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Exploring Microfinance Clients with Disabilities: A Case Study of an Ecuadorian Microbank

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Exploring microfinance clients with disabilities:

A case study of an Ecuadorian microbank

Abstract

Using a unique sample from an Ecuadorian microfinance institution that has focused on increasing its outreach to disabled clients, we present a comparative analysis of the characteristics of disabled versus non-disabled clients. The study shows that disabled clients are more often male, are less likely to be living with a partner, have fewer children, and are older compared to their non-disabled counterparts. Moreover, we observe differences in repayment statistics between clients with and without disabilities, as well as differences within the disability sample. Our findings illustrate the importance of adapting microloans to the special needs of persons with disabilities.

1. Introduction

Several important initiatives encourage microfinance institutions (MFIs) to offer services to disabled clients. Examples include Handicap International (Handicap International, 2006), the Center for Financial Inclusion by Accion International (www.centerforfinancialinclusion.org) and the Disability and Development Group of the World Bank (www.worldbank.org). The results of these initiatives have been meagre, however. Although the World Health Organization (WHO) estimates that approximately 15% of the world's population lives with some type of disability (WHO, 2011), less than 0.5% of MFI clients are disabled (Bwire et al., 2009). Thus, in this paper, we seek to present novel empirical insights that enable a better understanding of why MFIs serve few disabled clients and to provide valuable background knowledge that both the microfinance industry and policy makers could apply to future efforts to increase the inclusion of persons with disabilities (PWDs hereafter).

There is little doubt that in developing countries, disability is strongly associated with poverty (Scott, 2000; Mitra et al., 2013) and PWDs are generally a low priority and an ill-treated target group with regard to socioeconomic integration (Groce et al., 2011). Employers often resist hiring PWDs, and statistics indicate that 80% to 90% of PWDs in developing countries do not have formal jobs; therefore, most PWDs become self-employed (United Nations, 2007; Mizunoya and Mitra, 2013). For the self-employed, access to capital is vital. The general exclusion of PWDs from access to microfinance services is therefore not only a potential discrimination problem but also a development problem (Cramm and Finkenflügel, 2008; Bwire et al., 2009).

The academic literature on PWDs' access to capital has long been virtually nonexistent (Bwire et al., 2009); however, some recent investigations have focused on the mechanisms that hinder PWDs' access to microfinance services (Beisland and Mersland, 2012a; Labie et al., 2015). In this paper, we take the literature one step further by presenting a comparative analysis of microfinance clients with and without disabilities. Thus, to better understand why MFIs tend to shy away from serving PWDs,

this paper aims to a) understand the characteristics of PWDs served by MFIs in greater detail and investigate whether there are characteristics that differentiate PWDs from non-disabled clients in MFIs and b) present evidence of possible differences in repayment statistics between PWDs and non-PWDs, as well as possible differences based on disability-characteristics. Given that microfinance services could have the potential to increase the standard of living of PWDs, we believe in improving PWDs' access to such services. Therefore, a major objective of the paper is to present and discuss the policy implications of the findings.

We apply survey data obtained from clients of the MFI Banco D-MIRO in Ecuador. The survey data are supplemented with data from Banco D-MIRO's own records. Thus, our unique dataset combines data from two sources and covers subsamples of both disabled and non-disabled clients. A strength of the data sample is that Banco D-MIRO has recently focused on increasing the proportion of disabled clients it serves. In fact, given that most MFIs have few disabled clients (Bwire et al., 2009; Handicap-International, 2006), a focus on increasing this clientele is a prerequisite to conducting research on this subject. In microfinance, severe discrimination often makes analysis of the factors that could improve PWDs' access to microfinance meaningless (because they would never gain access anyway); however, in our case, we have a sufficient sample of successful (in the sense that they have been able to become a client of a formal MFI) PWDs for such an investigation to be meaningful. Moreover, Banco D-MIRO is a professional bank regulated by Ecuadorian banking authorities that has a primary objective of financial sustainability. This latter characteristic ensures that all respondents have been subject to professional client screening before contracting with the bank.

The empirical results show that there are no differences in income or net assets between disabled and non-disabled clients. Thus, although the bank specifically wishes to target PWDs, practical experience suggests that a professional MFI such as Banco D-MIRO is willing to accept disabled clients only if they fulfil the same creditworthiness criteria as non-disabled clients. Moreover, educational levels between

the two groups appear to be the same. Thus, a vital ingredient in the empowerment of PWDs, at least with respect to access to capital (but most likely also in regards to general inclusion in society), appears to be education. Additionally, compared to non-disabled clients, disabled clients are more often male, are less likely to be living with a partner, have fewer children, and are older. Of particular interest is the finding that females with disabilities and young PWDs are under-represented in the disability sample.

We use the number of late repayments per client as our repayment variable. Most clients pay their instalments on time, confirming previous knowledge that repayment rates are high in microfinance. This conclusion holds for all sub-samples. Given that Banco D-MIRO offers the same loan products to PWDs and others and has not made any adaptations for the special needs of PWDs, we are not surprised that the average number of late repayments is highest for the PWD sample. However, there are some interesting differences among the PWDs. For instance, it is notable that female PWDs have better repayment rates than male PWDs. Thus, a gender difference previously documented among non-disabled clients (D’Espallier et al., 2013) appears to extend to the PWD-community.

An important message of this study is that the microfinance industry should not overlook the equity dimension when serving PWDs.¹ If an NGO-type MFI wants to reach the disability market, there is a need to pay much greater attention to the specific requirements that PWDs may have for accessing, using and repaying microloans. The lack of attention to PWDs as a “special needs population” is an obvious development problem. However, profit-oriented MFIs should also recognise that some PWDs are at a larger disadvantage than others; the market of PWDs running viable businesses and having loan repayment capacity is potentially huge and an important avenue for future MFI growth. Therefore, applying an equity lens to microloans for PWDs is an obvious recommendation from a development perspective, but it may also be key for success from a business-oriented angle (cf. Heyman et al., 2014).

This paper is organised as follows. Section 2 discusses relevant prior research. Section 3 presents the study's data sample and research methodology. Section 4 lays out the empirical findings and Section 5 discusses the findings and devotes particular attention to the policy implications of our results. Section 6 concludes the paper.

2. Prior research

One advantage of microfinance is that it can be organised in a sustainable manner without the constant need for donor support. In development research, microfinance is believed to have a positive developmental effect on customers, and it has also been claimed that microfinance is useful for balancing out poor people's fluctuating incomes and expenses (Collins et al, 2009). Despite the fact that the industry has come under attack from the general public and the media, who have focused on matters involving high interest rates and heavy-handed collection methods (Bateman, 2010), "financial inclusion" remains a top priority of the development agenda, and some argue that it should be included as a new UN Millennium Development Goal (Sinclair and Gamser, 2013).

It can be argued that financial inclusion is particularly important for PWDs. Prior studies show that in developing countries there is an employment gap between individuals with and without disabilities (Trani and Loeb, 2012). As a result, there is a higher proportion of self-employed disabled workers than self-employed non-disabled workers (Mizunoya and Mitra, 2013). Self-employment requires capital. To begin a new income activity, capital is typically removed from savings or received from families and friends, and this is also the case for PWDs (Beisland and Mersland, 2012b). Later in the life cycle of an economic activity, it is generally accepted that the injection of additional capital, for example loans, can help a business grow and increase its productivity (Shane and Venkataraman, 2000). Although prior research suggests that PWDs may access informal savings and credit groups (Beisland and Mersland,

2012b), few PWDs are able to access the *formal* microfinance services of MFIs (Cramm and Finkenflugel, 2008; Handicap-International, 2006).

Research on PWDs and microfinance is scarce and, given the importance of increasing access to capital for self-employed PWDs, there is a need for more knowledge on practically every sub-topic in the field. In this study, we aim to present a comparative analysis between non-disabled microfinance clients and clients with disabilities. Such a study has, to the best of our knowledge, not been conducted before, probably because most MFIs have few disabled clients, thereby making it impossible to identify a group large enough to carry out meaningful statistical tests. In traditional research on access to financial services, discrimination against financially poor people in general has been a main issue of interest (see Dymski, 2006). In this study we hope to take the literature on PWDs and microfinance one step further: in cases where PWDs actually have been able to access microfinance services, are there any similarities or differences between disabled and non-disabled clients that can be of help in future policy design?

We focus the rest of this section on our two research questions. First, compared to non-PWD clients, what characteristics do MFI clients with disabilities possess? Second, are there any differences related to the repayment of loans by MFI clients with and without disabilities? To shed light on these issues, we apply a case study approach. Given the novelty of our research, we do not propose any clear-cut hypotheses. This is an explorative study of an under-examined issue and a case study allows us to posit stylized facts and mechanisms that can be developed further into more specific theories and hypotheses in future work (in a similar vein as studies such as McNulty, 2015).

Before discussing possible differences among clients with and without disabilities, it is important to note that our two samples of PWDs and non-disabled clients are constructed so that the loan amounts are similar for both samples (more details below). This research design is chosen so that we increase the probability that observed differences between the two samples are due to the disabilities

themselves and not to other systematic differences in the economic conditions between the individuals examined. This research design also makes it possible to identify situations in which the equality perspective on PWDs is not sufficient and an equity lens is needed instead.

Regarding research question 1, we focus our attention on age, gender, marital status, number of children and education level. We also have access to data on income and net wealth (before contracting with Banco D-MIRO). Although a comparison between disabled and non-disabled microfinance clients has not been conducted before, prior research on disability in developing countries can provide indications as to what to expect in our empirical investigation. However, different prior findings may suggest different expectations. For instance, with respect to age, older PWDs may have more work experience, which could prove beneficial when contracting with an MFI. On the other hand, Mitra et al. (2013) find that among PWDs, older people are more likely to be multidimensionally poor. This might reduce older PWDs' probability of accessing microfinance services. With respect to gender, women with disabilities are often poorer than men with disabilities (Mitra et al., 2013). At the same time, disability gaps in employment rates are more often found for men than for women (Mizunoya and Mitra, 2013). The former finding suggests that females with disabilities should be relatively less attractive as microfinance clients, whereas the latter finding could lead to the opposite conclusion. With respect to marital status and number of children, one might expect that credit risk is an increasing function of number of dependents. Thus, it could be the case that single PWDs and PWDs with fewer children can more easily access microfinance.

Income and net wealth are important variables in this study in the sense that they can provide indications as to whether Banco D-MIRO practices 'equal terms' (as it claims to do) and whether the dataset has comparable sub-samples of the two groups. When testing research question 2 on repayment, it is important to recognise that the two samples do not differ systematically with respect to (*ex-ante*) measures of creditworthiness. One obvious and important aspect of creditworthiness is

future income-generating capability. However, in microlending, including at Banco D-MIRO, creditworthiness is based on an analysis of existing income and assets (Mersland and Strøm, 2012). Prior research strongly suggests that PWDs have lower income levels than non-PWDs (see Mitra et al., 2013, and the references therein). Moreover, several studies confirm that compared to non-PWDs, PWDs in developing countries have fewer assets (Palmer et al., 2010; World Bank, 2009). Overall, therefore, Mitra et al. (2013) conclude that PWDs in developing countries are likely more financially disadvantaged than persons without disabilities. However, given that we investigate only PWDs who have been accepted as microfinance customers, we expect that the PWDs in the sample possess the same level of creditworthiness as other clients.

This line of reasoning could also be extended to the education variable; because education level could be viewed as a proxy for creditworthiness, one could also expect that the education level of PWDs needs to be similar to that of non-disabled clients for the former to be accepted as MFI clients. If this is what we find, then disabled microfinance clients will have a higher education level than other PWDs; it is an unfortunate fact that PWDs in developing countries generally have lower access to education than non-disabled persons (Mitra et al., 2013).

We now proceed to the second research question. Are there any differences in repayment rates between PWDs and their non-disabled counterparts? Prior research shows that few PWDs have access to microfinance services (Bwire et al., 2009). Several reasons for this lack of access to microfinance are proposed in the literature (for more details, see Simanowitz, 2001; Beisland and Mersland, 2014). From our extensive contact with practitioners in microfinance, we believe there is little doubt that discrimination against PWDs often is a serious challenge in this field. Although formally assessing equal treatment in loan granting is difficult (Dymski, 2006), the contention that discrimination is widespread is supported by academic studies. For instance, Cramm and Finkenflügel (2006) state that PWDs are barred from accessing microfinance services, and they maintain that this exclusion can be attributed

to higher *perceived*, not actual, risk for PWDs than others. Moreover, lenders may fail to “see” the individual and use the existence of disabilities as a low-cost substitute for costly information gathering (cf. Dymski, 2006). A challenge in the (few) studies published on this topic is that the exclusion debate has often focused on anecdotal evidence and expert observations (Cramm and Finkenflugel, 2008; Handicap-International, 2006); however, using survey data from Uganda, a study by Labie et al. (2015) presents empirical evidence that credit officer discrimination is a major reason why PWDs are excluded from microfinance services. It is important to note that such discrimination is not typically an intentionally malicious act by the staff; rather, it is the result of the microfinance industry failing to take into account the special needs of PWDs (the industry ‘fixates’ on using an equality lens as opposed to an equity lens when approaching PWDs). If Banco D-MIRO discriminates against disabled clients, we can expect that PWDs will show better repayment rates than other clients of the MFI (because Banco D-MIRO then would require PWDs to be financially better off than other clients to be granted loans).

According to the results of a few academic studies, however, we cannot rule out the somewhat popular assumption in the microfinance industry (see, for example, Beisland and Mersland, 2012b; Ahmad and Ahmad, 2011) that PWDs are, indeed, riskier microfinance clients than others even if they *ex-ante* have similar income and asset levels as non-disabled-clients. For instance, Amin et al. (2003) conclude that the vulnerable poor, in general, often carry greater risks for microcredit providers. Moreover, a Ugandan study suggests that PWDs who have been able to access credit from a formal MFI are often unable to maintain the MFI-customer relationship (Beisland and Mersland, 2012b). The study did not discuss the reasons for the end of this relationship, but a plausible reason could be that PWDs’ late repayments caused the MFI to be unwilling to renew the loans. In line with this argument, Thomas (2000) indicates that many PWDs are accustomed to receiving charity. This expectation of charity could lead PWDs to not honour their loan contracts.

In general, the low proportion of PWDs among microfinance clients (Handicap-International, 2006; Bwire et al., 2009) can be caused by what can be termed valid reasons (that is, risk-related differences between PWDs and others) and non-valid reasons (that is, discrimination). If PWDs are subjected to discrimination and, hence, more restrictive screening than other loan clients, one can expect repayment statistics to be better for PWDs than others. However, should the contention that PWDs are riskier than others be true, an opposite finding could emerge. In either case, it is notable that repayment statistics are sensitive to the actions of the bank and its staff members. In addition, equal treatment is notoriously difficult to test econometrically (Dymski, 2006). Thus, the findings for the second research question should be interpreted with caution, and we remind the reader of the purpose of this study: to gain knowledge about (the few) PWDs that actually have been able to access microfinance services to better understand how the inclusion of PWDs in such services can be increased.

3. Data sample

This study applies data gathered from clients of Banco D-MIRO in Ecuador; see the appendix for more details on this MFI. Banco D-MIRO has introduced a loan product called CREER (“believe”). The terms and conditions of the product are the same as those of the bank’s regular microcredit products, but the CREER product specifically targets customers who have a disability or who have disabled children. As of September 2012, 374 of Banco D-MIRO’s clients were using the CREER product. There is no special qualification method for the product and it does not have better conditions than other products, but loan officers are in general encouraged to include disabled customers among their clientele.

A telephone survey was conducted during the second half of 2012, and the response rate was approximately 50%. The sample consisted of both PWDs and a control group of non-PWDs. To maximise the comparability of the PWD group and the control group of non-disabled respondents, the control group was randomly selected from non-disabled clients who resided in the same districts and

who borrowed approximately the same amounts as disabled clients.ⁱⁱ A unique aspect of our study is that in addition to client responses, we have access to Banco D-MIRO's own data on the responding clients, including data on *ex ante* creditworthiness and *ex post* repayment performance.ⁱⁱⁱ

We believe that our dataset has two primary strengths. First, extremely few PWDs have access to microfinance services (Handicap International, 2006); however, because Banco D-MIRO measures its outreach to disabled clients with the help of its CREER product, there is a sufficient number of clients with disabilities to enable formal statistical tests. Second, although our sample MFI targets PWDs, it is a professional MFI; it is not a charity. Banco D-MIRO's incentive schemes for its credit officers are similar to those of other professional MFIs. These schemes include penalties for non-performing loans, including loans to disabled clients.

Table 1 shows descriptive statistics for disability status and the other variables used in this study.

Table 1

The binary variable 'Disability Status' (equal to one if the respondent is disabled, zero otherwise) shows that 34% of the respondents have disabilities, i.e., 96 of the 281 respondents belong to the PWD group. From the survey we also have more detailed information about the nature of clients' disabilities. 'Disability Severity' represents the PWDs' individual estimates of the severity of their disability. Specifically, this variable reflects the answer—on a 5-point scale ranging from 'very little' to 'very much'—to the following question: "To what extent does the disability affect your personal life?" The average score is 1.03 for the total sample but all of the zeros reported by the non-PWDs are included in that number; among the PWDs the average score is 3.01, with a standard deviation of 1.68. Within the total sample, 8% of the respondents have been disabled since birth, 10% became disabled at a relatively young age (0 to 25 years) and 14% became disabled after the age of 26.^{iv} Thus, as expected,

the probability of having a disability increases with age. We also report disability type: 8% of the sample respondents report that they are visually impaired, 2% are hearing impaired, and 1% have trouble speaking. The vast majority of the PWDs—25% of the total sample—have other types of physical impairments. Four percent of the respondents report impairments not covered by the first 4 categories. The respondents were allowed to report more than one disability type.

Despite these statistics, it is important to note that all the assessments of the nature of the disabilities have been made by the PWDs themselves. This holds for both the disability severity variable and the disability origin (age) and type variables. Different respondents could have different interpretations of the questions, particularly for the severity variable. In addition, the reader should note that we do not have details for each disability type; for instance, a person who has listed physical impairments may be bound to a wheel chair or have a more minor disability in the shoulder—this we do not know. Future studies should aim to collect more details about the specific disabilities than we have been able to obtain for this study; this could aid in developing even more precise recommendations when analysing the equity dimension of PWDs and discussing PWDs' special needs.

The respondents are 43 years of age, on average, and their mean number of children is 2. The sample is almost balanced with respect to gender and marital status. Specifically, gender is equal to 1 if the respondent is a female and 0 if the respondent is a male. The binary variable 'Married/United' is equal to 1 if the respondent has stated that (s)he is either married or united and equal to 0 if the respondent is single, separated or a widow(er). The average number of years of education is 9.45. 'Income' is the respondents' estimate of their monthly income measured in US dollars (the prevailing currency in Ecuador) before contracting with Banco D-MIRO. The average monthly income in the dataset is \$476 USD. 'Net Assets' is computed from Banco D-MIRO's own records, which are collected and estimated by specialised credit officers. Specifically, 'Net Assets' is the sum of all listed assets minus the sum of all liabilities. The average for the sample is \$11,722 USD. The number of late-paid instalments is this

study's repayment variable. This variable is collected from the bank's records and the average is 1.62. Thus, one of our study's strengths is that the important (to this study) variable of number of late instalments is not reported by the respondents themselves. The participants' personal characteristics, however, are collected from the phone survey.

Because this is an explorative investigation, our data are not suited to advanced statistical methods. Our research method is therefore simple and straightforward. Based on the binary variable 'Disability Status', we construct two sub-samples of clients (with and without disabilities) and compare the characteristics of the samples. We report t-tests for the observed differences in personal characteristics (see, e.g., Mizunoya and Mitra, 2013). The t-tests rely on the assumption that there is no bias in loan allocations stemming from these personal characteristics. This assumption is, however not critical for our study; the t-tests are presented to provide some *indications* of the statistical significance level of the results, but given the explorative nature of our study, none of our conclusions and recommendations are sensitive to the specific significance levels reported in these tests.

4. Empirical findings

We start the empirical investigation with an analysis of differences in the means of personal characteristics between the sample of PWDs and the control sample of non-disabled clients. The results are reported in Table 2.

With respect to age, disabled clients appear to be older than other clients (47 versus 42 years on average). If income and assets are increasing functions of (work) experience, the findings may be attributed to the lower risk associated with more experienced and, thus, older PWDs (cf. Mitra et al., 2013). In fact, untabulated statistics show that only four PWDs in our sample are younger than 27 years of age.

Regarding gender, our findings suggest that female PWDs are disadvantaged with respect to access to microfinance. Mitra et al.'s (2013) study of 15 countries finds that disability prevalence is higher among women than men (in every country studied). Thus, one might expect that the proportion of female customers with disabilities would exceed the proportion of female customers without disabilities. This is not our observation; females constitute 60% of the non-disabled clients compared to only 35% of the PWDs. The finding that clients with disabilities are more often men than women—the opposite of the results reported for non-disabled clients—instructively illustrates the usefulness of applying a control sample of non-disabled respondents, and it strongly suggests that women with disabilities struggle far more than men with disabilities with respect to becoming a client of a formal MFI.

Table 2

Table 2 also documents that disabled clients are less likely to be married/united (42% versus 56%) and that they have fewer children (1.6 compared to 2.2) than their non-disabled counterparts. This result could be a reflection of the disability community in general. However, the result may also be related to risk. More research is needed, but it is possible that for a given income (or net assets) level, customers are considered less risky when fewer persons depend on their income (that is, the fewer mouths that a given income must feed).

On average, PWDs seem to have the same education level (just over 9 years) as non-disabled clients. However, if education is needed to access microfinance services, this hurdle is relatively more difficult for PWDs to satisfy; it is well documented that PWDs' education levels in developing countries tend to be lower in general than for others (Mitra et al., 2013). As indicated in Section 2, education is a possible proxy variable for creditworthiness. However, more direct measures of creditworthiness would be income and net assets. Table 2 shows that the mean monthly income level before contracting with Banco D-MIRO is \$511 USD for PWDs and \$457 USD for non-PWDs. For net assets, the mean equals

\$11,937 USD for PWDs and \$11,614 for their non-disabled counterparts. None of the differences are statistically significant. To draw strong conclusions about discrimination in loan granting is tricky, especially in microfinance where the financial and social returns overlap (cf. Agier and Szafarz, 2013). However, we can say that because the sample is composed of clients with equal loan amounts, these results *are consistent with* the notion that the PWDs are not discriminated against in Banco D-MIRO. However, the results are also consistent with the notion that PWDs are not given ‘special treatment’ in a positive sense; the lower wealth of PWDs in general (Mitra et al., 2013) is not reflected in our sample of ‘successful’ PWDs—that is, PWDs who have been able to access microloans. This finding is expected for a professional MFI concerned with financial viability (and that offers identical incentives to credit officers for both disabled and non-disabled client groups).

The analysis of income and net assets (and also possibly of education) suggests that the way into microfinance for PWDs is to become as similar to other (non-disabled) clients as possible. This is a potentially important finding, both because it gives clear indications of which risk assessments are performed by the MFI and because it may contribute to the discrimination discussion. It is also an indication that MFIs focus on the equality dimension and not the equity dimension when granting loans to PWDs. To dig deeper into this issue, we present several additional statistics that may provide further indications of the *ex-ante* risk associated with the two groups of clients, see Table 3.

First, all respondents are asked if they have loans elsewhere (other than Banco D-MIRO). Obviously, from Banco D-MIRO’s perspective, the risk is higher if the customers have taken loans from several lenders. Approximately 30% of the customers state that they have loans elsewhere, and there is no significant difference between the PWDs and the other clients. Second, we present the sources of starting capital for the persons who run their own business because this may provide further indications of possible creditworthiness differences. The respondents are allowed to indicate more than one source of starting capital. Few differences between PWDs and non-disabled clients are found.

However, more PWDs appear to have received loans from informal lenders, frequently referred to as ‘loan sharks’. This result may indicate that PWDs have less access to formal financial sources or may signal that PWDs more frequently encounter situations in which access to quick cash is important (cf. the finding below that more PWDs use their loans to cover health expenditures).

Table 3

We also note that fewer PWDs obtain starting capital from their families. It is possible that family members have limited confidence in PWDs’ ability to run viable businesses and therefore prioritise non-disabled family members (cf. Yeo and Moore, 2003). This result may be compared to Beisland and Mersland’s (2014) finding that in Uganda, MFI staff with disabled family members generally have more negative attitudes about PWDs’ risk of loan default than do staff without disabled family members.

Next, we turn to loan investments to study possible differences in creditworthiness between PWDs and their non-disabled counterparts. First, all respondents are asked whether they initiated a new business activity after receiving a loan. Approximately 75% answer ‘yes’, and there is no significant difference between PWDs and other clients. Second, they are asked to provide more details about how the loans have been invested; again, the respondents are allowed to select more than one alternative. We see that nearly all customers spend a portion of their loaned funds on business activities, and once again, we document that PWDs who are able to access a formal MFI are (remarkably) similar to non-disabled customers. The only documented difference related to this question is that more PWDs spend a portion of loaned funds on health expenses. Seven percent of the PWDs select this alternative; if anything, the proportion of the PWDs who list health issues as important is surprisingly *low* (compared to results reported by studies such as Mitra et al, 2013).

The two final creditworthiness indicators included in Table 2 are the number of average daily hours worked and the proportion of the respondents who state that they save regularly. No significant difference is found between PWDs and other clients.

We now turn to research question 2 regarding possible differences in repayment rates among PWDs and others. The reader will note that we drop the t-tests for differences in means in this analysis; such tests are insufficient because they ignore potential selection bias stemming from loan allocation (cf. previous discussion on difficulties in testing for equal treatment of applicants; also see Dymski, 2006). The purpose of this analysis is to gain more knowledge that can help design policies to increase PWDs' access to microfinance services, and no recommendation in this study is sensitive to statistical significance levels.

Table 4 shows that non-disabled clients in our sample have 0.96 late-paid instalments on average. The average is 2.98 for PWDs. The numbers confirm general knowledge in the field that repayment rates are high in microfinance. We advise against drawing strong conclusions based on the finding that the average is higher for PWDs than others.

Table 4

First, the CREER product offered to PWDs is identical to the loan product offered to non-disabled clients. Banco D-MIRO has made no adaptations in response to the special needs of the PWDs. Loan design is noted as the main challenge by the PWDs themselves in a study by Beisland and Mersland (2012a), and, *ceteris paribus*, a higher number of late instalments among PWDs should be expected if disability-friendly loan products are not offered. We return to this important issue in the next section. Next, because Banco D-MIRO has a policy of specifically targeting PWDs, we cannot rule out that the observed difference in repayment rates is the result of a pro-disabled bias in the follow-up from the

MFI. For instance, it may be that loan officers pity PWDs and therefore accept late repayments for this group of clients to a greater degree or, in general, conduct less follow-up of PWDs. Moreover, systematic differences between the two groups other than the existence of disabilities (for example, type of business activities) may explain the results. Finally, as discussed in Dymski (2006), the possible existence of systematic discrimination in markets other than the credit market can affect loan repayments negatively.

Table 4 also presents results for sub-groups of the PWD-sample. PWDs that have been disabled since birth have the lowest average number of late repayments. In terms of disability type, we note that visually impaired PWDs have the lowest number of late repayments. Moreover, females have fewer late repayments than males, confirming the industry's general knowledge that women are better at repaying their loans (D'Espallier et al., 2013). Unsurprisingly, there is a positive correlation between PWDs' assessments of the severity of their disability and the number of late repayments.

5. Discussion and policy implications

What is the recipe for 'success' for PWDs who want to access microfinance services? We start this section by noting that our results for income and assets (and an extended set of risk proxies) appear to be consistent with the Ugandan study of Nuwagaba et al. (2012), who contend that PWDs are not necessarily denied access to microfinance if they meet the desired credit requirements. This is the equality perspective of microfinance research. The existing focus on the equality perspective might be attributed to much of the research on microfinance and disability emphasising the importance of incorporating PWDs into formal mainstream MFIs such as Banco D-MIRO (see Handicap International, 2006). The background of this recommendation is that access to microfinance must be permanent rather than a one-time event. Moreover, the study of Handicap International (2006) suggests that mainstream MFIs' inclusion of PWDs boosts not only PWDs' economic and social inclusion but also their self-confidence.

The primary challenge with respect to increasing the number of PWDs with access to formal MFIs is that, on average, PWDs are poorer than other people. Hence, a given creditworthiness requirement represents a more insurmountable hurdle for PWDs than for others. This is the ‘bad news’ of the research on microfinance and disability. There appears to be a vicious cycle; PWDs often do not access MFIs simply because their incomes are too low and because they are considered risky clients. At the same time, it can be argued that (often self-employed) PWDs are poorer simply because they have no access to entrepreneurial capital. In general, we support the recommendation (Handicap-International, 2006) that the focus should be on including PWDs in mainstream MFIs which, in contrast to short-term project capital initiatives, are able to become long-term financial partners for their clients. However, given the vicious cycle just described, PWDs must be sufficiently empowered. Thus, shorter-term disability development efforts may have an important role to play in building PWDs’ creditworthiness. In addition, well-structured funds to guarantee PWDs’ repayment of loans may be useful.

Unfortunately, there is reason to believe that PWDs would often be excluded by MFIs even if they meet every creditworthiness requirement put forward by the MFI. Despite limited academic evidence on discrimination against PWDs in microfinance (one of a few exceptions is Labie et al., 2015), we believe that the existence of discrimination is beyond doubt; cf. Dymksi’s (2006) statement that “premises that are common wisdom in lived communities are debated fiercely and inconclusively in think tanks and universities” (p. 215). Disregarding that we in this study have been fortunate enough to identify an MFI in which the inclusion of PWDs is part of its primary strategy, in more general terms we strongly believe in an increased focus on training and in creating awareness on disability issues among MFI staff. Regarding the latter, it is important to remember that excluding minorities may not be intentional (Dymski, 2006). We believe that the design of special incentives for credit officers who include PWDs in their portfolios could be assessed (Labie et al., 2015).

In our study, education seems to be a key variable; PWDs that have access to microfinance have an education level similar to that of non-disabled clients. Several studies stress the importance of education for poor people and particularly for PWDs (Beisland and Mersland, 2012b; Mitra et al., 2013). Education is an important means of boosting self-confidence and social inclusion, and it is important for improving both income level and access to private and public services—in this case, microfinance services.

We also note that the tendency to save is high among disabled microfinance clients. Savings represent one path to acceptance by MFIs. The fact that so many of the successful PWDs in this study report that they save should prompt an increased focus on saving as a means of empowerment not only because savings represent an important source of capital but also because savings most likely increase individuals' likelihood of accessing formal *microloans*.

Regarding personal characteristics, our results suggest that young PWDs face particularly large difficulties accessing microfinance services. Given that microfinance can be a means of reducing the disability gap in employment rates and improving the general economic status of PWDs (Handicap International, 2006), a vital recommendation for development organisations and socially concerned MFIs is to increase efforts related to young PWDs.

The finding that disabled clients have fewer children than their non-disabled counterparts may be a reflection of the disability community. However, it may also signal that PWDs with many children have particular challenges when trying to be accepted by an MFI; our results are consistent with the notion that feeding an additional mouth is more challenging for disabled than for non-disabled parents.

Regarding gender, we find that females appear to be severely under-represented in the PWD sample. This is a paradoxical result given that female PWDs appear to have better repayment rates than male PWDs. Combining our finding with Mitra et al.'s (2013) finding that female PWDs have higher multidimensional poverty than male PWDs and less access to formal jobs, it seems highly reasonable to conclude that women with disabilities are more financially disadvantaged than men with disabilities. It is likely that this result is at least partially attributable to female PWDs' lower likelihood of being sent to school compared to male PWDs (Yeo and Moore, 2003). An obvious policy recommendation is for development programmes aimed at helping PWDs in poor countries to have a particular focus on women, taking into account that entrepreneurial projects for females are smaller-scaled than those for males (Agier and Szafarz, 2012). Prior research has shown that debt has a social meaning in addition to being a vital means for entrepreneurship (Guerin et al., 2013); therefore, inclusion in the form of access to microfinance can improve the status of female PWDs in more general terms as well (cf. McNulty, 2015). Our study is one of the first to provide indications of the interaction between gender, disability and access to microfinance, but much more research is needed on this topic. We recommend looking to other fields of research, for example education (see Wehmeyer and Ruosso, 2006), to learn more about how to achieve equity for females with disabilities.

Moving to the analysis of repayment statistics, the finding that PWDs have more late repayments than others could have several causes and should be interpreted with caution. For instance, it is important to remember that there could be additional costs associated with being disabled, resulting in less cash available for loan repayment. The previously reported finding that PWDs more frequently use their loans for health purposes (and perhaps also the finding that they more frequently use 'loan sharks' to access cash) lends credibility to this argument. PWDs can have expenses to cover that are related, directly or indirectly, to their disability and we believe that this should be taken into account when MFIs offer PWDs access to their services.

This brings us to what we contend may be one of the most important policy recommendations from this study; the design of disability-friendly loan products that are flexible and incorporate the special needs of PWDs. Although our data themselves do not provide an answer to why we observe more late repayments in the PWD sample than the control sample of non-disabled clients, we strongly believe that the fact that Banco D-MIRO offers the same standardised and inflexible loan product to PWDs and others is a major explanatory factor. We believe that a main explanation for the exclusion of PWDs from microfinance services is that MFIs fail to apply an equity lens to this (potential) client group. Heymann et al., (2014) provide several examples of adaptations to the special needs of PWDs from settings other than microfinance. In microfinance, PWDs may have specific challenges in qualifying for loans, and they may need specific support in establishing and maintaining the business (a blind person needs assistance in managing her business; a person in a wheelchair may need specific infrastructure; frequent visits to the clinic or regular health challenges may compromise the client's ability to run their business; etc.). Truly flexible products are what is needed, not just another standardised product for PWDs, and loan officers must be prepared to offer special service to PWDs. For instance, we often observe that when clients visit an MFI, they must climb stairs or navigate crowds. Just a little extra help can take away what appear to be insurmountable hurdles.

The high standard deviation for late repayments of PWDs, the positive correlation between disability severity and late repayments, and the varying repayment rates between different sub-groups of the PWDs are findings in this study that are consistent with the special and specific needs of people with different types of disabilities. Our findings align well with the findings of Beisland and Mersland (2012a) in their Ugandan study, which strongly suggest that loan design is of great importance. In fact, when PWDs are asked directly what they consider to be the barriers that hinder PWDs' access to microfinance, Beisland and Mersland (2012a) find product design to be the most important by far. In their study, 46% of the respondents fear that MFIs' loan conditions might not suit their needs.

Disability-friendly products will probably attract more PWDs and also improve their repayment capacity.

6. Conclusion

This study rests on the premise that access to capital is important for PWDs because they are often self-employed. Therefore, the main purpose of our study is to learn more about the few PWDs that actually have been able to access such services and use this knowledge to develop initial policy recommendations that can improve PWDs' access to microfinance in general.

Even if the results of this study (and also the study by Nuwagaba et al., 2012) suggest that MFIs do not necessarily deny PWDs access to microfinance if they meet the same creditworthiness requirements as others, we believe that an equity lens in addition to such an equality lens is needed for MFIs to reach the disability market. An equity lens would probably lay the groundwork for a more positive and optimistic attitude towards this vulnerable group of people. In fact, given that 15% of the population of developing countries has some sort of disability (WHO, 2011), we believe that the microfinance industry should view the disability community as a huge, untapped market opportunity. It is important to remember that "disability does not necessarily mean inability" (Handicap International, 2006, p. 6). The way forward is to find the right 'recipe' for serving this market appropriately, thus assuring the inclusion of disabled customers without harming MFIs' sustainability. Adjustments to the inflexible loan products typically offered by MFIs is a place to start, and we recommend that the design of disability-friendly microfinance products as well as guarantee schemes for PWD clients be placed at the forefront of the agenda.

General research on PWDs' socioeconomic situation in developing countries remains in its infancy. Access to high-quality data seems to be a recurring challenge for disability research (Mitra et al., 2013), but we contend that case studies such as this are a good starting point. In our case, Banco D-MIRO in

Ecuador was chosen because it is one of few MFIs with a sufficient number of disabled clients (for this research to be feasible). Nonetheless, we conclude the study with a caveat regarding external validity (cf. discussion in Agier and Szafarz, 2012); the reader should be aware that country-specific as well as MFI-specific factors might have affected our findings. The fact that the specific research setting can be relevant is illustrated by the study of Guerin et al. (2013), which analyses a sample from southern India to show the influence of cast, class and locality on the access and use of debt.

Nonetheless, despite differences across the samples and cases, it is interesting to note that the vital recommendation from this Ecuadorian study on the need for disability-friendly and flexible loan products is identical to the recommendation drawn from a survey conducted in a totally different setting, namely a survey among PWDs in Uganda (Beisland and Mersland, 2012a). Still, there is no doubt that “...so much work, and so many challenges, remain” (Dymski, 2006, p. 247). At this stage, explorative studies provide useful insights and a future fruitful avenue for studies of disability and microfinance could be to identify a group of PWDs who have been unable to access formal MFIs and establish the reasons for their lack of success. The next step is to combine the results documented in novel empirical studies to develop more rigid theory and hypotheses. The policy recommendations in this area will probably be even more effective when the research moves beyond expert observations, descriptive studies and stylised facts and establishes a solid theoretical platform on which to base further analysis.

Appendix: Banco D-MIRO and PWDs in Ecuador

The study data consist of survey evidence gathered from clients of the MFI Banco D-MIRO in Ecuador. The bank is wholly owned by the Norwegian Mission Alliance, a faith-based international NGO and is regulated as a regular commercial bank by Ecuadorian banking authorities. The bank is a typical example of an MFI with social motives and an objective of long-term survival. Thus, financial sustainability is a premise of the bank's governance. As of the second semester of 2012, the time of the survey, the bank had approximately 40 thousand clients with a loan portfolio of \$47 million USD. The microfinance market in Ecuador is competitive and consists of dozens of NGOs and cooperatives competing alongside four specialised microfinance banks, including Banco D-MIRO. Additionally, the two largest commercial banks have specialised departments that operate large-scale microfinance activities. Banco D-MIRO is the second-smallest of Ecuador's microfinance banks, and its average loan balance is one of the lowest in the market, illustrating the bank's poverty focus. Banco D-MIRO is the only Ecuadorian MFI that makes targeted efforts to include disabled clients.

Of Ecuador's 15 million people, 1.6 million are estimated to have a disability, but only 66,000 of those people have a formal job according to CONADIS, the country's office for inclusion of the disabled (www.conadis.gob.ec). CONADIS is headed by Lenín Moreno, a paraplegic who served as Ecuador's vice president for six years before leaving office in 2013. Ecuador has introduced progressive politics to ensure the rights of PWDs. Its policies include a four percent quota system for larger enterprises. According to the Labor Inclusion Service (Servicio de Integración Laboral), ten thousand persons with different types of disabilities were incorporated into the formal job market between 2006 and 2012 (www.worldbank.org). Nevertheless, regardless of the government's focused efforts, most PWDs in Ecuador resort to self-employment. The reasons for this include low levels of compliance with the law and low education rates among the disabled population, along with the fact that many PWDs prefer self-employment due to its flexibility. Faced with the hazards related to qualifying for the job market

and moving between the workplace and the home, many PWDs find running small income-generating activities from their homes to be the best option.

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Tables

Table 1: Descriptive statistics

	Mean	St. dev.	Q1	Median	Q3	n
Disability Status	0.34	0.48	0.00	0.00	1.00	281
Disability Severity	1.03	1.73	0.00	0.00	1.00	281
Disabled since birth	0.08	0.27	0.00	0.00	0.00	281
Disabled since 0-25 years	0.10	0.30	0.00	0.00	0.00	281
Disabled since >26 years	0.14	0.35	0.00	0.00	0.00	281
Visually impaired	0.08	0.27	0.00	0.00	0.00	281
Hearing impaired	0.02	0.14	0.00	0.00	0.00	281
Problems speaking	0.01	0.08	0.00	0.00	0.00	281
Physically impaired	0.25	0.44	0.00	0.00	1.00	281
Other impairment	0.04	0.20	0.00	0.00	0.00	281
Age	43.30	11.26	34.00	43.00	51.00	281
Gender (female = 1)	0.52	0.50	0.00	1.00	1.00	280
Marital status (married/united = 1)	0.51	0.50	0.00	1.00	1.00	281
Children	2.01	1.53	1.00	2.00	3.00	273
Education	9.45	3.86	6.00	10.00	12.00	281
Income before D-MIRO (USD)	475.76	523.40	250.00	350.00	575.00	216
Net Assets (USD)	11721.71	9586.99	5363.34	9374.00	15399.73	275
Delayed Instalments	1.62	2.37	0.00	1.00	2.00	275

Table 2: A comparison of PWDs and non-disabled microfinance clients

	Disabled	Non-disabled	Diff.	t-value	
Age	46.58	41.59	4.99	3.65	***
Gender (female = 1)	0.35	0.60	-0.25	-4.09	***
Marital status (married/united = 1)	0.42	0.56	-0.14	-2.24	**
Children	1.63	2.22	-0.59	-2.95	***
Education	9.38	9.49	-0.11	-0.22	
Income before D-MIRO (USD)	511	457	55	0.66	
Net Assets (USD)	11937	11614	323	0.26	

Notes: One (*), two (**) and three (***) asterisks denote the conventional 10%, 5% and 1% significance levels, respectively, as measured with a t-test for differences in means.

Table 3: A further analysis of possible differences

	Disabled	Non-disabled	Diff.	t-value	
Loans elsewhere	0.30	0.31	-0.01	0.10	
<u>Starting capital (source):</u>					
Savings	0.38	0.35	0.03	0.44	
Money lenders ("loan sharks")	0.11	0.02	0.09	2.67	***
MFI or bank	0.41	0.42	-0.01	-0.24	
Friends	0.04	0.02	0.02	1.09	
Family	0.05	0.11	-0.06	-1.68	*
Others	0.13	0.16	-0.03	-0.87	
Started new enterprise	0.76	0.73	0.03	0.49	
<u>Loan investments (spending):</u>					
Housing	0.14	0.08	0.06	1.42	
Business	0.94	0.98	-0.04	-1.64	
Health	0.07	0.00	0.07	2.52	**
Education	0.01	0.01	0.00	0.00	
Consumer goods	0.06	0.02	0.04	1.54	
Other	0.02	0.01	0.01	0.63	
Hours worked per day	8.70	9.10	-0.40	-0.92	
Saving regularly	0.67	0.60	0.07	1.04	

Notes: One (*), two (**) and three (***) asterisks denote the conventional 10%, 5% and 1% significance levels, respectively, as measured with a t-test for differences in means.

Table 4: Number of late repayments

Panel A: Disability status					
	Mean	Standard deviation	n		
Non-disabled clients	0.96	1.35	184		
Disabled clients	2.98	3.25	91		
Panel B: Sub-categories of PWDs					
Disabled since birth	2.60	3.32	20		
Disabled since 0-25 years	3.46	4.00	26		
Disabled since >26 years	2.71	2.73	38		
Visually impaired	2.38	2.29	21		
Hearing impaired	5.50	4.81	6		
Problems speaking	2.50	0.71	2		
Physically impaired	3.03	3.27	67		
Other impairment	3.83	4.13	12		
Males	3.25	3.73	60		
Females	2.45	1.98	31		
Panel C: Correlation delayed paid instalments and disability severity					
			Corr. coeff.	p-value	n
Correlation (late repayments, disability severity):			0.25	0.019	87

ⁱ (Social) equity is a frequently discussed concept in this article. Equity is about creating equal opportunities for people with different characteristics, resources and needs. Blanchard (1986) states that "equity and fairness are synonymous (p. 29)". A more precise definition is offered by Falk et al. (1993, p. 2): "Equity derives from a concept of social justice. It represents a belief that there are some things which people should have, that there are basic needs that should be fulfilled, that burdens and rewards should not be spread too divergently across the community, and that policy should be directed with impartiality, fairness and justice towards these ends."

ⁱⁱ The average loan size (qualified amount) is \$1,636 USD for the PWD sample and \$1,535 USD for the control sample. The difference is not significant as measured by a t-test for differences between means (t-value: 0.95).

ⁱⁱⁱ The data are anonymised before any analysis is carried out.

^{iv} The observant reader will note that a few of the PWDs did not list the age at which they became disabled.