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Income Characteristics and the Use of Microfinance Services: Evidence from Economically Active Disabled Persons[1]

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Abstract:

This study investigates income characteristics of economically active disabled persons in Uganda. We first present evidence that farmers and those with visual impairments generally have lower income levels than other disabled persons. We then relate earnings levels and primary sources of income to the use of microfinance services. We find that those with the lowest income levels have the least access to microfinance services. The difference between income levels is limited when informal microfinance services are analysed, but the poorest disabled persons are considerably worse off when saving and borrowing from formal institutions are considered. We also document that those whose primary income source is from farming or manufacturing have less access to formal microfinance services than those whose primary income source is from the wholesale/retail or service sectors.

[1] This research has been sponsored by the Norwegian Association of Disabled Persons (NAD). Roy Mersland has served as a consultant for NAD and the National Union of Disabled Persons in Uganda (NUDIPU), the organisation providing the data used in this study.

1. Introduction

Microfinance, the provision of financial services to poor persons, has been celebrated for its development effect. Recently, however, the industry has come under public and media attack. There has been a critical focus on interest rates and collection methods, and the major question has been if microfinance truly helps to bring persons out of poverty. In the discussion on welfare impacts of microfinance, there is a need for more knowledge about the microfinance clients and the use of the various microfinance services. Who are the ones actually accessing microfinance services? And, of particular interest, do disadvantaged groups access these services? In this article, we shed light on these questions by analysing the use of microfinance services among economically active disabled persons in Uganda.

According to the United Nations (2007), employers often resist hiring disabled persons. Statistics indicate that 80% to 90% of the disabled persons do not have formal jobs, and thus most resort to self-employment (United Nations 2007). Because lacking access to capital can be a major problem for this group, access to microfinance should be a priority in pro-disability policies (Handicap-International 2006). However, the scarce evidence that does exist on the use of microfinance services among disabled persons is somewhat contradictory. Whereas Cramm and Finkenflugel (2008) claim that persons with disabilities generally have little access to microfinance, Beisland and Mersland (Forthcoming b) conclude that among disabled persons who are economically active, the use of microfinance is more common than previously assumed[2]. However, Beisland and Mersland (Forthcoming b) do not relate the disabled persons' wealth to their use of microfinance services. Thus, an important question remains. Is it those who are the best off, relatively speaking, among the persons with disabilities who use microfinance

[2] Microfinance is first and foremost a useful service for those involved in economic activities. It therefore makes sense to study the use of microfinance among those being economically active rather than analysing the overall universe of disabled persons.

services or do the poorest in this vulnerable group also access these services? This study aims to fill this gap by addressing this question.

Specifically, the study investigates several topics related to income source, income level, and the use of microfinance services. First, we analyse how disabled persons' income levels relate to income source. Second, we study, respectively, the income source and income level for different types of impairment. Finally, and this part constitutes the major empirical analysis of the study, we analyse how income level and income source, respectively, relate to the use of microfinance services. Both informal services and formal institutional schemes are analysed.

We apply data from a survey conducted by the National Union of Disabled Persons in Uganda (NUDIPU). The survey covers 841 respondents with a minimum type of existing economic activity. Our findings can be compared to previous studies on non-disabled clients in Uganda (FinScope 2007). First, we find that those whose primary income source is farming have the lowest income levels. Moreover, those with a visual impairment are worse off than the rest of the disabled persons as measured by monthly income. Not surprisingly, we document that the disabled persons in the lowest income group (i.e., monthly income below 100,000 UGX – about 50 USD[3]) are those with the least access to microfinance services. The difference between the income groups is largest for formal microfinance services, i.e., saving in formal institutions and access to loans from microfinance institutions (MFIs) or banks. Moreover, we find that farmers and those working in the manufacturing sector have significantly less access to microfinance services, in particular, formal services. We find small differences when informal microfinance services (i.e., membership in a ROSCA or savings regardless of where) are investigated.

[3] The exchange rate was approximately 1900 UGX at the time of the survey in 2008.

Overall, the finding on income source is consistent with general microfinance knowledge, thus indicating that those with higher levels of working capital (wholesale/retail and service) have better access to services than those involved in activities requiring higher levels of fixed capital (manufacturing and farming).

The rest of this study proceeds as follows. Section 2 presents previous research on the effects of accessing microfinance services, and reviews the literature dealing with persons with disabilities and their access to microfinance. The data and research methodology are outlined in Section 3. Section 4 discusses the empirical findings, and Section 5 concludes.

2. Literature review

Collins et al. (2009) report that not only do poor people have low income, the income is also very volatile. Until recently, it has typically been accepted that by giving poor people access to loans, they will smooth and increase their income. In fact, most studies conclude that access to microfinance, whether loans or savings, has a positive impact on poor people's economic activities and lives (Goldberg 2005; Odell 2010). In cross-country data, the Levine (2005) overview shows a clear connection between access to finance and economic development. There is now a reasonable degree of consensus that access to savings is positive in the fight against poverty and that access to loans can be useful to ensure consumption smoothing (Rosenberg 2010). However, whether access to loans increases poor people's income is still being debated, and recent studies applying randomised control trials have resulted in different findings (see Rosenberg 2010 for an overview). In general, the microcredit effect may be difficult to isolate for individual households and small enterprises. For instance, the loans from MFIs are often given for consumption smoothing, and the usefulness of such smoothing is difficult to estimate empirically.

Regardless of the impact debate, MFIs pursue the double bottom lines of reaching out to poor clients while at the same time being financially sustainable. Prior research suggests that there is a trade-off between these two objectives as it is costly for MFIs to serve poor clients with small loans (Mersland and Strøm 2010). Unfortunately, the general picture is that, in most countries, most of the poor are still excluded from microfinance services (www.microcreditsummit.org). For East Africa, the FinScope study from 2007 reports the extent to which the population has access to microfinances and the type of services that they typically have access to. For instance, in Uganda, FinScope (2007) finds that 38% of the population use financial services, defined as both formal institutional schemes and informal self-help schemes (cf. Martinelli and Mersland 2010), thus leaving 62% of the population unserved. Women and those living in rural areas are more likely to be among the unserved (FinScope 2007). Moreover, research from Uganda demonstrates that those who are the most likely to use formal microfinance services are those employed in the formal sector (Johnson and Nino-Zarazua 2007). Johnson and Nino-Zarazua (2007) find that farmers, for instance, the most common economic activity in Uganda, are less likely to use financial services. The study also documents that the use of financial services is related to income level. Those who reported annual income above 300,000 Ugandan shillings (UGX) were more likely to use formal financial services and were also the least likely to be completely unserved (Johnson and Nino-Zarazua 2007).

In general, persons with disabilities are a low priority and an ill-treated target group when it comes to socio-economic integration (ILO 2002). The disabled are, in addition, often very poor. Among those who live on less than $1 a day, 1 in 5 has a disability (United Nations 2007). Thus, an important component of the social performance of an MFI should be related to outreach to persons with disabilities. However, Cramm and Finkenflugel (2008) and de Klerk (2008) contend that a major weakness of many MFIs is that

they do not reach the most vulnerable clients, including many of the persons with disabilities. This is confirmed by Bwire et al. (2009) who report that only 0.5% of an MFI's clients are persons with disabilities. Building on Simanowitz (2001), Bwire et al. (2009) explain that there are several barriers excluding disabled persons from accessing microfinance services. These include exclusion by staff due to attitudes, exclusion by credit design, exclusion by non-disabled members in credit groups, self-exclusion by the disabled themselves because of low self-esteem and repeated experiences of rejections, and exclusion because of the disability itself.

Using survey evidence from employees in MFIs in Uganda, Labie et al. (2010) investigate the possible barriers to microfinance. Specifically, they consider if there is reason to believe that persons with disabilities are discriminated against by credit officers. Labie et al. (2010) "provide an econometric analysis that supports the view that credit officers indeed taste discriminate" (p. 7-8), and they also find that loan officers are more biased against disabled borrowers than are other employees.

However, when the disabled themselves are asked about exclusion from financial services, a somewhat different story unfolds. Beisland and Mersland (Forthcoming a) report the view of disabled persons themselves when asked about the mechanisms that exclude them from accessing microfinance. In contrast to popular claim (de Klerk 2008; Labie et al. 2010), the disabled conclude that barriers related to other persons, such as the staff or the non-disabled members of credit groups, are not the most important barriers hindering persons with disabilities access to microfinance. Instead, Beisland and Mersland (Forthcoming a) conclude that exclusion by credit design appears to be the major problem. That is, the loan conditions do not seem to fit the needs of the disabled. Beisland and Mersland (Forthcoming a) are, however, unable to separate the price of microcredit, i.e., the interest rates, from

"pure" design issues, e.g., the repayment period. Beisland and Mersland (Forthcoming a) contend that the second most important hindering mechanism appears to be the disability itself. The disability may complicate the ability to attend a regular meeting, may complicate communication, or it may simply make it physically troublesome to access the banks' or the MFIs' premises.

Despite the hindering mechanisms and the claims that disabled persons have little access to microfinance services, Beisland and Mersland (Forthcoming b) maintain that persons with disabilities, when they are economically active, may have better access to microfinance services than previously assumed, particularly when taking into account that poor people often engage in informal financial arrangements such as Rotating Savings and Credit Associations (ROSCAs)[4]. In a survey of economically active disabled persons from Uganda, it was determined that 89% of the respondents have used at least one type of microfinance service. A majority of the respondents have participated in informal self-help schemes (cf. Martinelli and Mersland 2010), such as ROSCAs. However, the numbers are less convincing when formal microfinance services are investigated as only 4 out of 10 have or have ever had a loan from a formal MFI or bank (Beisland and Mersland, Forthcoming b).

Thus far, few studies have researched the type of economic activities in which disabled persons are involved or relate the types of activities and income levels to the use of microfinance services. Beisland and Mersland (Forthcoming b) briefly compare farmers and non-farmers, but their results are, for the most part, inconclusive. Only one significant relationship is documented. That is, it has been determined that disabled farmers are less likely to have a formal loan than disabled persons in other occupations.

[4] ROSCAs have been in existence for centuries and in virtually every developing country including Uganda (Bouman 1995). These groups work as follows: a group of persons, typically 15 to 30 group members, pool their savings on a weekly or monthly basis. The savings are then distributed as loans or grants among the members of the ROSCA - in a rotating system (more details about ROSCAs are found in Mersland and Eggen, 2007).

In this study, we set out to bring forward more knowledge on the relationship between the level of income and the source of income with the use of microfinance services among persons with disabilities. The study is descriptive and based on survey evidence. The major research challenge is to analyse if findings for non-disabled persons also hold in the disability market; for instance, is the use of formal financial services positively related to income level and does informal employment, such as farming, negatively affect the use of microfinance in general (cf. Johnson and Nino-Zarazua 2007). In addition, as this is commonly found in general microfinance research, we set out to find whether those involved in economic activities with more working capital (retail/wholesale and services) have better access to microfinance services than those involved in activities requiring higher levels of fixed capital (manufacturing and farming).

3. Data and methodology

This study applies data from the same survey as the studies of Beisland and Mersland (Forthcoming a; Forthcoming b). The survey was conducted by the NUDIPU in 2008. The NUDIPU data were collected in trainings organised for economically active disabled persons living in and around urban centres across Uganda. With the help of local NUDIPU members and district officials responsible for disability rehabilitation, all disabled persons with some kind of economic self-employment activity were invited to participate in the trainings. During the trainings, a questionnaire that formed the dataset used in this study was distributed. When needed, an NUDIPU official helped the participants to complete the questionnaires. Generally, according to the NUDIPU, approximately 80% of the participants completed the questionnaires.[5] Taken as a whole, the dataset represents disabled persons with existing economic activities living in or relatively close urban areas. Hence, the disabled persons are not randomly selected.

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

The survey focuses on potential users of microfinance services, and the conclusions cannot necessarily be generalised to the disability community as a whole.

The number of respondents in the study is 841. The primary focus of the study is the income level, the primary source of income of the respondents and their use of microfinance services. Five income categories were used in the survey: less than 100,000 UGX; between 100,000 and 400,000 UGX; between 400,000 and 700,000 UGX; between 700,000 and 1,000,000 UGX; and more than 1,000,000 UGX. It would have been advantageous to have income levels reported on a continuous scale, as this would have allowed the use of more statistical tests. However, to make the questionnaire accessible for low functioning and often illiterate persons, the use of income categories was a compromise that was made by the NUDIPU. Moreover, functionaries from the NUDIPU assisted the respondents who needed help in estimating their income. In addition to income levels, the survey applied 4 different sources of income: farming, wholesale/retail, manufacturing inclusive of processing, and service. Thus, taken together, the data are of a type that allows descriptive insights into disabled persons and their economic activities, income levels and use of microfinance, though the data are generally not suited for advanced econometric studies.

We begin the analysis with a simple investigation of the relationship between level of income and primary source of income. Second, we investigate how income level and income source relate to disability type. The respondents are sorted into three groups: hearing impairments, visual impairments, and other physical disabilities.[6] Next, we continue to the major empirical analyses of the paper. We examine how the use of microfinance services is associated with income level and income source,

[6] Persons with mental disabilities are not included in the survey as they did not participate at the NUDIPU trainings.

respectively. We analyse both informal financial arrangements and formal institutional schemes (Martinelli and Mersland 2010). The first informal financial arrangement we investigate is membership in ROSCAs. Next, we analyse the proportion of the respondents who state that they save regularly, without considering whether this is in a formal institution. We then move to the formal institutional schemes. First, we analyse the proportion who save money in an MFI, SACCO (Saving and Credit Cooperative) or bank. Second, we examine the proportion of the respondents who, at least once, have borrowed from a bank or an MFI.

4. Empirical Findings

Sub-section 4.1. presents cross-tables for economic activities and income levels, while sub-section 4.2. discusses the relationships between the type of disabilities, income levels and economic activities. Sub-section 4.3. analyses the use of microfinance services for different earnings levels. As a further illustration on the relationship between microfinance services and wealth, we also look briefly into the respondents' estimated value of their businesses. Sub-section 4.4. investigates the relationship between source of income and the use of microfinance services.

4.1. Types of economic activities and income levels

We begin by first studying the relationship between the types of economic activities, i.e., the primary income sources, and the income level of the disabled persons.

[Insert Table 1 about here]

Table 1 shows that 808 of the 841 respondents reported both income level and primary source of income. The majority (54%) of the respondents earn less than 100,000 UGX, 25% of the sample have a monthly income between 100,000 and 400,000 UGX and 21% belong to the three upper income groups, meaning that they have an income level above 400,000 UGX. It should be noted that the earnings levels have been estimated by the respondents themselves. High fluctuations in income are, in most cases, an inherent part of being poor. Moreover, estimating one's own income can be difficult, and sometimes poor respondents avoid revealing the truth when asked about income levels. In this survey, the respondents were asked to estimate their monthly average income. We recommend being cautious when interpreting the numbers reported as the true income level of the respondents, but at the same time, we feel confident that the numbers give us an indication of income levels and can be used to compare different groups of disabled persons.

Table 1 shows that more than half of the respondents indicate that farming is their main income source. This number is similar to studies on non-disabled persons in Uganda (FinScope 2007). The second largest group of respondents is the retail/wholesale group, consisting of slightly less than a quarter of the sample. The proportion of respondents belonging to the manufacturing group and the service group is equal to 10% and 16%, respectively. Not surprisingly, those with farming as their primary source of income report the lowest income levels, while those involved in wholesale or retail trading report the highest income. The income distribution of the manufacturing group is relatively similar to the total sample. This is also the case for the service group, although this group is slightly over-represented in the income category between 100,000 and 400,000 UGX.

4.2. Type of disability in relation to economic activities and income levels

Of the overall sample, 12% of the respondents are hearing impaired, 12% are visually impaired and 76% are physically impaired. The sample is skewed towards those with physical impairments. Other studies from Uganda report that of the overall disabled population, 30% are physical impaired, 28% are visually impaired, 18% are hearing impaired and 24% have other types of impairments including mental problems (for an overview of studies, see Beisland and Mersland Forthcoming a). Regardless of the skewed sample, it is interesting and worthwhile to compare income levels and economic activities between the different disability groups. Table 2 reports the results.

[Insert Table 2 about here]

Interestingly, those with hearing impairment are the best off, economically speaking, while those who are visually impaired are the worst off. Of the hearing impaired, 25% report a monthly income above 1 million UGX. The high (low) income level seems related to the low (high) engagement in farming for the hearing (visually) impaired. Considering general disability knowledge that those with hearing impairments are the most marginalised, the findings are surprising and should be interpreted with caution. It is possible that the selection bias in the sample can explain the finding as only those who are hearing impaired and could understand sign language could participate in the training; thus probably those with such knowledge are the best off, economically speaking, among those with hearing impairments.

4.3. Income levels and microfinance services

Table 3 displays the use of microfinance services for the five income groups applied in the study. We analyse two informal microfinance services, respectively, membership in ROSCAs and regular savings, and two formal microfinance services, respectively, saving in formal institutions such as an MFI, SACCO or bank, and access to loans from a bank or an MFI. In total, two-thirds of the sample indicate that they are members of a ROSCA. The finding that ROSCAs are popular among disabled persons is consistent with findings reported for non-disabled poor persons (Johnson and Nino-Zarazua 2007). The relationship between income level and membership in a ROSCA is a somewhat reversed U-shaped. For the lower income levels, the proportion of respondents who are members of a ROSCA increases as the income level increases. However, this changes when the highest income groups are considered. That is, the respondents with income levels above 700,000 UGX are less frequently members of a ROSCA than the average members of the sample. This is not surprising. The poorest of the poor are often excluded from ROSCAs by members who are less poor, while those who are better off, financially speaking, find participating in ROSCAs less interesting (Mersland and Eggen 2007).

[Insert Table 3 about here]

The second microfinance service investigated is regular savings. This is a very open but interesting question. The respondents were simply asked whether they save regularly, without having to indicate whether they saved in a ROSCA, in a bank, in the “mattress” or in livestock. To this question, 72% of the respondents stated that they indeed do save regularly. Again, this is not surprising. Recent evidence suggests that poor people do indeed save both in kind (e.g. animals) and in money (Collins et al., 2009). While the proportion is quite constant across income levels, somewhat surprisingly, fewer persons appear to save in the highest income group. When formal savings are analysed, however, a much clearer

pattern emerges. In total, 51% of the respondents save money in an MFI, SACCO or bank. However, only 44% of the poorest persons save formally. The proportion increases to 63% and 65%, respectively, for the next two income categories. Once again, we obtain a reverse U-relationship between the use of microfinance services and income levels. Only 41% of the respondents earning more than 1,000,000 UGX as a monthly average save money in a formal institution. The reader should note, however, that because the total number of respondents is higher in the low income categories, the trustworthiness of the results, from a purely statistical perspective, is higher in these sub-groups. We also know, as previously mentioned, that getting a true picture of the income level from low functioning and illiterate poor people is challenging, and some might present an overly optimistic income. Thus, results related to the highest income group (above 1,000,000 UGX) should be interpreted with caution throughout this study.

Table 3 reveals that 40% of the respondents have had or currently have a loan in an MFI or a bank. Note, however, that untabulated results reveal that only 15% currently hold a loan. We include those who have had a loan as this indicates that they have been able to access microfinance, but we notice that the majority of those accessing credit have not been able to maintain the borrower-bank relationship. Thus, when studying microfinance access for disabled persons, we should keep in mind that the use of microfinance services are not only about accessing MFIs for the first time but also about how to assure that the disabled will have access to the services in the future. In the table, we observe substantial differences between the sub-groups. Whereas only 33% of the lowest income group have accessed formal loans, almost 6 out of 10 in the earnings group between 400,000 and 700,000 UGX have accessed microcredit. Again, the findings appear to be very similar for disabled persons and non-disabled persons (Johnson and Nino-Zarazua 2007). We observe the reverse U-relationship between level of income and use of microcredit, which we recommend interpreting with caution.

To further analyse the relationship between wealth and the use of microfinance services, the respondents were asked to estimate the total value of their businesses.[7] Five value categories were used in the survey: less than 200,000 UGX; between 200,000 and 500,000 UGX; between 500,000 and 1,000,000 UGX; between 1,000,000 and 2,000,000 UGX; and more than 2,000,000 UGX. The reader should again be aware of the difficulties related to collecting this type of information from low functioning and illiterate poor people. However, as the categories are wide and the results, therefore, are relatively insensitive to moderate estimation errors, the findings shed further light on the disabled person's use of microfinance. The results are reported in table 4.[8]

[Insert Table 4 about here]

For all the microfinance services analysed in this study, the respondents with the least valuable business are the ones with the least access to microfinance. The differences are smallest for the informal microfinance services. Of the respondents, 62% with an estimated business value of less than 200,000 UGX are ROSCA members compared to 68% for the sample as a whole, and 69% in this sub-group save regularly, while the average for regular saving is 73%. However, for the formal microfinance services, the differences are much more dramatic. Only 38% of the respondents in the lowest business value category save money in an MFI, SACCO or bank, whereas this proportion exceeds 60% for all other sub-categories. We note that there are some tendencies to a reverse U-relationship between business value and the use

[7] The respondents were asked, "What is the estimated value of your business?" Business value is not an unambiguous concept, and we note that the respondents may have interpreted the question differently.
[8] The "Total" line of the tables does not report the exact same proportion with respect to the use of the various microfinance services. The reason is that the number of respondents that have answered, "Don't know" or left the question blank varies across the different questions.

of microfinance services for both membership in ROSCAs and the tendency to save (both informally and formally), but, again, we recommend interpreting the results with caution.

The clearest results on the relationship between business value and microfinance services are found for the access to microcredit. The proportion of respondents who have had or currently have a loan in an MFI or bank is strongly linked to the estimated business value, and the relationship is positive. The higher the business value, the higher the probability that the respondent has accessed microcredit. Only 27% of those with business values less than 200,000 UGX have had or currently have a loan. This proportion increases steadily across the estimated business value categories. In the category for business value above 2,000,000 UGX, 63% of the respondents have or have had a loan. Again, the finding is intuitive as those with bigger businesses have easier access to loans, a fact that is well known throughout the microfinance industry. Both the analysis of income levels and the analysis of business values suggest that the poorest of the economically active disabled persons are those with the least access to microfinance services. This is consistent with general microfinance knowledge and should not necessarily be interpreted negatively. After all, especially when it comes to credit, contracting a loan may put a poor person in a more difficult position if the individual is not able to repay the debt. Enticing the poorest among the disabled persons to take out loans could easily turn out to be an unfortunate venture.

4.4. Source of income and microfinance services

Table 5 relates the use of microfinance services to the following primary income sources: farming, wholesale/retail, manufacturing (inclusive of processing), and service. Once again, we begin the analysis with an investigation of ROSCA membership. The table reveals that the proportion of respondents who

are members of a ROSCA is relatively constant across income sources. Of the farmers, 67% participate in a ROSCA, and this proportion is equal to the average for the whole sample. The highest percentage is found among the respondents whose primary income source is wholesale/retail (72%), while both manufacturing and service report a rate of 64%, which is slightly below the average.

[Insert Table 5 about here]

The second microfinance service investigated is regular savings, whether formal or informal. Once again, the results for farmers are equal to the average. Both for the total sample and for the persons whose primary source of income is farming, 72% indicate that they save regularly. The most eager savers are those whose primary income source is from the service industries, with 76% indicating that they engage in regular savings, while 74% of those in the wholesale/retail sub-group report saving regularly. Respondents working in the manufacturing sector save the least, with 66% reporting that they save on a regular basis. The finding that farmers indicate that they engage in saving is not a surprise as many farmers save in grains or seed corn, which, to them, is equally as important as saving in cash.

The differences between the various income sources are larger when formal savings are analysed. For some of the income sources, there is a rather dramatic difference between access to savings and access to savings in MFIs, SACCOs and banks. For instance, for those whose primary source of income is manufacturing, the proportion drops from 66% to 35% when going from savings in general to savings in formal institutions. In other words, almost half of the persons in this sub-group who are saving do not access a formal institution. Equivalent, but slightly less dramatic, results are reported for those whose

primary income is derived from farming. For this group, the savings proportion drops from 72% to 47%. The second highest formal savings proportion, 57%, is among those in the sub-group of wholesale/retail. However, service stands out as the far largest formal savings group as 68% of the respondents in this group have an account in an MFI, SACCO or bank. The ratio of formal savings to total savings is also much higher for this sub-group than for any other sub-category. Among the respondents whose primary income source is service, 76% stated that they save regularly, indicating that 9 out of 10 of the respondents in this group who save regularly do so in a formal institution.

The pattern from formal savings is, in some sense, confirmed when formal borrowing is examined. Once again, we find that it is the group from the service sector that most frequently access credit (52%), and this group is, once again, followed by the wholesale/retail group (47%). Compared to formal savings, the manufacturing group and the farming group switch places. Farming is now the income source group with the least access to a microfinance service (33%), but the difference between the farming and the manufacturing group (36%) is minimal. Collectively, a clear pattern emerges. When informal microfinance services are considered, there is little difference between the various income source groups. However, when moving to formal savings and loans, the respondents split into two broad categories. Those whose primary income is from service or wholesale/retail are in a different league than those whose primary income source is from farming or manufacturing. The former category has far better access to microfinance services than the latter. Again, this mirrors the general situation in the microfinance industry – those accessing formal services are more often involved in retail/wholesale or service activities while those involved in manufacturing, and especially in farming, have less access to microfinance services (Johnson and Nino-Zarazua 2007). Though all respondents come from and around urban centres, the more use of formal microfinance among those involved in retail/wholesale and

service activities may also be related to that they operate their businesses closer to where formal services are offered. At the same time, those with less access to the formal services (manufacturers and farmers) have easier access to the informal services such as ROSCAs, a situation that applies to the general population as well (Johnson and Nino-Zarazua 2007) and is mirrored in the disabled population as reported herein. Compared to the Beisland and Mersland (Forthcoming b) study that reports small differences between farmers and non-farmers, this study provides new knowledge. As Table 5 suggests, there are considerable differences within the "non-farming" group.

5. Concluding remarks

This study investigates income characteristics for economically active disabled persons. The data are from a survey conducted by the National Union of Disabled Persons of Uganda (NUDIPU). Our findings with respect to disabled persons can be compared to previous research on non-disabled persons (Finscope 2007, Johnson and Nino-Zarazua 2007). We document that disabled farmers have lower income levels than those with incomes from other business activities. Moreover, those with visual impairments, in general, have lower income levels than the average disabled person.

Generally we find that the relationships between economic activity, income and access to microfinance for disabled persons mirror those of non-disabled persons. First, we find that, there is a clear indication that low income persons have less access to formal savings and loans than the average income persons. The results are confirmed when an estimated value of the respondents' businesses replaces income as a wealth proxy. Second, we find that there are small differences in the relationship between income source/economic activity and the use of microfinance services when informal microfinance services are

considered. However, those whose primary income source is farming have considerably less access to formal microfinance services than the average person whose primary source of income is not farming. This is not surprising as farmers are over-represented in the low income groups. Likewise, and in line with general microfinance knowledge, the respondents quoting manufacturing as their primary income source are also worse off when formal microfinance services are considered. Those most frequently accessing formal microfinance services are those whose primary source of income is from the service or wholesale/retail sector.

From a development perspective, it is obviously problematic that the poorest of the poor seem to be the persons benefitting the least from microfinance services though this is commonly known in the microfinance industry and cannot easily be overcommed since serving the poorest is costly (Mersland and Strøm, 2010). Morduch (2006) argues for the use of smart subsidies to reach the most vulnerable though designing such subsidies are difficult since disabled persons are not a homogenous group and screening for disability can be difficult. Action research on how to design and implement smart subsidies for disabled persons is therefore recommended. At the same time researchers shouldn't rule out the possibility that some persons who do not use microfinance services may do so as a matter of choice. The survey simply asked if the respondents used various microfinance services; it did not ask if the respondents actually *wanted* to use the services. Practitioners and researchers should also keep in mind that facilitating *credit* may turn out to be a disservice for vulnerable disabled persons unable to repay their loans. Savings should therefore be at the forefront when advocating access to microfinance for disabled persons.

A policy recommendation stemming from this study is to engage more disabled persons in service and trading activities. Training and development programmes have often been approached from a manufacturing perspective. However, this study suggests that those whose primary income source is manufacturing have less access to microfinance services than those whose primary income source is service and wholesale/retail activities. In fact, in some parts of the world, it may be the case that people actually prefer trading with disabled persons rather than able-bodied persons perhaps because of ethical motivations. This issue certainly deserves more attention in future research.

In general, access to data is the major problem facing researchers interested in understanding the economic behaviours of disabled persons and in comparing such behaviours with non-disabled persons. In this study, we have applied data from economically active disabled persons. Our view is that this provides some initial insight into the "black box" of understanding disabled persons and their economic behaviours. Moreover, the findings in this study (except the U-curve for the highest income levels) are intuitive, which further strengthen our trust in the data presented. However, though difficult, future studies should search for data being representative of the overall disabled population. It would be even more valuable if comparable data from non-disabled persons could be included in the dataset.

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Table 1: Income level vs. primary source of income

	Farming	Wholesale/Retail	Manufacturing	Service	Total
Less than 100,000	254 (63%)	81 (43%)	40 (48%)	62 (48%)	437 (54%)
100,000 to 400,000	86 (21%)	49 (26%)	22 (26%)	48 (37%)	205 (25%)
400,000 to 700,000	29 (7%)	21 (11%)	11 (13%)	8 (6%)	69 (9%)
700,000-1,000,000	13 (3%)	14 (8%)	5 (6%)	5 (4%)	37 (5%)
Above 1,000,000	25 (6%)	22 (12%)	6 (7%)	7 (5%)	60 (7%)
Total	407 (100%)	187 (100 %)	84 (100%)	130 (100%)	808 (100%)

Table description: Table 1 presents descriptive statistics for the survey data applied in this study. The table relates income level to source of income. The survey was conducted by the National Union of Disabled Persons of Uganda (NUDIPU) in 2008. The NUDIPU data were collected in trainings organised for economically active disabled persons. With the help of local NUDIPU members and district officials responsible for disability rehabilitation, all disabled persons with some kind of economic self-employment activity were invited to participate in the training. During the trainings, a questionnaire forming the dataset used in this study was distributed. When needed, a NUDIPU official helped the participants to complete the questionnaires. The total number of respondents was 841. Table 1 lists the number of respondents in sub-groups categorised according to monthly income level (in Ugandan shilling) and primary source of income. The table also presents the proportion of respondents in each income category for each income source. Of the respondents, 808 quoted both monthly income level and primary source of income.

Table 2: Income and disability type

	Hearing Impairment	**Visual Impairment**	**Other Physical Disability**
Less than 100,000	33 %	58 %	55 %
100,000 to 400,000	22 %	26 %	27 %
400,000 to 700,000	11 %	8 %	8 %
700,000-1,000,000	9 %	3 %	4 %
Above 1,000,000	25 %	5 %	6 %
	100 %	100 %	100 %
Farming	40 %	63 %	49 %
Wholesale/Retail	27 %	19 %	25 %
Manufacturing	14 %	7 %	10 %
Service	19 %	11 %	16 %
	100 %	100 %	100 %

Table description: Table 2 relates the income levels and primary sources of income to disability type in the survey described in Table 1. Three disability types are investigated: hearing impairment, visual impairment and other physical disabilities.

Table 3: Income level and the use of microfinance services

	No. of respondents	ROSCA		Saving regularly		Savings in SACCO, MFI or bank		Loan ever (in MFI or bank)	
		Yes	%	Yes	%	Yes	%	Yes	%
Less than 100,000	439	291	66 %	320	73 %	193	44 %	145	33 %
100,000 to 400,000	210	147	70 %	154	73 %	132	63 %	104	50 %
400,000 to 700,000	69	55	80 %	50	72 %	45	65 %	41	59 %
700,000-1,000,000	39	22	56 %	30	77 %	23	59 %	14	36 %
Above 1,000,000	68	41	60 %	43	63 %	28	41 %	24	35 %
Total	825	556	67 %	597	72 %	421	51 %	328	40 %

Table description: Table 3 lists the number and percentage of respondents using various microfinance services in the survey described in Table 1. The data are sorted according to monthly income level (in Ugandan shilling). Four microfinance services are analysed: membership in Rotating Savings and Credit Associations (ROSCAs), regular savings, savings in formal institution defined as MFI, SACCO or bank, and the proportion of the respondents that, at least once, have borrowed from a bank or MFI.

Table 4: Business value and the use of microfinance services

	No. of respondents	ROSCA		Saving regularly		Savings in SACCO, MFI or bank		Loan ever (in MFI or bank)	
		Yes	%	Yes	%	Yes	%	Yes	%
Less than 200,000	362	224	62 %	251	69 %	137	38 %	98	27 %
200,000 to 500,000	204	152	75 %	153	75 %	124	61 %	89	44 %
500,000 to 1,000,000	139	99	71 %	101	73 %	87	63 %	72	52 %
1,000,000-2,000,000	58	43	74 %	49	84 %	39	67 %	32	55 %
Above 2,000,000	51	34	67 %	40	78 %	32	63 %	32	63 %
Total	814	552	68 %	594	73 %	419	51 %	323	40 %

Table description: Table 4 lists the number and percentage of respondents using various microfinance services in the survey described in Table 1. The data are sorted according to the respondents' estimated value of their business (in Ugandan shilling). Four microfinance services are analysed: membership in Rotating Savings and Credit Associations (ROSCAs), regular savings, savings in formal institution defined as MFI, SACCO or bank, and the proportion of the respondents that, at least once, have borrowed from a bank or MFI.

Table 5: Primary income source and the use of microfinance services

	No. of respondents	ROSCA		Saving regularly		Savings in SACCO, MFI or bank		Loan ever (in MFI or bank)	
		Yes	%	Yes	%	Yes	%	Yes	%
Farming	412	276	67 %	296	72 %	192	47 %	138	33 %
Wholesale/Retail	190	137	72 %	140	74 %	108	57 %	89	47 %
Manufacturing	85	54	64 %	56	66 %	30	35 %	31	36 %
Service	130	83	64 %	99	76 %	88	68 %	68	52 %
Total	817	550	67 %	591	72 %	418	51 %	326	40 %

Table description: Table 5 lists the number and percentage of respondents using various microfinance services in the survey described in Table 1. The data are sorted according to primary income source. Four microfinance services are analysed: membership in Rotating Savings and Credit Associations (ROSCAs), regular savings, savings in formal institution defined as MFI, SACCO or bank, and the proportion of the respondents that, at least once, have borrowed from a bank or MFI.