-employed, access to capital is vital. It is argued that access to microfinance should be a priority in pro-disability livelihood policies (Handicap-International, 2006; Cramm & Finkenflugel, 2008; Martinelli & Mersland, Forthcoming), but claims are put forth that disabled people seldom have access to microfinance (Cramm & Finkenflugel, 2008). However, data to support the claim of low access are limited, and micro*finance* is mostly understood as micro*credit*. In this article, we broaden this view and bring in firsthand evidence to support the analysis. We concentrate the analysis on economically active disabled people and first analyse what their initial source of capital was when they began being self-employed. We then study whether economically active disabled people have access to credit, whether they are saving and to what degree they participate in informal financial arrangements like Rotating Savings and Credit Associations (ROSCAs). Finally, we search for individual characteristics that influence whether a disabled person has access to microfinance services.

A survey carried out by the National Union of Disabled People in Uganda (NUDIPU) makes up the data for this study. The findings indicate that economically active disabled people start out livelihood activities with their own means or with the help of families and friends. Even though the respondents are very poor (e.g., 53% reported a monthly income of less than $50) they have much better access to microfinance than previously thought. A total of 89% of the

survey's respondents state that they have used at least one type of microfinance service. Participation in a ROSCA or in other types of saving arrangements is the most typical kind of microfinance engagement. The findings of this study illustrate the importance of understanding microfinance as a broader issue than that of the traditional credit provided by a Microfinance Institution (MFI) or a development project.

The rest of this paper proceeds as follows. Section 2 discusses the disability market in Uganda and presents the microfinance services available. Section 3 reviews the disability literature related to microfinance and sets up the hypotheses to be tested. Section 4 presents the data and the methodologies. Section 5 presents and discusses the results. Section 6 concludes.

2. Microfinance services for disabled people

Defining disability is difficult, and, depending on the definition used, researchers come up with percentages ranging from around 3% to nearly 20% of a given population. In Uganda, three surveys have studied the prevalence of disabilities. Using different definitions of disability, the Population and Housing Census (2002) reported that 3.5% of the population was made up of disabled people, the Uganda National Household Survey (2005) reported a figure of 7.1%, and the Uganda Demographic and Health Survey (2006) reported a figure of 20%. The question in the latter study was whether a person had difficulty seeing, hearing, walking or climbing stairs, remembering or concentrating, providing self-care, or communicating. The large differences in disability statistics are alarming but fall outside the scope of this paper. What is important is that regardless of statistical methods and definitions, the disability segment is large and should be at the forefront of development policies. At the same time, the disability segment constitutes an important market opportunity for providers of any goods or services, including microfinance.

Martinelli and Mersland (Forthcoming) explain that there are basically three schemes available for the supply of microfinance: formal institutional schemes, informal self-help schemes and ad-hoc schemes. *Institutional schemes* are formal organisations incorporated as

public banks, shareholder firms often registered as commercial banks or non-bank financial institutions, non-profit organisations, often referred to as Non-Governmental Organisations (NGOs) and formally registered member-based organisations such as Savings and Credit Cooperatives (SACCOs). The term Microfinance Institution (MFI) is often used to identify the formal providers of microfinance.[1] Based on a limited set of data from a few MFI branches in Uganda, Mersland et al. (2009) provide evidence that only around 0.65% of the MFI clients have a disability.

Informal self-help schemes can be organized with donor support but are normally organised by the people themselves, without any support from an outside organisation. They are often referred to as Rotating Savings and Credit Associations (ROSCAs), have been around for centuries, and exist in virtually every developing country including Uganda (Bouman, 1995). A group of 15-30 people pool their savings weekly or monthly. These savings are distributed as grants or loans among the members in a rotating system. Due to social stigma, it is argued, disabled people are often denied access to self-help microfinance schemes. In a study from Bangladesh, Thomas (2000) finds that the proportion of disabled members of groups varied from 0.3% to 5% in donor-supported self-help microfinance projects that did not specifically target disabled people, while the percentages of disabled members varied from 18% to 23.5% in projects specifically targeting disabled people but also allowing non-disabled members. Former studies reporting the prevalence of disabled members in non-donor-initiated ROSCAs are to our knowledge nonexistent.

Ad-hoc schemes are development projects or revolving funds organised especially for disabled people by NGOs, Community-Based Organisations (CBOs) or Disabled People's Organisations (DPOs) and are funded by donors (Handicap-International, 2006). The focus of these schemes is to provide the beneficiaries with loans, often in combination with training or health services. Repayment rates are typically not maximized, and interest rates are normally subsidised. The sustainability of the services is typically low, and the number of beneficiaries

[1] Some will not include SACCOs, public banks or commercial banks under the umbrella of the term MFI.

reached is limited, often less than 100 (Handicap-International, 2006). For those who are reached, ad-hoc schemes can be important. However, because the cost of ad-hoc schemes is disproportionally high, the vast majority of disabled people can only be reached through self-help schemes or institutional schemes (Dyer, 2003), which are the focus of this paper.

3. Literature review and hypotheses

The four questions guiding this study are as follows. 1) What is the original source of capital used by disabled people to start up self-employment activities? 2) To what extent do economically active disabled people access microfinance services? 3) What types of microfinance service are more used by disabled people? 4) What are the individual characteristics influencing whether or not a disabled person has access to microfinance services?

It is commonly argued that disabled people are very poor and need access to external support from donors to form up the needed working capital to become self-employed. Over the years, hundreds of projects, sponsored by organisations like the World Bank, Handicap International or Leonard Cheshire International, have provided disabled people with start-up capital to initiate self-employment activities. The results have generally been weak. The number of beneficiaries per project has been low and, without the necessary personal aptitude, technical knowledge and market accessibility, the initial working capitals have often faded. This should come as no surprise. The entrepreneurship literature (Carter & Auken, 1990) is clear on the relation between personal economic sacrifice/risk and firm survival. The success rate for newly established businesses is positively related to the entrepreneurs' personal stakes in the projects. This knowledge is incorporated into most MFIs' credit methodologies allowing lending only to expand *existing* business activities (Ledgerwood, 1999). We thus expect to find that existing economic activities have been initiated with the disabled person's own means.

Mersland et al. (2009) explain that there are several mechanisms excluding disabled people from access to microfinance. These are exclusion by staff due to attitudes, exclusion by credit design, exclusion by non-disabled members in credit or savings groups, exclusion by the disabled themselves because of low self-esteem and repeated experiences of rejection during life, and exclusion because of the disability itself. Findings in Mersland et al. (2009), Handicap-International (2006) and Thomas (2000) confirm that few disabled people access credit in traditional MFIs or donor-supported self-help schemes. However, whether disabled people have access to commercial banks, SACCOs or ROSCAs is still unknown in the literature. Ex ante expectations could indicate that because disabled people, like other poor people, are considered to be risk averse, they should prefer regulated commercial banks when entrusting their savings. Still, the business model of the commercial banks, which normally focus on better-off clients, could make it difficult for most disabled people to access their services. At least in theory, the SACCOs have a business model that is better aligned with the members' needs (Mersland, 2009) and should therefore be relatively better able to reach out to disabled people. As for the ROSCAs, local stigma regarding disabled people could indicate that they are excluded from membership or may experience inappropriate pressure from other group members (Montgomery, 1996). However, because ROSCAs in Uganda are literally everywhere and since those living close to the disabled people are the ones with the best opportunity to assess their economic activities, membership in ROSCAs is probably the most commonly used microfinance service for disabled people. When it comes to the type of service accessed, we expect to find that disabled people, like poor people in general (Rutherford, 2000; Matin *et al.,* 2002) access savings to a much larger extent than they access loans.

We also present hypotheses for the influence of individual characteristics on the access to microfinance services, based on findings in prior research (Helms, 2006; UN, 2008; Aghion & Morduch, 2005; Handicap International, 2006). The individual characteristics include age, gender, marital status, number of dependants, type and age of disability, education, and source

of income. We devote particular attention to the disability type. Three types of disabilities are investigated: physical handicaps, visible and hearing impairments. Within the disability community, it is argued that those with visible and hearing impairments are generally worse off than those with physical handicaps, and, as a result, we hypothesise that they do not access microfinance services as easily (Handicap-International, 2006). All hypotheses are summarised in Table 1.

[Insert Table 1 about here]

4. Data and methodology

The data for this study are collected by the National Union of Disabled Persons of Uganda (NUDIPU) in trainings organised for economically active disabled people. NUDIPU is Uganda's most important disability organisation, has branches across the country and is an umbrella organisation where most Disabled People's Organisations are members. The trainings took place in urban centres across Uganda, and those participating were urban, semi-urban and close-by rural dwellers. Local NUDIPU members and public disability rehabilitation officers were responsible for mobilising the training participants. Participants were selected based on two basic criteria – they should have some type of disability, and they should have a self-employment economic activity running. An economic activity was defined as anything from the smallest farm, the tiniest kiosk, to selling a few tomatoes in the street. The training was offered for free during a full-day event. Transportation costs were reimbursed, and participants were offered lunch. No cash allowances were paid, and no participants were offered the opportunity to stay overnight. An average of around 60 disabled people participated in each training, and, according to NUDIPU, it was easy to mobilise participants. During the training, which took place in 2008, a questionnaire forming the dataset used in this study was distributed. When needed, a NUDIPU official helped the participants to complete the questionnaires. Generally, according to NUDIPU, around 80% of

the participants filled out the questionnaires.[2] Taken as a whole, the dataset represents disabled persons with existing economic activities living in urban and neighbouring rural areas. In total, the dataset consists of 841 respondents.

The variables used in this study are described in Table 2. Except for the respondents' number of dependants, all variables are indicator variables. These variables are equal to one if the respondent belongs to a certain sub-category and zero otherwise. Table 3 presents descriptive statistics for each of the variables. Panel A shows that a majority of the respondents are middle-aged but that both old and young people are represented in the study. There are slightly more men than women participating in the survey. About two thirds of the respondents are married. A total of 11% of the respondents are deaf, 12% are blind, and 73% have various types of physical handicaps. Having a mental handicap was not a specific alternative in the questionnaire, but only 4% of the respondents ticked the "other" category when indicating their type of handicap. Because we do not have information on the nature of the disabilities of the "other" category, we disregard this group in the empirical analysis. The majority of the respondents got their disability either at birth or during childhood. A total of 1 out of 10 respondents has no education whatsoever. Also, 44% have completed primary school, while 47% have attained an education level higher than that of primary school. Half of the participants achieve their primary income from farming, and an additional 39% have it as their secondary source of income.

[Insert Table 2 about here]

Panel B of Table 3 provides information on the financial status of the respondents. The respondents are generally very poor, with monthly income below 100,000 Ugandan shillings (about $50) for more than half of the sample. This is also reflected in the sizes of the participants' ROSCA contributions, savings accounts and loans.

[2] The questionnaire is available from the authors upon request.

[Insert Table 3 about here]

5. Findings and discussion

Figure 1 shows that most disabled people who are economically active got their starting capital from their own means (personal savings or sale of assets) or from family members. Loans are generally not what are used to start up businesses, confirming our hypothesis that disabled people are not different from non-disabled people when it comes to financing the initiation of their economic activities. The findings contrast popular claims from Disabled People's Organisations and other advocates that disabled people need donor support to get involved in economic activities.

[Insert Figure 1 about here]

5.1 Access to microfinance and individual characteristics

To what extent do economically active disabled people have access to microfinance services? Table 4 presents the findings. A total of 558 out of the 841 respondents (66%) state that they are members of a ROSCA.[3] A total of 72% of the respondents save money regularly, and 50% (70% of all the people who save regularly) save to an account in a formal institution, defined as a commercial bank, MFI or SACCO. Also, 39% percent of the respondents have borrowed money, but only 15% had a loan at the time the survey was conducted. Untabulated results show that 748 persons, 89% of the respondents, have borrowed or saved or been members of a ROSCA. Even when the respondents who have only participated in a ROSCA are excluded, 80% of the respondents have been involved in microfinance services. Taken together, a surprisingly high share of economically active disabled people do access different forms of microfinance services. The findings that more people access savings than loans and more

[3] The percentage share is estimated relative to the total sample of 841 respondents. Respondents who have not answered the question are assumed not to use the microfinance service in question. The number of missing observations is low, and robustness checks indicate that no conclusion is altered if the percentages are computed from the number of respondents who have actually answered the question.

participate in ROSCAs than in MFIs are not surprising as they confirm general microfinance knowledge (Rutherford 2000).

[Insert Table 4 about here]

The fact that only about 40% of those who report having had a loan currently have an outstanding loan is interesting. Because the microfinance market in Uganda has grown steadily, the reason cannot be that the supply of credit has been reduced. We believe that the reason is to be found in the MFI-customer relationship. For instance, disabled people may have defaulted on their loans and thus have been denied renewals, or they may have found partnering with the MFI to be too expensive due to high interest rates or too troublesome due to the nature of their disabilities. Another plausible explanation is that the MFI has found servicing the disabled person to be too difficult. For example, communicating with a deaf person can be challenging and time-consuming. However, the finding that 66% are members of a ROSCA illustrates that the ongoing servicing of disabled people should not be impossible. We thus recommend that new research look into loan-renewals and MFI-customer dynamics.

Our first hypothesis regarding individual characteristics says that middle-aged people have easier access to microfinance services than do young and old people. Panel A of Table 4 suggests that teenagers definitely have less access than others to such services. Still, it does not appear that the oldest group of people is particularly worse off when it comes to savings or ROSCA participation. Regarding borrowing, our findings appear to be in line with the hypothesis. The age group from 36 to 50 years has a considerably higher proportion of loans than the other groups. Our second hypothesis on individual characteristics says that women are more frequent users of microfinance services than men. There is a significant difference in favour of women when ROSCA is considered.[4] However, when saving and borrowing are

[4] We apply the term ”significant” when the statistical significance level is below 10% in a two-sided t-test. The t-tests are available from the authors upon request.

evaluated, the differences are small and insignificant. In fact, males appear to be saving slightly more than females. The third hypothesis, that married people are more involved in microfinance than the unmarried, is confirmed.

Panel B of Table 4 shows how access to microfinance services is related to disability characteristics. We hypothesise that it is easier for people with a physical handicap to access microfinance services than it is for the blind and deaf. This hypothesis is only partly confirmed in this first analysis. As for membership in ROSCAs, deaf people have significantly less access to this service than do people with a physical handicap. However, there is no significant difference between people with a physical handicap and the blind. When it comes to savings, both the blind and the deaf appear to be worse off. Nevertheless, deaf people seem to have a relatively higher share of their savings in formal institutions. Contrary to our expectations, there is no significant difference between the groups when access to microcredit is considered. Still, when the groups are asked about their current situation, it emerges that far more physically disabled people have a loan than do blind and deaf people. This should again motivate researchers to look into how communication skills affect MFI-customer dynamics.

The findings support the hypothesis that a person disabled since birth or childhood is one with less access to microfinance. People who have been disabled since birth are less frequently members of a ROSCA and are also less involved in savings. The respondents who became handicapped as teenagers and adults have also had more loans than the rest.

Panel C of Table 4 outlines differences between sub-groups when education and the source of income are considered. The expectation that access to microfinance services is positively related to education is confirmed. People without any education are less likely to be members of ROSCAs. The sub-groups appear to be relatively equally involved in saving, but there are huge differences when the type of saving is considered. People with a higher education level typically save in formal institutions, while only half of the no-education, regular-saving group

does the same. There are significant differences between all sub-groups, suggesting that formal saving is an increasing function of the level of education. The same picture is found when access to microcredit is considered. People with a higher education level borrow more money than do people with only primary education, who again borrow more than people without any education. The last part of Panel C reports differences in microfinance involvement based on whether farming is the main or the secondary source of income. We find some support for the hypothesis of farming having less access to microfinance but only when loans are considered.

We conclude this sub-section by examining possible differences in the use of microfinance services based upon the type of disability. Non-tabulated results show small differences between the disability groups when primary savings institution is examined. However, blind people appear to be relatively more prone to saving in ROSCAs, at the expense of MFIs and commercial banks. We also look into differences in loan size between the disability groups. The average loan amount is largest for the physically disabled, at about 570,000 Ugandan shillings, compared to 325,000 and 410,000 Ugandan shillings for the deaf and blind, respectively.

5.2 Multivariate analysis

To draw conclusions based on descriptive and bi-variate analyses may be premature, as these analyses do not incorporate possible interactions between the explanatory variables. This sub-section tests the robustness of the conclusions by presenting the results of a multivariate logit regression where all individual characteristics are controlled for simultaneously. Each of the dependent variables listed in Table 2 is regressed on the explanatory variables for individual characteristics. The results from the five regressions are displayed in Table 5.

[Insert Table 5 about here]

The first regression (column one) has ROSCA membership as the dependent variable. The first set of explanatory variables is age. Age2 (20-35 years) is excluded from the analysis, so the coefficients on the other age groups are to be interpreted relative to this group. We note that teenagers appear to be significantly less likely than the others to join a ROSCA. The data do not support any significant differences between the other age groups. The coefficient on gender is negative and significant, suggesting that women more frequently become members of ROSCAs than men do. The disability category does not seem to matter for participation in ROSCAs, but people who encountered their disability at birth are less likely to be part of a ROSCA. We obtain clear and significant results when education level is considered indicating that people with more education are more likely to be ROSCA members.

The two next regressions relate to saving. The first one studies saving in general, while the other analyses saving in formal institutions. The results are quite similar, meaning that the individual characteristics that drive saving in general are also the driving forces for saving in formal institutions. The results show no significant differences related to age and gender, but they do indicate that married people tend to be more involved in saving than unmarried people. Deaf and blind people tend to save less than physically disabled people. Consistent with this result, we also find that the blind save less in formal institutions. An interesting result is the one showing that even if deaf people in general are less prone to save than those with a physical handicap, they tend to put a much higher share of their savings in *formal institutions* than the two other disability groups do. We do not find this surprising. Because saving in a ROSCA or similar requires considerable communication with other members, deaf people prefer putting their savings into formal institutions, where they do not have to engage in communication very much. Regarding the age of emergence of the disability, people who became disabled as adults seem to save more than others do. Saving also appears to be positively related to one's education level. However, the coefficients are significant only for the persons whose education level is above that of primary school.

The two final regressions analyse borrowing probability as a function of individual characteristics. The first one investigates whether the respondents have ever borrowed, whereas the second one focuses on those who had a loan at the time the survey was conducted. The first regression suggests that the middle-aged are more likely to borrow than the three other sub-groups, a finding in accordance with our hypothesis. Moreover, both regressions strongly indicate that females have better access than males to microcredit. Married people also seem better off as far as access to loans is considered. Deaf people are less likely to have loans today than the blind and physically disabled. Surprisingly, there is some evidence that people who have been disabled since birth are currently more prone to borrow than others. In accordance with our hypotheses, people with an education level above that of primary school borrow significantly more than the rest, while farmers seem to be worse off than others as far as access to microcredit is concerned.[5]

Overall, we can summarise this section by noting that the multivariate analyses generally support our hypotheses. There is clear evidence that women borrow more and more frequently participate in ROSCAs than men do. There is some evidence that the middle-aged have better access to microfinance services than others, particularly teenagers. Married people are more likely than the unmarried to both save and borrow money. There is also evidence that deaf people are worse off with regard to saving and access to microcredit. Persons with a higher education level than primary schooling have better access to microfinance services than those with no education. This conclusion is robust, as all of the regressions report identical findings. The regressions show that farmers appear to be less involved in microfinance than others, but the coefficient is only significant as far as borrowing is concerned.

[5] A relatively large number of respondents did not indicate a secondary source of income. This depresses the number of observations in the multivariate regressions. However, none of the conclusions is altered if the secondary source of income is excluded from the analysis. Note also that unreported robustness checks controlling for the respondents' income levels confirm the results presented in Table 5. The income level is generally not a significant explanatory variable in the alternative regressions.

6. Conclusions

Using new data from a survey carried out by the National Union of Disabled People in Uganda (NUDIPU), this paper responds to the need for academic research and empirical evidence in the study of microfinance access for disabled people (Martinelli & Mersland, Forthcoming). The findings indicate that poor but economically active disabled people make more use of microfinance services than previously thought. A total of 72% report that they save regularly (50% in a formal institution), and 39% have borrowed money. Additionally, 66% are members of informal financial groups like ROSCAs. When it comes to the personal characteristics of those accessing microfinance, the findings generally echo existing microfinance knowledge. For instance, women have better access than men, married people are more prone to both saving and borrowing money than the unmarried, and farmers have less access to microfinance services, especially loans, than people with income from other businesses do. Regarding disability characteristics, the findings confirm the expectation that deaf people are more excluded than are other disabled people, particularly when it comes to accessing credit.

From a policy perspective, the paper presents several interesting findings. For instance, the positive relation between education and the use of microfinance services highlights the importance of assuring education for disabled children. Another message of this study is the importance of getting disabled people to become economically active. As illustrated, disabled people with some kind of economic activity are integrated into society and thereby have access to services, which in this case is microfinance. However, the survey demonstrates the importance of "self-help" in becoming self-employed, as nearly all respondents initiated their activities with their own or their families' means. This finding could motivate rethinking about donor programs, where grants and cheap loans tend to be important elements in facilitating disabled people's entry into economic activities.

The data for this study has two limitations that should be addressed by new research. First, there is a need for data that allows comparison between economically active and non-economically active disabled people. Second, there is need for studies that compare disabled people's use of microfinance services with that of the non-disabled population. In addition, studying the dynamics of the customer-MFI relationship and what factors enable or disenable disabled people's access to microfinance is needed. Finally, we recommend studying how access to microfinance influences disabled people's quality of life. In particular, these studies should not only look at possible improvement in incomes and assets but should also study whether the access to microfinance influences disabled people's self-esteem and general integration into society.

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Table 1: Summary of Hypotheses

	Hypothesis
Source of Capital	Economically active disabled people have financed the initiation of their income generating activities with their own means.
Microfinance Services	Informal self-help schemes are more easily accessed by disabled people than formal institutional schemes.
	Disabled people access more savings than loans.
Characteristics	
Age	Middle-aged people have easier access to microfinance services than young and old people do.
Gender	Women are more frequent users of microfinance services than men.
Marital Status	Married people are more involved in microfinance than unmarried people are.
Number of Dependants	Access to microfinance services is negatively related to the number of dependants.
Type of disability	It is easier for people with a physical handicap than for the blind and deaf to access microfinance services.
Age of disability.	People use more microfinance services if they were older when they became handicapped.
Education	There is a positive relationship between the education level and the use of microfinance services.
Type of Business	People with income from farming are less likely to be involved in microfinance than people with income from other businesses are.

Table description: Table 1 displays the study's hypotheses for the empirical analyses.

Table 2: Variable Definitions

Dependent Variables	**Definitions**
ROSCA	Indicator variable equal to 1 if the respondent is part of a ROSCA group; 0 otherwise.
Regular Savings	Indicator variable equal to 1 if the respondent saves regularly; 0 otherwise.
Savings in Formal Inst.	Indicator variable equal to 1 if the respondent keeps his/her savings in a formal institution such as a commercial bank, MFI or SACCO; 0 if savings are outside of a financial institution or in a ROSCA-group.
Loan Ever	Indicator variable equal to 1 if the respondent has ever had a loan; 0 otherwise.
Loan Today	Indicator variable equal to 1 if the respondent had a loan in 2008; 0 otherwise.
Independent Variables	**Definitions**
Age1(Teenagers)	Indicator variable equal to 1 if the respondent is a teenager; 0 otherwise.
Age2(20-35 Years)	Indicator variable equal to 1 if the respondent is 20-35 years old; 0 otherwise.
Age3(36-50 Years)	Indicator variable equal to 1 if the respondent is 36-50 years old; 0 otherwise.
Age4(Over 50 Years)	Indicator variable equal to 1 if the respondent is above 50 years old; 0 otherwise.
Gender (Male=1)	Indicator variable equal to 1 if the respondent is male; 0 if female.
Marital Status (Married=1)	Indicator variable equal to 1 if the respondent is married; 0 otherwise.
Dependants	The respondent's number of dependants.
Disability Category1(Physical)	Indicator variable equal to 1 if the respondent has a physical handicap; 0 otherwise.
Disability Category2(Deaf)	Indicator variable equal to 1 if the respondent is deaf; 0 otherwise.
Disability Category3(Blind)	Indicator variable equal to 1 if the respondent is blind; 0 otherwise.
Age Disability1(Birth)	Indicator variable equal to 1 if the respondent was born with his/her handicap; 0 otherwise.
Age Disability2(Childhood)	Indicator variable equal to 1 if the respondent got his/her handicap during childhood; 0 otherwise.
Age Disability3(Teenage)	Indicator variable equal to 1 if the respondent got his/her handicap as a teenager; 0 otherwise.
Age Disability4(Adult)	Indicator variable equal to 1 if the respondent got his/her handicap as an adult; 0 otherwise.
Education Level1(None)	Indicator variable equal to 1 if the respondent does not have any education; 0 otherwise.
Education Level2(Primary)	Indicator variable equal to 1 if the respondent has completed primary school; 0 otherwise.
Education Level3(Above Primary)	Indicator variable equal to 1 if the respondent has had education above the primary school level; 0 otherwise.
Main Source of Income (Farming=1)	Indicator variable equal to 1 if the respondent has farming as his/her main source of income; 0 otherwise.
Secondary Source of Income (Farming=1)	Indicator variable equal to 1 if the respondent has farming as his/her secondary source of income; 0 otherwise.

Table description: Table 2 lists and defines the variables used in the empirical analyses of this study.

Figure 1: Starting Capital

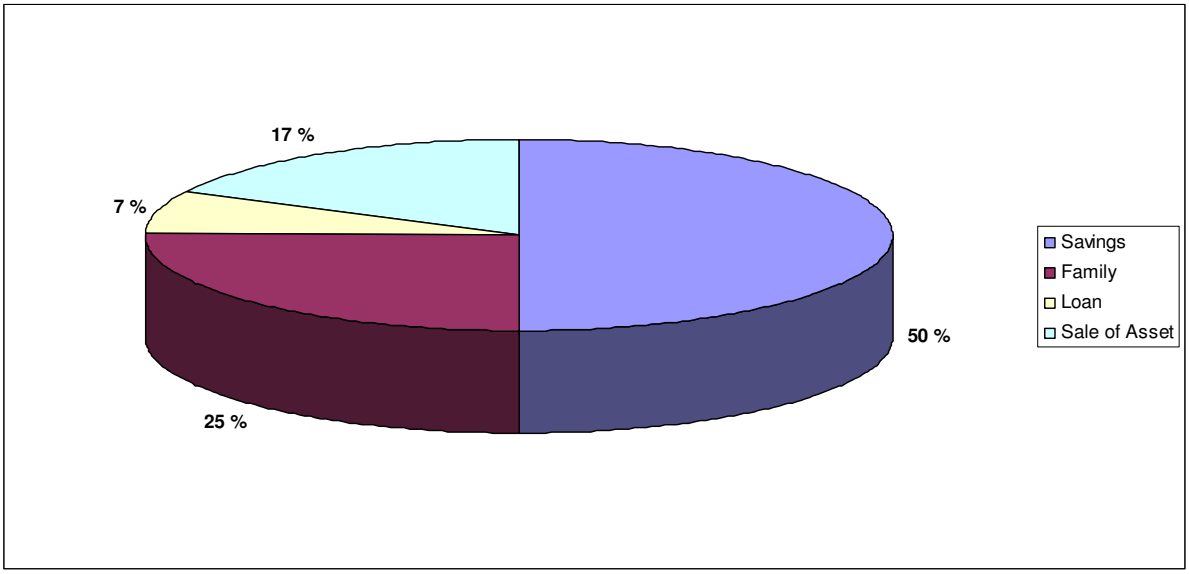

Figure description: Figure 1 illustrates the source of starting capital for 794 of the 841 respondents of the survey. A total of 47 respondents did not state the source of their starting capital.

Table 3: Descriptive Statistics

Total Sample 841

Panel A: Variables Applied in the Multivariate Analysis

Personal Characteristics		***Disability Characteristics***		***Education and Income***	
Age		Type of Disability		Education	
Teenagers	4% (33)	Physical	73% (593)	None	9% (75)
20-35 years	41% (345)	Deaf	11% (92)	Primary	44% (369)
36-50 years	34% (286)	Blind	12% (98)	Above Primary	47% (388)
Over 50 years	20% (171)	Other	4% (32)		
		Age Disability		Main Source of Income	
Gender		Birth	19% (155)	Farming	50% (412)
Male	59% (492)	Childhood	50% (408)	Not Farming	50% (405)
Female	41% (340)	Teenage	13% (103)		
		Adult	19% (155)	Secondary Source of Income	
Marital Status				Farming	39% (230)
Married	66% (546)			Not Farming	61% (357)
Not Married	34% (285)				

Panel B: Further Descriptive Statistics – Financial Characteristics

Monthly Income		Balance of Savings Account	
Above 1,000,000	8% (68)	Above 1,000,000	5% (37)
700,000 - 1,000,000	5% (39)	700,000 - 1,000,000	3% (21)
400,000 - 700,000	8% (69)	400,000 - 700,000	8% (56)
100,000 - 400,000	25% (210)	100,000 - 400,000	29% (203)
Less than 100,000	53% (439)	Less than 100,000	54% (379)
Monthly Contribution ROSCA		Size of Last Loan	
Above 50,000	9% (50)	Above 1,000,000	11% (36)
25,000 - 50,000	16% (86)	700,000 - 1,000,000	10% (33)
10,000 - 25,000	22% (119)	400,000 - 700,000	17% (58)
Less than 10,000	54% (294)	100,000 - 400,000	45% (154)
		Less than 100,000	17 % (59)

Table description: Table 3 lists percentage shares (number) of respondents in various sub-samples based on individual characteristics.

Table 4: Who Has Access to Microfinance Services?

Panel A: Personal Characteristics

	Total Sample:	***Age:***				***Gender:***		***Marital Status***	
		Teenagers	20-35 years	36-50 years	Over 50 years	Male	Female	Married	Not Married
ROSCA	66 %	30 %	65 %	74 %	64 %	63 %	71 %	69 %	63 %
Regular Savings	72 %	55 %	72 %	74 %	69 %	72 %	71 %	75 %	65 %
Savings in Formal Inst.	50 %	39 %	52 %	53 %	45 %	52 %	48 %	55 %	41 %
Loan Ever	39 %	21 %	35 %	48 %	37 %	38 %	41 %	44 %	30 %
Loan Today	15 %	6 %	15 %	18 %	13 %	13 %	19 %	17 %	12 %

Panel B: Disability Characteristics

	Total Sample:	***Type of Disability:***			***Age Disability:***			
		Physical	Deaf	Blind	Birth	Childhood	Teenage	Adult
ROSCA	66 %	69 %	50 %	67 %	54 %	69 %	73 %	68 %
Regular Savings	72 %	76 %	58 %	64 %	68 %	72 %	74 %	77 %
Savings in Formal Inst.	50 %	54 %	48 %	37 %	46 %	53 %	51 %	49 %
Loan Ever	39 %	41 %	37 %	38 %	37 %	38 %	45 %	41 %
Loan Today	15 %	18 %	7 %	11 %	16 %	17 %	13 %	12 %

Panel C: Education and Income

	Total Sample:	***Education Level:***			***Main Source of Income:***		***Secondary Source of Income:***	
		None	Primary	Above Primary	Farming	Not Farming	Farming	Not Farming
ROSCA	66 %	52 %	67 %	69 %	67 %	68 %	65 %	71 %
Regular Savings	72 %	65 %	70 %	75 %	72 %	73 %	73 %	71 %
Savings in Formal Inst.	50 %	32 %	41 %	63 %	47 %	56 %	53 %	50 %
Loan Ever	39 %	20 %	38 %	45 %	33 %	46 %	39 %	44 %
Loan Today	15 %	4 %	13 %	19 %	13 %	18 %	17 %	18 %

Table description: Table 4 displays the proportions of disabled persons who have access to microfinance services, compared with the dependent variables in Table 2. The sub-groups are constructed based on the independent variables in Table 2.

Table 5: Multivariate Analysis

Independent Variables	***Dependent Variable:***									
	ROSCA (Yes=1)		**Savings (Yes=1)**		**Type of Savings (Formal Inst.=1)**		**Loan Ever (Yes=1)**		**Loan Today (Yes=1)**	
	Coefficient	*z-value*	*Coefficient*	*z-value*	*Coefficient*	*z-value*	*Coefficient*	*z-value*	*Coefficient*	*z-value*
Age1(Teenagers)	**-1.68**	-2.72	-0.88	-1.45	0.18	0.27	-0.99	-1.45	-0.24	-0.30
Age3(36-50 Years)	0.17	0.67	0.07	0.27	0.04	0.18	**0.39**	1.76	0.35	1.27
Age4(Over 50 Years)	-0.27	-0.88	-0.45	-1.51	-0.19	-0.62	0.19	0.67	0.03	0.08
Gender (Male=1)	**-0.55**	-2.37	0.00	-0.02	-0.11	-0.50	**-0.41**	-1.99	**-0.70**	-2.79
Marital Status (Married=1)	0.29	1.15	**0.39**	1.66	**0.66**	2.85	**0.51**	2.24	0.41	1.43
Dependants	-0.14	-0.98	-0.20	-1.42	0.05	0.39	0.02	0.12	0.04	0.23
Disability Category2(Deaf)	-0.40	-1.15	**-0.72**	-2.35	**0.66**	1.90	0.19	0.59	**-1.04**	-1.89
Disability Category3(Blind)	0.18	0.51	**-0.75**	-2.39	**-0.61**	-1.90	0.15	0.48	-0.03	-0.08
Age Disability2(Childhood)	0.37	1.32	0.06	0.20	0.22	0.80	-0.09	-0.36	-0.45	-1.46
Age Disability3(Teenage)	**0.82**	2.06	0.35	0.94	-0.06	-0.17	0.17	0.50	**-0.74**	-1.67
Age Disability4(Adult)	0.59	1.59	**0.73**	1.99	0.44	1.28	0.37	1.13	-0.55	-1.37
Education Level2(Primary)	**0.68**	1.79	0.53	1.50	0.47	1.18	0.42	1.08	0.87	1.34
Education Level3(Above Primary)	**0.70**	1.80	**0.61**	1.67	**1.52**	3.75	**0.94**	2.36	**1.49**	2.29
Main Source of Income (Farming=1)	-0.20	-0.79	0.00	-0.02	-0.28	-1.20	**-0.68**	-3.02	-0.31	-1.14
Secondary Source of Income (Farming=1)	-0.30	-1.22	0.33	1.38	0.04	0.15	**-0.62**	-2.76	-0.22	-0.81
Intercept	0.74	1.46	0.59	1.28	**-1.15**	-2.28	-0.59	-1.21	**-1.95**	-2.67
	n	505	*n*	533	*n*	478	*n*	500	*n*	500
	Pseudo R^2	5.12 %	*Pseudo* R^2	4.68 %	*Pseudo* R^2	8.49 %	*Pseudo* R^2	5.39 %	*Pseudo* R^2	6.41 %

Table description: Table 5 shows results from a logit regression analysis of each of the dependent variables in Table 2 on all explanatory variables. For each individual characteristic, one indicator variable is dropped to avoid perfect multicollinearity. Each regression coefficient is to be interpreted relative to the excluded indicator variable.

Regression coefficients, z-values, number of observations (*n*) and explanatory power (*Pseudo* R^2) are displayed for all regressions. **Boldface** denotes significance at a 10% level, two-sided test.