

Investing in Boys and Girls: Schooling Decisions and Credit Constraints for Microfinance Participants in India

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Investigating the impact of microfinance participation in India on educational outcomes, this study focuses on the changes that participation in SHGs brings about in the education of boys and girls of member households in Jharkhand.

INTRODUCTION

The impact of financial services such as savings and credit on the economic and human development of users remains far from being identified to date. In particular, understanding whether and how microfinance can improve children's education is of crucial importance, given the widely-accepted links between human capital formation and development outcomes such as poverty reduction and growth.

Evidence has repeatedly shown that microloans are probably not enough on their own to directly foster business creation and economic development. People often lack the relevant infrastructure, market outlets and, especially, training or education. Yet, if microfinance impacts the education of children, it could bring about important changes in the long term. There are good reasons to expect microfinance to impact schooling decisions among member households.

Access to credit can help afford education-related expenses by relaxing the budget or liquidity constraints. It can modify the preferences of households' by empowering women and generating important peer effects. It can modify occupational choices and influence the opportunity cost of educating children. It can better ensure households against income variation, thus decreasing the need to pull children out of school whenever shocks happen.

The impact of microfinance on educational outcomes is hard to measure not only because of the usual selection bias but also because these impacts can take a fair amount of time to materialize due to state dependence in school attendance, cohort effects and behavioral inertia. Solid empirical evidence on the matter is both meagre and mixed. Utilizing both quantitative and qualitative studies, we find a generally positive effect of microfinance on child schooling, though with important gender heterogeneity for some studies. However, none of the reviewed studies can reasonably be interpreted as causal estimates of the impact of microfinance.

Recently, some randomized control trials have tried to tackle the issue of selection bias seriously. Although those studies were short-term and not caveat-free, they tend to indicate that microfinance has no impact on educational outcomes. Using a large microcredit initiative by the Thai government as a natural experiment, it was found that access to microcredit had a sizeable impact on other consumption items but left the educational expenditure stable. By contrast, members of the Bolivian microfinance institutions (MFIs) were more likely to keep children in secondary school. Yet, studies show that this probability decreases if the family owns agricultural land and argue that this reflects the fact that increasing opportunities to work on a farm might increase the demand for child labour. A study conducted in two rural towns in Guatemala while supporting the positive effects of micro-loans on schooling, shows a statistically significant negative effect on schooling if the family enterprise such as a tailoring shop or a retail business requires a skill. Along the same lines, credit may reduce the likelihood of going to school in Pakistan if the children are already working part-time in a family business, and increase the enrollment of children who did not work previously.

Short-term effects tell little about long-term welfare. First, we know that development outcomes often take time to materialize, for example, because behaviours need to adapt, investments need to mature before becoming profitable, or certain thresholds need to be crossed for results to accelerate and eventually become sizeable. Second, although transition paths are certainly relevant, it is the stable, equilibrium state that truly matters

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when evaluating the impact of microfinance. Some effects might be short-lived responses, ultimately reverting to the pre-intervention equilibrium or, to the contrary, continue for a long time before they stabilize. Third, microfinance certainly triggers general equilibrium effects, whereby credit, labour and/or good markets would need time to absorb the shocks. All of the above imply that aiming

at the identification of longer – run effects should rank high on the evaluation agenda although it is extremely challenging (for instance, arguably no randomized experiment could ever maintain a pure control group long enough).

The study focuses on a particular form of microfinance, namely the Indian Self-Help Groups (SHGs). These are very small-scale, informal and decentralized institutions. Yet, bank-linked SHGs are the dominant microfinance model in India and probably the world's largest. Moreover, despite their very interesting characteristics (especially regarding sustainability and outreach), SHGs have been largely under-researched so far.

Our data comes from an original survey that takes the form of an extended 'Living Standards Measurement Survey', which was administered in four waves between 2002 and 2009. Whereas the non-randomized nature of the treatment does not allow obvious causal inference, the richness and the long time-span of the panel database permits the observation of a wide-ranging set of longer – run evolutions and dynamic mechanisms at the individual, household and village levels.

More generally, we believe the richness of the data allows a fairly detailed description of the economic lives and decisions of microfinance borrowers and their neighbours, which might help designing better-targeted (randomized) evaluations in the future. Combining matching and panel-data techniques, this paper focuses on educational outcomes, to find the following. First, we find a strong increase in children's school enrollment that appears in the last round of data, that is, after six years of membership. Though there is evidence that the process started earlier, our finding implies that educational outcomes and enrollment rates, in particular, can take a long time to materialize. Second, the detected effect is much stronger and significant for girls than for boys, thereby reducing the wide gender gap in education observed at baseline—and which is known to be a persistent problem in India.

By the last round of the survey, the SHG members had closed the gender gap at the primary and the secondary levels. Third, we found that household composition and, in particular, the presence of younger siblings that need to be looked after is an important constraint for schooling decisions, which microfinance members are able to overcome. Fourth, one important channel for the effects appears to be the empowerment of women within the household, whereby mothers with enough say in household decisions, are able to take advantage of their participation in the SHGs to foster their children's education.

THE PROGRAMME AND ENVIRONMENT UNDER STUDY

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programme in Central India, initiated by a large development NGO called the Professional Assistance for Development Action (PRADAN). The main objective of the organization is to promote and strengthen the livelihoods of socio-economically disadvantaged communities such as indigenous people, women, Scheduled Castes (SCs), landless and the marginal and small cultivators. Central to this broad agenda is microfinance, which is considered as a means for rural poor to make strategic

investments in improving their livelihoods over time. Yet, unlike other microfinance models in which the NGO develops itself as the alternative credit provider, PRADAN organizes women in Self-Help Groups (SHGs) that become microfinance institutions themselves. These SHGs are small, informal village associations, which are engaged in a variety of collective activities, of which savings and credit are the most important. PRADAN promoted its first SHGs in 1987 in Rajasthan. In 2009, it was active in eight states of North India and had around 11,000 running SHGs.

This study focuses on the state of Jharkhand, which was carved out of Southern Bihar in the 2000 due to political pressure from tribal groups. It is among the poorest of the 28 Indian states, with 46 per cent of its rural population below the national poverty line (according to the latest official 2005 figures available). It has a comparatively lower literacy rate at 53.6 per cent as against the national average of 65.4 per cent, with 67.94 per cent in males (75.85 per cent is the national average) and 39.38 per cent in females (54.16 per cent is the national average) (2001 Census). Jharkhand is mostly rural (78 per cent of its 30 million inhabitants)

and its population comprises 28 per cent tribals and 12 per cent people belonging to SCs, which are known to be the most vulnerable groups of India. In its 2008 India State Hunger Index, the International Food Policy Research Institute (IFPRI) estimated that Jharkhand had the second highest level of hunger and malnutrition in India, behind only Madhya Pradesh. Historically, Jharkhand

has been lacking well-performing local NGOs and, today, it combines one of the lowest SHGs to population ratio (less than 200 SHGs per 100,000 of population) with one of the highest percentages of poor population nationally.

By 2009, PRADAN was working in 12 of the 24 administrative districts that constitute Jharkhand and had established microcredit groups in about 2,000 villages in these areas or about six per cent of all villages in the state (corresponding to over 60,000 women). An important aspect of PRADAN's strategy for expanding its activities has been to concentrate its programmes in geographical clusters (targeting administrative blocks with high incidence of rural poverty), following a strategy of 'saturation' of the area. This strategy was chosen not only for administrative ease and economies of scale but also to enable beneficiaries in different villages to interact and learn from their combined experience.

SELF-HELP GROUPS AND PRADAN'S INTERVENTION

This section will describe in detail how this general definition translates into the environment under study. Establishing a group usually begins with a PRADAN representative holding a meeting at some public place in a village, such as the *panchayat* office or the

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primary school, where the details of the programme are explained. Within geographical clusters around the local offices, PRADAN chooses to work with relatively disadvantaged communities and poor villages, where no other NGO has worked before. A study by CGAP (an independent policy and research center) found that PRADAN had indeed deeper-than-average outreach: almost all the SHG

members are tribal people or SCs, of which 85 per cent have no homestead land or only marginal non-agricultural landholdings and almost 90 per cent of them live in thatched huts or are squatters (CGAP, 2007).

After a few such meetings, a group of 10 to 20 motivated women is formed. One important rule imposed by PRADAN is that there may be only one member per household in a group. If a village is large, or the interest in the programme is widespread, multiple groups may be created. Moreover, new groups are often created after a few years. After some initial training and capacity building by the NGO, the group chooses a name for itself, agrees on a weekly meeting time and determines other group rules such as the minimum contributions per member at each meeting (usually Rs 5 or 10, which amounts to about USD 0.5—1 per month), the interest rate charged on loans that are given to group members and fines for non-attendance or late payment.

After a few months of smooth functioning, a savings account is opened at a commercial bank near the village, to deposit the group's savings, and usually after about a year, the groups showing mature financial behaviour are allowed to take bank loans for a variety of income generating activities (the group is then said to be linked). At that point, groups are

pretty much autonomous and the intervention of the NGO is only required to solve occasional problems. PRADAN then starts unrolling some livelihood programmes, in which SHG members are trained for farming or for any other self-employment activity of their choice.

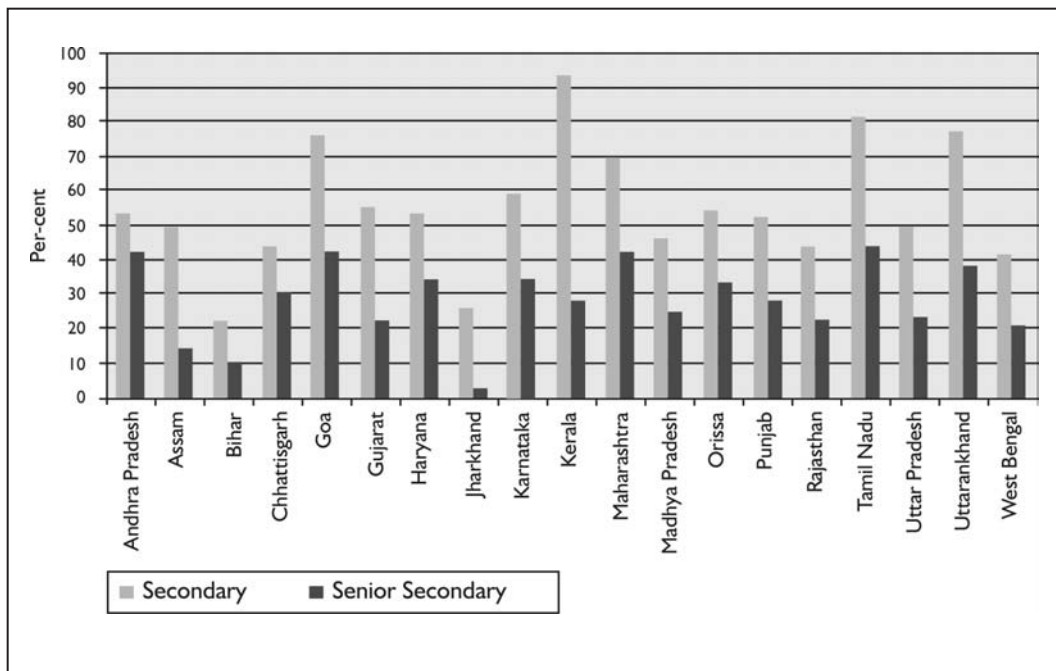
As a conclusion, the bank-linked SHG model is a decentralized, cheap and potentially sustainable way of providing access to small-scale savings and credit services in rural areas (not to mention other potential benefits from the group structure, such as peer support and other social services). It is often thought of as being well suited to progressively and safely foster greater confidence in the poor, instill financial discipline, reduce vulnerability and cultivate smoother consumption profiles, help access the formal financial sector and eventually create new livelihood activities that improve their standard of living.

Today, the bank-linked SHG model is considered the largest financial inclusion programme in the world, with almost seven million bank-linked SHGs in India covering about 97 million families, as on 31 March 2010 (NABARD, 2010). This represents a remarkable achievement, especially given the general belief that standard microfinance products remain more suited to urban and semi-urban areas rather than to the rural world. Yet, very few (impact) studies have focused on SHGs.

EDUCATION IN JHARKHAND AND THE POTENTIAL ROLE OF SHGS

The educational system in Jharkhand (as in most of India) follows a 5 + 3 + 2 + 2 schedule, the end of each step being sanctioned by examinations. Primary school (grades 1 to 5) starts at 6 years, followed by middle school (grades 6 to 8), lower secondary (grades 9

Figure 1: Gross Enrollment Ratio by State



Source: World Bank (2009) - data from MHRD 2004-05

and 10) and higher secondary (grades 11 and 12). The average primary enrollment is 72.1 per cent in Jharkhand, much lower than the national average at 83.3 per cent (figures from DHS 2005–06). In addition, there is a very low transition rate into secondary school; Jharkhand has one of the lowest secondary enrollment rates in India, which is not due to exam failures. One problem certainly lies in the infrastructure: only 36 per cent of villages in Jharkhand lie within 5 km of a lower secondary school and 23 per cent within 10 km of a higher secondary school.

In some cases, however, in the absence of attractive schooling (for example, low returns to education, poor infrastructure and absenteeism of teachers), parents might prefer to send their children to work instead. Parents might also be deterred from sending their children to school due to the high costs associated with schooling.

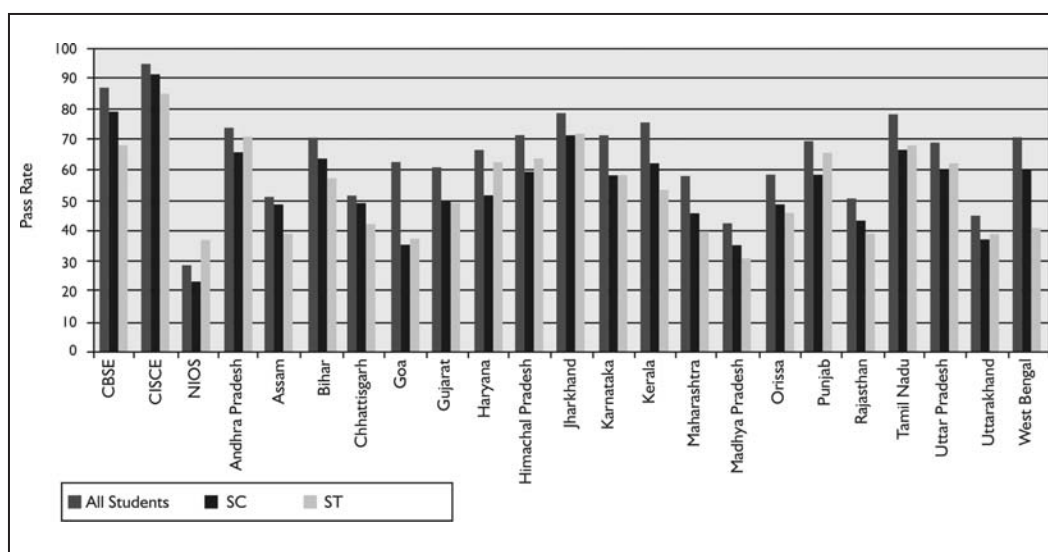
with the Right of Children to Free and Compulsory Education Act (which came into effect on 1 April 2010). As a consequence, there was no major change in the legal environment during the seven years of our survey. However, many smaller and narrower schemes have always existed to provide incentives to improve the enrollment rates at the various education levels (for example, Sarva Shiksha Abhiyan and Mid-day Meal). Given that they are always implemented at the district level, it is important to account for district fixed

results in the subsequent analysis.

The Indian Constitution directs the state to provide free and compulsory education for children until 14 years of age (article 21A, added in 2002). Yet, this legal provision was translated into an Executive Act as late as 2009

Research usually highlights the fact that when deciding how the children should spend their time, parents usually have a strong preference for schooling, as long as the basic needs of the family are covered. Yet, altruistic and egoistic

Figure 2: Pass Rates of Students



Source: World Bank (2009) - data from MHRD 2004-05

motives may apply. Altruistic parents want the best for their child and choose education over work to secure the future of their offspring. On the other hand, egoistic parents might prefer to pay the upfront cost of schooling and reduce the current household income, in return for a higher income later on when the children are older and earn higher wages due to a better education. Note, that this last motive is likely to entail important gender differences in the context under study because girls usually leave the family household early to live in her in-laws' household after marriage.

In some cases, however, in the absence of attractive schooling (for example, low returns to education, poor infrastructure and absenteeism of teachers), parents might prefer to send their children to work instead. Parents might also be deterred from sending their children to school due to the high costs associated with schooling (for example, school fees, expenditure for books, uniforms and transportation), especially if they have to be paid as a lump sum.

One of the ways in which the SHG membership can help in the education of children is by providing credit to pay for those expenses. These costs are likely to be limited in our context, given that most schools in Jharkhand are public schools, which are supposed to be free up to the age of 14. Some evidence suggests, however, that this may not always be the case. School expenditure for a child, including tuition fees as well as expenditure on uniforms or stationary, are around Rs 340 per year in rural India, implying that for an agricultural labourer living in Bihar with three children, the complete earnings from more than 40 days of work would go towards sending his children to primary school. In

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our sample, the median annual school expenses per child enrolled amounted to Rs 480 in 2008, which represented 3.3 per cent of the median household income. When restricting the sample to households with at least one child enrolled in a secondary school, the median

school expenses per child enrolled is Rs 1,747 (11.9 per cent of the median income), a very sizeable amount. As a consequence, the cost will especially matter at the secondary level.

The relaxation of credit constraints is not the only channel through which the SHGs can affect educational outcomes. If SHGs facilitate income generation in micro – and small enterprises/farms, they can be potentially important instruments in reducing child labour and, therefore, increasing education. Furthermore, if credit reduces the need for temporary migration in search of cash for adult members in the household, we might observe a decrease in child labour and, once again, potentially higher school enrollment and/or attendance.

Perceived returns to education might also increase in the medium run if households switch to higher-return, larger-scale businesses or can afford to pay for (long-distance) migration of children. This said, the evidence regarding the potential of microfinance to generate new income remains mixed. Moreover, the overall effect need not be positive if the newly-created activities actually require more labour—which might take the form of more help from children.

Another way SHG membership could affect children's education is through providing insurance against income shocks. Indeed, SHGs help to smooth income in the face of adverse rain shocks and may, therefore,

decrease the need for child labour as one traditional way of diversifying and smoothing family income. In case of 'consumption smoothing', parents might decide to take their children out of school and put them into work to sustain a certain minimum consumption level if parents' income drops or fails. The danger of this strategy lies in the irreversibility of child labour. Once children are taken out of school and integrated into the labour market, transition

back to school is often very difficult. As a result, children continue working even when the direct consequences of a shock are overcome. In Guatemalan household data, negative shocks substantially increase the probability of child labour. Coupled with the evidence that child labour shows a high degree of persistence, they deduce that "policies aimed at improving access to credit and providing safety nets, especially for poorer households, appear to be among the most powerful instruments for promoting school attendance and reducing child work."

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in education and the general well-being of their family. The resulting increase in enrollment, if any, may entail gender discrimination. For instance, given that the returns that men get are much higher in the labour and the marriage (because of the dowry system) markets, the additional resources may benefit boys more than proportionally thereby increasing the gender gap in education. This may revert when some target education level for boys is reached in the

household, after which investment in girls may take over and the gender gap may decrease.

EDUCATION RESULTS

We first present descriptive statistics of enrollment rates in our sample. We report the average enrollment rates by age categories corresponding to the three main education levels. Primary school starts at six and lasts five years. Taking into account late entries and/or grade repetition, we consider the primary school age as 6 to 11 (and entry as 6 to 7), middle school age 12 to 14 and secondary school 15 to 17 (age 18 is not included because the survey did not cover the enrollment of children beyond 17).

First, we find that the household-level and the child-level statistics are very similar and become virtually equivalent in the last

Table 1: Membership Distribution of Sample

Status	Year			
	2002	2004	2006	2009
SHG members	25.0	44.2	48.3	44.8
Non-members in treatment villages	75.0	35.5	31.8	35.0
Households in control villages	0	20.3	19.9	20.2

age category, for which most households have only one child of the relevant age.

Second, as expected, we also observe higher enrollment rates for boys than for girls and large dropout rates in secondary school. Third, except in the 12 to 14 age group, SHG members start off being largely similar to other households (in particular non-members), but experience a more rapid rise in enrollment rates so that significant differences are observed mostly in the last round and, in particular, at the level of (early) entry into primary school and (late) into secondary education, which corresponds to the end of compulsory and free education.

As will become clearer, late entry and secondary school dropouts are indeed two very serious issues in the area under study. Finally, the increase of enrollment rates experienced by SHG members appears especially strong for girls whereby the important gender gap that is present in the first round(s) is virtually closed in the last round—at least for the primary and secondary levels. As a matter of fact, there is not much evolution in the age group of 12 to 14 because the enrollment of those children is largely determined by the decision to enter primary school (there is no big transition issue as for secondary education). As a consequence, those children are either too old or too young to be really affected by SHG participation (except perhaps for a reduction of dropouts). In the analysis that follows, therefore, we focus on overall, primary and secondary enrollment.

Our main analysis will normally make use of all the rounds of data, thus controlling for the enrollment level before the time at which the SHGs started their activities. However,

Another reason is that SHGs, by progressively accumulating the regular deposits of their members and becoming linked to a commercial bank after some years, require time to produce results, if only in terms of access to credit. There might be more subtle reasons as well.

given that we had only a limited sample in the first round, we are unable to get robust estimates for children above 14. For that reason, we compute the estimates for the last age group, using data from round two to round four (for which we can construct a proper base category). In round two, there is already a potential effect of one year of the SHG membership, even though we believe this effect to be essentially limited

because the groups are still mostly in their savings phase and none were then linked to a bank. At most, by comparing round four to round two, we may underestimate the total effect of participation, if some effects were already at work in round two. On the other hand, excluding the first round, which covers a restricted sub-sample of households interviewed in the later rounds, helps us in getting more precise estimates of enrollment in the base year and a well-defined control group over all rounds. We, therefore, check the robustness of all results when dropping the first round.

ENROLLMENT

In the basic estimation of enrollment rates for children of different age groups by rounds and membership status, we find a general increase in the enrollment rates of the entire population; particularly from 2006 onwards. Yet, the effect is significantly stronger for members, implying that children from participating households are significantly more likely to be enrolled in the last round (2009) than children from non-participating ones. The overall average effect is between nine and 15 per cent. This is true at all levels of schooling although especially strong at the entry into primary school, in which the average effect exceeds 20 per cent.

Although some of these effects were already present in earlier rounds (especially for children of entry age), the bulk of these effects materialize in round four.

Various reasons may explain the strength of the impact in round four. The first and most obvious one is that, for enrollment rates to change, one needs to have enough children entering the critical age groups for education decisions (for example, 6 to 7 years for entry into primary, 16 to 17 years for entry into secondary) because, otherwise, the effect gets diluted in the 'average' enrollment rates, which include children for which those effects are irrelevant.

Another reason is that SHGs, by progressively accumulating the regular deposits of their members and becoming linked to a commercial bank after some years, require time to produce results, if only in terms of access to credit. There might be more subtle reasons as well. For instance, participation in an SHG involves repeated interactions with other group members that may change attitudes or preferences with respect to schooling and we do not expect those effects to be instantaneous.

OTHER INDICATORS AND MECHANISMS

We now provide various alternative approaches suggesting that the entry effect is at least as important as the reduction in dropout rates. The results on entry (6 to 7 years old) are larger and are essentially present over all rounds.

For these children, the initial enrollment decision was taken before the start of the SHG programme and any differential evolution between members and other households essentially reflects a differential dropout. We

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do not find a strong reduction in the average dropout rates for children of member households. (Some caution is in order here because the effects estimated for round four are composed of changes in dropout rates in middle school and changes in entry rates into the non-compulsory grades of the secondary school.)

We also observe an evolution of (a few) households with school-age children, who are not enrolled in 2004 and find a very large effect of entry for these members. In the last two columns, we run similar estimates for enrollment in 2009, on the condition that the child was enrolled in 2004. These coefficients provide a direct measure of the difference in dropout rates. We estimate a positive and significant coefficient for children of member households, implying a dropout rate of around 10 percentage points lower than other households.

We note estimates of the probability of being over-age at the relevant grade: the proportion of over-age children decreases for member households, particularly in round four, which may reflect a higher investment and parental supervision of the children attending school.

One of the main roles of SHGs is to bring access to credit to its members. In the various loan options available in a typical village of our sample, SHG borrowing appears clearly as a cheap option, especially as compared to moneylenders, which is the only other 'readily-available' alternative. SHG loans are also relatively small and of short duration. Yet, they can be accessed much more frequently.

From the number of loans, it is easy to verify that member households reduce their reliance

on moneylenders dramatically, by substituting it with borrowing from SHGs.

This observation implies that (i) borrowing from SHGs is cheaper (and/or more convenient) and (ii) SHGs meet most of the demand for credit by its members. This finding is analogical to those that find that households dramatically decreased their borrowing from moneylenders once they got an easier access to bank loans. We clearly see that member households take more loans and that this difference is increasing over time. Second, the total amount borrowed tends to increase as well, especially because almost all SHG members do borrow.

Hence, on the basis of these findings, it can be surmised that SHG membership reduces credit constraints. Moreover, SHG membership has an additional income effect, that is, of lowering borrowing costs. We, therefore, expect credit to play a positive role for SHG members (not for other households), especially at the secondary level, which involves much larger costs.

Some estimates of the impact of access to credit on enrollment show that access to educational loans for members results in larger enrollment rates as compared to non-members, particularly for secondary school children. Nevertheless, credit is probably not the only channel through which member households reach higher enrollment rates since, even when we control for the access to educational credit, enrollment rates between members and non members remain significantly different.

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picture looks very different for girls. For the latter, we observe that, among non-member households, the number of siblings at school reduces the probability of enrollment of the girl whereas this effect does not exist for member households. We interpret this finding as an effect of competition over scarce family

resources. More interestingly, the presence of young children (0 to 5 years old) reduces female enrollment in non-member households, most likely because older girls are required to look after their younger siblings. This effect does not materialize for member households, perhaps because they put a stronger emphasis on children's education or because they are better able to.

Finally, we explore the possibility that the impact of SHG membership may differ across households, depending on the participation of the woman in household decisions, particularly in matters of education. We do find that the effect of membership on enrollment is particularly strong in households in which the wife participates in the decisions about children's education. This effect is especially marked for girls. This result is also consistent with the fact that a higher number of female adults in the household increase the relative enrollment of girls. Finally, the impact of SHGs on enrollment is also much stronger for children, who are not working outside the household.

CONCLUSION

In this research, we investigated the effects of access to microfinance on education decisions in India. More specifically, we compared the evolution over time of school enrollment between participants and non-participants in SHGs, the dominant form of microfinance

in India, by using an original panel data set collected in Jharkhand (North India) between 2002 and 2009.

We find substantial evidence that the SHG membership of a woman increases the chances of her child being enrolled in school. The effect is particularly important during the last round of the survey, which suggests that these effects may take a long time to materialize (in this case, seven years after the start of the SHG programme in the area). This may explain why the most recent Randomized Controlled Trial (RCT) evaluations have found micro-credit

to have a very limited impact. Moreover, we find that participation in an SHG is particularly important for the education of girls, thus closing the important gender gap observed as baseline for primary and secondary levels. Interestingly, the effect is especially strong when the mother participates in household decisions and where there are more female adults present in the household. Finally, we find that SHGs support the overcoming of traditional barriers, such as the presence of younger siblings in the household, to the education of teenage girls.

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