The Impact of Microloans on Women's Decision-Making Power in India

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Fall 2010 - Spring 2011

Abstract. — It is argued that microfinance can help empower women by promoting gender equality and equity, improving household well-being, and allowing women to gain household decision-making power; however, as literature indicates, microfinance can also hinder empowerment as women may not have complete control over their decisions and access to other resources. In this paper, I examine whether or not acquiring a microloan leads to greater household decision-making power with respect to educational expenditures for women using household data from Hyderabad. Additionally, I use qualitative data collected from interviews and site visits in Ahmedabad to assess how institutions select women in the loan-making process and get the local perspective on the household dynamics. From the model, I find that women with microloans have a .323 higher probability of having decision-making power over educational expenditures; however, from my research in India, I find that institutions are likely to work with women who already exhibit qualities of being empowered.

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Thanks to Professor Mary Hansen and Professor Nanette Levinson for their advising support. A special thanks to Professor Mary Hansen, Professor Caren Grown, Erin Hinchey, and Professor Thierry van Bastelaer for their guidance and feedback through the research process, my grandmother, Minaxi Tijoriwala, for helping me transcribe my interviews, and the wonderful people of SEWA and SAATH for their support and guidance in Ahmedabad.

I. INTRODUCTION

According to UNICEF, 22,000 children die quietly in villages far removed from the conscience of the world each day due to poverty. Nearly a billion people entered the 21st century unable to read a book or sign their names. 10.6 million people died in 2003 before they reached the age of five (or roughly 29,000 children per day).

Poverty is the state for the majority of the world's people and nations. Approximately 1.7 billion people around the world live in absolute poverty. Absolute poverty, or destitution, is the lack of basic human needs such as clean water, nutrition, health care, education, and much more because of the inability to afford them. Of course, there are several causes to poverty such as scarcity of basic needs, barriers to opportunities, illiteracy, high competition, lack of industrialization, and high costs of education; but regardless of these causes, poverty is a vicious cycle and once trapped, it is virtually impossible to escape.

Microcredit lending is one of the most visible innovations in poverty alleviation in the last half-century, and in the past three decades it has grown dramatically in reach. With more than 150 million borrowers from the darkest corners of the world, microcredit lending has been highly successful in bringing formal financial services to the poor. While microcredit brought credit and lending services to the poor, *microfinance* has brought a whole range of services to the poor from insurance and savings to financial literacy and skills building. It is argued that microfinance has done much more than simply place money in the hands of poor families, most often women. Microfinance has the potential to transform the lives of the poor by helping households meet basic needs and protecting them against risks. Given this, it is important to remember that microfinance is by no means a form of charity; rather, it is a way to give the poor the dignity they deserve by giving them access to a vital service.

In India, the growth rate of microfinance has been large and unprecedented. A unique aspect of the expansion has been the commercialization of microfinance where MFIs are for-profit. Two of the largest for-profit MFIs in India are Spandana and SKS, both based in Hyderabad, Andhra Pradesh. As of late October 2010, India's microfinance crisis, centered in Hyderabad, has brought another debate into the picture of whether or not microfinance should be commercialized and how this impacts the borrowers. As Damian von Stauffenberg, the founder of MicroRate, said, the attitude in banking is that "the poor can always repay, so let us just keep giving them more." This mentality has led to the over indebtedness of borrowers in India and has compromised the reputation of microfinance.

In India, microfinance has focused primarily on women for several reasons. First, there is the feminization of poverty or the idea that the poorest of the poor are women. By providing access to financing for income-generating activities, microfinance institutions can significantly reduce women's vulnerability to poverty. Also, there is the idea that when women are given control over money, financial uplifts are widely distributed within the household and community. The notion that women are more motivated to save exists; thus, by lending to women, money will be used responsibly. As Bono once said, "Give a man a fish, he'll eat for a day. Give a woman microcredit, she, her husband, her children and her extended family will eat for a lifetime." Furthermore, from the standpoint of a field loan officer in India, women are seen as better customers for reasons such as peer pressure, better repayment rates, and other reasons that will be discussed in the next section.

More importantly, by supporting women's economic participation, microfinance can help empower women by promoting gender equality and equity, improving household well-being, and allowing women to gain household decision-making power; however, microfinance can also hinder empowerment as women may not have complete control over their decisions. On the one hand, higher household income in the hands of women might increase health and education for women and their household members—this is called the women-empowerment effect. On the other hand, the exclusion of men from access to subsidized finance might create frictions, and rebound effects that diminish the supportive role women play for their spouses and wider household members in the production of health and education—this is called the women-disempowering effect. In the event that the latter effect dominates over the former, then microfinance for women might have no overall positive impact, or even worse, a negative impact on health and education at the household level and the women in low-income households. Thus, in this paper, I will examine whether or not acquiring a microloan leads to greater decision-making power in the household for women. I will also examine the Indian context of microfinance and understand how institutions select the women they lend to.

II. LITERATURE REVIEW

Winning the 2006 Nobel Prize for Peace, Muhammad Yunus brought the concept of microcredit to the international limelight. The microcredit approach or the “trickle up approach” is intended to help the poor, who generally possess no collateral, establish creditworthiness and financial self-sufficiency with a small loan to generate income and improve their standard of living. Yunus’ Grameen Bank is now one of the largest microcredit programs in the world and is considered as a model in the field of poverty alleviation. The field of microfinance has grown over the last three decades owing to both its economic and non-economic impacts on the household level.

A. The Missing Market

Nearly one billion people live on less than one U.S. dollar, 75% of these people live in rural areas, and more than 90% do not have access to financial services. At one point, for these one billion, access to a savings account or a loan was virtually impossible, and saving meant paying a village moneylender to guard the money. To overcome poverty, it is imperative that the poor be able to borrow, save, invest, and protect their family from risk. Thus, financial services play a critical role in reducing poverty, and permanent access to these services can help poor people take control of their lives. The problem is that formal financial institutions are not designed to help those who do not already have financial assets; however, nearly three decades ago, it became apparent that there might be an alternative to fill the void: microcredit lending.

Through Microfinance Institutions (MFIs), such as credit unions and NGOs, the poor can obtain microloans, receive remittances from relatives working abroad, and safeguard their savings. With access to small amounts of credit at reasonable interest rates, poor people can set up small enterprises. MFIs have also tailored banking to meet the specific needs of the poor such as using self-help groups (SHGs), seasonal lending, group borrowing and saving, and much more. They have also taken the cultural needs into context and tailored their efforts to an individual community's needs—for example, a strategy in India may not be as effective in Kenya. Experience shows that poor people are a good risk, with higher repayment rates than conventional borrowers in countries as diverse as Bangladesh, Benin, and Bolivia. The growth of microcredit is certainly attributed to the fact that this type of lending filled a market gap as it tailored its banking services, giving the poor the opportunity to borrow.

B. The Microfinance Revolution: The emergence of MFIs around the world

Jonathan Morduch, in his study *The Microfinance Promise* (1999), revealed that the microfinance movement has transformed poor households by giving them the possibility to improve their lives through their own labor. This concept and innovation spread quickly, and as a result, MFIs have emerged all around the world to serve a similar purpose; albeit, through different processes. Three well-established MFIs from different parts of the world, with very different backgrounds, are ACCION, SEWA Bank, and the Grameen Bank.

ACCION International, an early pioneer, was founded by a student, Joseph Blatchford, to address poverty in Latin America's cities. Blatchford realized that the major obstacle in the struggle of the poor was that most of their profits were being paid to loan-sharks from whom they had borrowed money. Begun as a student-run volunteer effort in the shantytowns of Caracas in 1961, ACCION today is one of the premier microfinance organizations in the world.

The Self-Employed Women's Association (SEWA) was first created by Ela Bhatt in 1972 as a trade union for poor, self-employed women workers in Ahmedabad, India with the main objective of "strengthening its member's bargaining power to improve income, employment and access to social security"; however, they soon realized that there was a lack of credit facilities, especially for poor women. Thus, in 1973, SEWA found "a bank of their own", called SEWA Bank to disburse loans without the need for traditional collateral. Today, SEWA Bank has been providing banking services to self-employed, often illiterate, women and has become a viable financial venture with today around 30,000 active clients.

Finally, the Grameen Bank, in Bangladesh, was created by Muhammad Yunus as a university project to address the banking problem faced by the poor through a program of action-research. In 1976, with his graduate students in Chittagong University, he designed an experimental credit program to serve the local poor. Through a special relationship with rural banks, he disbursed and recovered thousands of loans. After the pilot project ended, bankers were reluctant to continue the project as they feared it was too risky. Eventually, through the support of donors, the Grameen Bank was founded in 1983 and now serves more than four million borrowers, primarily poor rural women.

Given the differences between the various organizations, MFIs have commonalities in that they are largely targeted towards women from the poorest sections of the population; they lend small sums of money to individuals as members of groups and rely on joint liability groups (JLGs) to ensure loan repayment; and loans are repaid in a set number of installments. Due to its increasing popularity and the high female participation rates, microcredit is attracting a great deal of attention and has raised a number of research questions, inspiring a growing number of empirical investigations. One big question is if microfinance has a long term sustainable economic impacts.

C. Economic Impacts

As mentioned, the economic impacts of microfinance are large since the poor have the opportunity to borrow and invest in small businesses; however, are these impacts actually reducing poverty? Graham Wright (1999) examined microfinance programs to see if they increase income or reduce poverty and concludes that given the right economic conditions (reasonable levels of inflation, access to markets etc.), well-designed microfinance services can reduce poverty. Researchers reveal that relatively poor households can save in quantity when given attractive saving vehicles (Jonathan Morduch, 1999), and that lending to women will yield better economic results and will lead to more sustainable economic development (Naila Kabeer, 2001). As Yasmine Nader (2008) revealed, "women are specifically targeted by [microfinance] programs because studies suggested that giving women credit has a multiplier effect since women invest largely in their households". As microcredit lending continued, researchers were also able to pose questions about the non-economic or social impacts—this time, the debate was more heated.

D. Social Impacts

Studies have shown that lending to women augments the use of contraception (Sidney Ruth Schuler et al., 1997), leads to an increase in schooling of the woman's children (Yasmine F. Nader, 2008), increases spousal communication in general about family planning and parenting concerns (Mark M. Pitt et al., 2006), increases their legal and political awareness and participation in public campaigns and protests (Syed M. Hashemi et al., 1996), among much more. However, studies have also shown that microcredit increases tension and frustration among household members, produces new forms of dominance over women, and increases violence in society (Aminur Rahman, 1999). It turns out that disagreement is rather common in the literature. One of the main reasons for this is the difficulty in testing or methodologically finding social impacts. As Thierry van Bastelaer, Professor of Microfinance at American University, mentioned, there have been no conclusive findings about microfinance and its social impacts.

Another question that is commonly raised in the literature is how a woman's borrowing impacts household consumption. Pitt and Khandker (1998) estimated how participation in a credit program impacts household consumption, depending on the participant's gender. Their path breaking study concluded that household consumption increases more if a woman takes out a loan rather than a man. Furthermore, Nava Ashraf, Karlan and Yin (2010) found that when a woman had access to a loan, there was a shift towards female-oriented durable goods purchased in the household. On the other hand, Morduch (1999) found that participation in a credit program in Bangladesh, everything else equal, tends to imply lower household consumption. Research in different counties and programs has produced quite conflicting results about social impact; thus, it appears that generalizing results from microfinance research is not possible.

E. Why Women?

As mentioned in the introduction, there are several reasons why women are targeted, especially in India. Apart from the feminization of poverty and the evidence on women spending more on their family, Armendariz and Roome (2008) mention that from the standpoint of a field loan officer, women are seen as better customers for loans compared with men for at least four reasons. First, repayment rates on loans by women are higher, because women are more risk averse and therefore more conservative in their investment strategy. Also, women are more susceptible to pressure from their peers and are more sensitive to the threat of public humiliation with regards to failure in the repayments on their loans. Women have fewer opportunities than men to access alternative sources of credit, which in turn reduces the scope for moral hazard. Moreover, field practitioners in microfinance argue that women are less argumentative, which reduces the transaction costs of the loan, both for their peers and the bank. Women also lower the agency costs of bank officers because women’s groups are more punctual at repayment meetings, which avoids the bank officer having to devote time looking for them at their homes/businesses. Last but not least, women loan officers cost less than men, and in many instances women are more efficient at granting and collecting repayments. Taken together, the findings of empirical investigations, the perspectives of donors, and experience of practitioners, have led to an established wisdom in favor of lending to women.

F. Microfinance & Empowerment

Along with being better loan recipients, it is argued that through microfinance, women are empowered. In the existing literature, the term “empowerment” is commonly used; however, the definitions tend to vary. Empowerment is not only quite difficult to define, but it also tends to be difficult to measure. Sidney Schuler et al (1997) developed eight indicators of women's empowerment: freedom of mobility, political and legal awareness, participation in political campaigns and public protests, ability to make small and large independent purchases, economic security, participation in important family decisions, and relative freedom from domination by the family. While their indicators were developed with the largely-Muslim Bangladeshi culture in mind, these indicators of empowerment represent the various domains of a woman's life that are impacted by microfinance.

In this paper, I will be focusing on empowerment in the household. From the indicators mentioned, empowerment in the household entails the ability to make small and large independent purchases, participation in important family decisions, and freedom from domination by the family, especially the male head of the household. For the purposes of this paper, the term empowerment is the process of challenging existing household power relations, and gaining greater control over the various sources of power. Empowerment, in this context, will be discussed as women gaining bargaining power or decision-making power with respect to their spouse in the household. There are a number of items that impact women's decision-making power in the household, such as cultural and societal norms, religion, age, relative wealth, and employment status. Browning and Chiappori (1998) showed that in bargaining contexts, preferences tend to shift with income. Microfinance may thus affect household choices through a variety of channels: by changing bargaining power, by raising overall resources, by affecting the returns to investments in human capital, and by influencing attitudes and norms.

G. The Great Debate: Empowered or Not?

An area of great debate surrounds the question of whether a woman's participation in a credit program raises her "bargaining power" or "empowerment" in the household. Hashemi et al. (1996) for example, measured a woman's empowerment using indicators such as level of mobility, ability to make large purchases, and political and legal awareness. Based on a study in Bangladesh, the authors found that a woman's participation in a credit program raises her empowerment level in the household. Pitt et al. (2006) tested the assertion that participating in microcredit programs is an empowering experience for women whose life choices are otherwise restricted through poverty, patriarchy, and societal norms, and find that credit programs lead to women taking a greater role in household decision-making, having greater access to economic resources, having greater social networks, having greater bargaining power vis-à-vis their husbands, and having greater freedom of mobility. Similarly, Khan Osmani (2007) and Pitt et al. (2003) found that microcredit can have a significantly positive effect on women's bargaining power within the household.

Despite this, it is important to remember that when money is fungible within the household and between different activities, the net impact on women cannot be gauged without taking into account reallocations between men and women. For example, although 95% of Grameen borrowers are female, Goetz and Sen Gupta (1996) found that in just 37% of cases do female borrowers from Grameen Bank retain significant control over loan use. Goetz and Sen Gupta, along with Rahman (1999), offered evidence so show that a woman's participation in a credit program reinforces her dominated role in the household, and in some cases, the loan ends up under the control of her husband. Garikipari (2010) went on to say that lending to women benefits the household, but not the women themselves. She finds that women whose loans are invested in the household assets find the process disempowering due to lack of co-ownership. Furthermore, Holvoet (2005) found that through borrowing, women gained a higher stake in matters directly related to loan use; however, they were not able to translate this into a more substantial involvement in other domains of household decision-making.

From the existing literature, it is apparent that microfinance has benefited women in multiple ways, and that women are more likely to save and spend on family than their male counterparts; however, the literature reveals that there is a conflicting divide on whether a woman's participation in a credit program raises her decision-making power in the household. Also, the literature speaks very generally about decision-making, and reveals very little about decision-making in specific domains, such as education spending, saving, clothing spending, etc. The existing literature reveals that there are gaps in understanding the household level impact the microloans have on women. *With a microloan, do women actually have a higher stake in household decision-making beyond the decisions surrounding how to use/spend the loan?* Furthermore, the existing literature in microfinance and its impact on women's bargaining power is vastly concentrated in Bangladesh (Syed M. Hashemi, Sidney Ruth Schuler and Ann P. Riley, 1996, Signe-Mary McKernan et al., 2005, Jonathan Morduch, 1999, Mark M. Pitt and Shahidur R. Khandker, 1998, Mark M. Pitt et al., 2003, Mark M. Pitt, Shahidur R. Khandker and Jennifer Cartwright, 2006). While India and Bangladesh are neighboring countries, the predominantly Muslim nature of Bangladesh means that the values, customs, and culture will be different when compared to the secular and more diverse India.

In the following sections, I will examine if a microloan allows women to gain decision-making power with respect to educational expenditures in the household using data from

Hyderabad, India. This study will add to the literature by examining microloans and bargaining power in the Indian context, and will use data from the household level.

III. THE INDIAN CONTEXT

Given the cultural, political, and legal context, microfinance operations and activities vary from country to country. In India, microfinance has rapidly grown, surpassing Bangladesh as the country with the most microloans; however, as Damian von Stauffenberg mentioned during a microfinance panel, the size of the average loan in India is much smaller than the global average. SKS Microfinance, the leader for microfinance in India, exploded from 11,000 borrowers in 2003 to 5.8 million in early 2010. The expansion has been based on the importation of the group microcredit model, famously refined by the Grameen Bank, into the similar context of India. But in contrast with Bangladesh, where the microcredit industry grew more gradually and is largely non-profit or cooperatively owned, another basis of the Indian expansion has been commercialization.[1] The big Indian MFIs are for-profit. The smaller, non-profit, and NGO model microfinance organizations are also present; however, their reach and scope is not as great as the commercial institutions.

Microfinance is also certainly not a new phenomenon to India. Chit[2] funds or rotating savings and credit associations (ROSCAs[3]) can be traced back centuries (to Dravidian times) in urban as well as in rural parts of India to serve as an informal financial institution for the poor. They consist of a group of participants who deposit a daily, weekly, or monthly fixed

1 Information about the Indian expansion comes from David Roodman's blog and his talk at American University. On April 15 2011, American University's International Development Program hosted a panel titled, "The Microfinance Crisis in India", and featured David Roodman, Damian von Stauffenberg, Shari Berenbach, and Isabelle Barres.

2 The term 'chit' stems from the Tamil word 'chitty', meaning a written piece of paper, which directly points to one important allotment mechanism, where a lot determines each date's 'winner' of the chit.

3 ROSCAs are the more general name, while a chit fund is unique to India. In Mexico, a ROSCA is known as a tanda.

contribution in a common pot, which is allotted in part or whole to each participant in turn. Once the participant receives the pot, he/she cannot receive the pot until the next round.

Ambec and Treich (2007) have investigated two justifications for the existence and prevalence of ROSCAs: first, they act as a substitute to insurance in areas where markets for insurance either do not exist or do not function effectively; and second, ROSCAs facilitate the purchase of durable goods (Peer Smets, 2000). They propose a third justification that the characteristics of ROSCAs help people cope with their self-control problems and help them save. Chit funds, in India, were predominantly used as a means to save money for large expenditures, such as weddings, the birth of a child, education, funerals, and other life cycle events. Rules were determined by the group and varied from village to village. The legacy and cultural use of chit funds made it possible to transition to a more formal small-scale lending method. Close social ties, peer pressure, and the need for reliable saving all made chit funds successful—these characteristics also allowed microcredit lending to be successful in the region.

The self-help group (SHG) model is the dominant form of microfinance in India, and is also heavily supported by the Government of India. Although the term *self-help group* is used in different countries to describe a variety of financial and nonfinancial associations, in India it refers to a group of 10–20 poor women who band together for financial services—beginning with periodic, compulsory savings and then mainly loans—and sometimes social services as well. SHGs are managed by their members, with varying degrees of external support (Isern, Jennifer, L.B. Prakash, Akshara Anuradha Pillai and Syed Hashemi, 2007). SHGs are formed with the assistance of self-help promotion institutions (SHPIs), which include nongovernmental organizations, government agencies, banks, cooperatives, and microfinance institutions. In addition to helping with group formation, SHPIs provide training, monitoring, and other support services. Occasionally, promoters give SHGs initial seed capital to lend, but more typically, groups begin by saving and lending out their members' own resources. Most, but by no means all, SHGs eventually borrow from an external source, usually a bank. This bank linkage is the most distinctive characteristic of the Indian SHG model (Isern, Prakash, Pillai and Hashemi, 2007).

From my field observations, it seems as though microcredit has thrived in India due to the culture of strong social networks, trust, and thriftiness. In most slums, the poor are willing to pay to save money. Village moneylenders will hold savings for the poor if they pay them a portion of their savings—these services are generally assumed to be free for the middle and upper classes. In the small villages and slum areas, everyone is somehow connected to another. Close kinships, caste ties, religious ties, familial ties, and much more bind people together. This bind is strong and forms a deep trust between members of a community. The saying, "it takes a village to raise a child" is certainly true for rural India. It is easy to see that women have strong ties to other women in their community and village. I also noticed that borrowing money from neighbors, family members, or businesses is done routinely in informal manners without a written contract. Furthermore, I observed that families are thrifty and minimalist in terms of what they own. This also translated into the bargaining nature of the local economy—there rarely was a set price on any good. I also noticed entrepreneurial endeavors on each street corner and all around in the slums.

Even though society works collectively, there is a hierarchy present in almost any situation. The cultural norms seem to dictate the following ideas: the parents come before the children; the husband comes before the wife; the son before the daughter; the wealthy before the poor; the upper caste before the lower caste; and so on. Naturally, there are exceptions, but generally this is the trend. From my experience, it appeared as though the family acted as one unit in the sense that money was pooled together. While one family member (such as the father-in-law or husband) might have more influence on how the money is spent, the family acts as one unit and all the family members who earn, contribute.

Regardless of position in society, historically and traditionally, women were in the household taking care of the domestic responsibilities. It was not seen as a sign of oppression, but rather as a natural division of labor that would maximize the potential of the household. A marriage is considered a union or a voluntary contract between two families that agree to be linked for a lifetime. This is the norm; hence, women and men are both socialized and raised to expect certain realities. Naturally, these norms are changing, but there are still underlying notions of what is and is not expected in society.

Even though women are entering the labor market and earning incomes, they are still socially expected to care for the family in the household domain. As an outsider to the culture, this mentality seems backwards; however, women embrace it. As Arup Mitra (2005) mentions, a large majority of Indian women who perform unpaid work within the household are forced by economic necessity to combine domestic work with remunerative jobs in the informal sector. Within this sector there exist opportunities to work on a part-time basis, to procure contracts for home-based activities and piece rate jobs, and the overall flexibility to combine household activities with income yielding jobs as convenient. The lack of entry barriers, moderate skill requirements in terms of formal education, and the scope to avoid labor laws encourage the growth of activities in the urban informal sector. Women in general suffer from two sets of discrimination in the labor markets: pre-market discrimination involving lack of access to education, training, experience—factors which increase human capital and enhance the marginal product of labor; and post-market discrimination involving differential wages for a similar quantum of human capital. Given the discrimination, women also traditionally take decisions only after collaboration with their spouse and perhaps even children.

Since India is broken on linguistic and ethnic lines, most families have lived in the same area or village for generations; however, with urbanization, migration is also more prevalent. With wide regional diversity in the cultural background of the low income migrant households, especially in the face of difficulties in adapting to an urban cosmopolitan culture of the upper income groups, their urge to enjoy and keep alive their cultural identity in the city induces them to reside in close proximity to each other. In India, as Mitra points out, the multilingual and multiethnic identities of its citizens make this even important, more particularly when women and children also migrate with the principal male earners (Mitra, 2005). Thus, the more heterogeneous culturally and ethnically an area/country is, the more likely it is that migrants would seek to settle in and around the areas of their brethren. This solidifies the notion that networks and peer groups play a large role in the Indian culture.

Understanding the Indian culture is extremely important in the analysis of how microfinance impacts women's decision-making power since cultural norms will shape how women raise their decision-making power in the household and how empowerment is perceived. Cultural norms take generations to change and microfinance alone will not change them.

IV. THE HOUSEHOLD BARGAINING MODEL

The household bargaining model considers the male (decision-maker one) consumption and the female (decision-maker two) consumption as a utility possibility frontier. This model reveals that households are sites of conflict, bargaining, and negotiation, and that preferences in the household are not identical and homothetic. The bargaining model looks at intra-household decision-making and removes the assumption that all family members have a single set of interests, e.g., they maximize a household utility function subject to an aggregate budget constraint.

The underlying principle of the household bargaining model is that men and women have different tastes and preferences; thus, have a different, non-transferable utility function. Given this, the assumption for this model remains that household income is pooled together; thus, as household income rises, the utility possibility frontier shifts out. The utility possibility frontier may also shift in or out with a change in access to employment, access to property and resources, education, social support from social organizations, position in the lifecycle, and political/legal structures.

The household bargaining model assumes that a household consists of two decision-makers. This model is also based on the assumption that the household wastes nothing, or that its allocation is *Pareto efficient*. Essentially, consumption bundles are such that an individual's welfare cannot be increased without decreasing the welfare of one of the other household members. There is also the assumption that there is a bargaining process between the two members inside the household to intra-household decisions.

There also exists a threat point, or point of divorce, that represents the level of well-being that the woman (or man) would attain if they cannot reach a cooperative solution within the marriage. The weaker the threat point, the lower the bargaining power the woman has with respect to the man. The allocation of family resources depends on the relative strength of each spouses' bargaining power—their so-called threat effect. In the standard model, total family resources determined family consumption patterns; however, in the bargaining model, the person who has control over family resources determines the family's consumption pattern.

With respect to microfinance, when a woman acquires a loan, she contributes to the family by raising the wealth of the family. As Diagram 1 shows, this shifts out the utility possibility frontier curve from A to A'. As evident by the slope of the new indifference curve, the wife's bargaining power increases. Along with this, her threat/divorce point will also increase. Before receiving the loan, the woman's threat point was near the level of around 30% of her maximum consumption. Regardless of this percentage, she will still expect her threat point to be at this level, so when the curve shifts out, the women still expects to consume the same percentage, which shifts the threat point out to the right.

Essentially, it seems that with a microcredit loan, the household wealth will increase, which will shift out the entire utility possibility frontier. This will increase the woman's bargaining power and will lead to a higher threat point. In this paper, I will examine the impact of a microloan on household decision-making power over educational expenditure and based on this model, I hypothesize that with all else constant, a microloan will increase a women's decision-making power in the household.

V. METHODOLOGY

A. Econometric Model

As shown in the economic model, with a microloan, the household wealth will increase, which will shift out the entire utility possibility frontier. This will increase the woman's household bargaining power and her threat point. For the purposes of my model, I am looking specifically at decision-making power on educational expenditures in the household. A number of variables impact decision-making power, especially with respect to education spending, such as the woman's age, number of children in the household, the woman's education level, household expenditure, whether or not the woman works, and much more. A woman's age may impact decision-making because it seems logical to think that an older woman has somewhat more of a say than a young married woman; although, the opposite may be true as well. A woman may have been repressed throughout her marriage, and may have less of a voice as she grows older. The number of children in the household will impact education spending as more children mean more decisions about education are being made in the household; naturally, less children means the opposite. A woman's education level may determine how much she values education or if she wants to be involved in making decisions regarding education spending. The amount the household spends may also impact decision-making over education spending as household spending may reflect income, and a higher income may mean the household has more to spend on education.

For the purposes of my analysis, I look specifically at women who identify themselves as married to the head of the household, living with their spouse, and having school-aged children in the household. Since I am looking at decision-making power over educational spending, it makes intuitive sense to look at households that have school-aged children. By school-aged children, I specifically mean children aged from six to sixteen, as this is the official range of children attending primary and secondary school in India. Furthermore, I only want to examine women married to the head of the household since in India, it is customary that the male head of the household, who is also generally the breadwinner, makes the monetary decisions. Given the household bargaining model shown in the previous section, I want to examine the relationship between the female and male decision makers of the household, which means the male household head and his spouse. I also want to be sure that the woman is still living with their spouse so that there is some sort of bargaining taking place in the household (essentially, I do not want the woman to be a widow as widows may be forced to make all the decisions).

The dependent variable in this econometric model is who has decision-making power over educational expenditures over the month previous to when the question was asked. This is measured as a binary variable: a 1 if the woman (or female head of the household) had made the decisions pertaining to education spending in the past month, and a 0 if someone other than the female head of the household made the decisions pertaining to education spending in the past month. In the survey, which will be discussed in the next section, each woman was asked, "We would like to ask you about the expenditure of the household in the last month. Who makes most decisions about what educational expenditures to make (tuition, etc.)?" If the woman responded with herself, then the variable has been coded as a 1 and if she responded someone else in the household, the variable has been coded as a 0.

The main independent variable, also measured as a binary variable, is whether or not the woman has a microloan. This variable is coded as a 1 if the woman has a microloan[4] and 0 if the woman does not have a microloan[5]. The control variables includes the number of children in the household, the woman's education level, monthly total household expenditures, whether the woman has a job or not, and her age. Education and job are also both binary variables. Education is divided as currently in or finished up to primary education, currently in or finished up to secondary education, and currently in or finished up to upper secondary education or higher[6]. The variable is coded as 1 if the woman is currently in or has finished up to that particular level and is 0 if she falls into another level. Job status is 1 if the woman is working or generating some form of income and 0 if she is not. I have also included if the woman has a non-microloan loan as a binary variable: if the woman has another type of loan, besides a microloan, the variable is coded as a 1, and if the woman does not have a loan or if she has a microloan, then the variable is coded as a 0.

The model used is specified as the following:

$$Y_i = \beta_0 + \beta_{ML}ML_i + \beta_L LOAN_i + \beta_{Age}AGE_i + \beta_{Kids}KIDS_i + \beta_{MHE}MHE_i + \beta_{Job}JOB_i + \beta_{PE}PE_i + \beta_{SE}SE_i + \beta_{HSE}HSE_i + u_i \qquad for\ all\ i = 1, 2, 3, \ldots, n$$

Y_i = decision-maker over educational expenditures in the past month
ML_i = 1 if woman has a microloan; 0 if woman does not have a microloan
$LOAN_i$ = 1 if woman has a non-microloan loan; 0 if woman does not have a non-microloan loan
AGE_i = woman's age
$KIDS_i$ = total number of children in the household
MHE_i = total monthly household expenditure (in rupees)
JOB_i = 1 if woman is earning an income; 0 if woman is earning an income
PE_i = 1 if primary is the highest completed; 0 if primary is not the highest completed

[4] In the data description section, I discuss what categories I use to determine what a microloan is. If the woman responds to borrowing from an MFI, a SHG, Spandana, Mahila Mandal, a chit fund, or Asmita, I code them as a 1.
[5] Even if she does not have a microloan specifically, she might have a commercial loan or a loan from a family member or neighbor.
[6] Upper secondary education and/or higher refers to 10th standard and beyond (like college and post graduate).

SE_i = 1 if secondary is the highest completed; 0 if secondary is not the highest completed
HSE_i = 1 if higher secondary education is the highest completed; 0 if it is not

B. Description of Quantitative Data

The data used in this analysis comes from a study called *Measuring the Impact of Microfinance in Hyderabad, India* from the Jameel Poverty Action Lab Dataverse (Abhijit Banerjee et al., 2008). This database provides information from a randomized controlled trial with 2,800 households living in slums in Hyderabad, Andhra Pradesh—India's fifth largest city—in 2005. The researchers surveyed all members of the household and asked a series of questions to collect information on household consumption, borrowing, saving, and any business currently operated by the household or stopped within the last year. They also collected information pertaining to decision-making over different household expenditures, work status, education background, income, loan status, and much more. For the purposes of this study, only the baseline survey from 2005 is examined.[7]

The 120 slums were selected by Spandana, a large microfinance lender, as areas in which they were interested in opening new branches. These slums were selected based on having residents who were desirable potential borrowers and did not have many microfinance options. Thus, this research was undertaken to see if the area would be receptive to a new microfinance institution and to see if there was a sizeable population of eligible loan recipients. Given this, the number of women with microloans was extremely small compared to the number of women with non-microloans, such as loan from a neighbor or family member.

[7] In their paper, which was released earlier in 2010, it was revealed that fifteen to eighteen months after formal microlending began, the researchers went back to do a final survey. I only use the baseline survey from 2005 in my research.

In each slum, households were randomly selected, conditional on having a woman between the ages of 18-55 in the household. In the first 100 slums, twenty households were surveyed, and in the final twenty slums, forty households were surveyed, giving a total sample of 2,800 households. Information was collected on all members of the household, defined as anyone who had resided in the household for at least thirty days in the past year and contributed to or drawn from the household resources.

The questionnaire used to gather the information is divided into three broad sections, and took roughly one to two hours to administer. Section A contained information about individual data such as biographical information; Section B contained household characteristics, income and expenditures, and borrowing and saving data; and Section X contained information on household businesses.

Given that the ideal data to look at bargaining power among women with a microloan and without a microloan was not available, this dataset was extremely useful in examining the basic relationship. Since the slums surveyed generally did not have microfinance options, the dataset contained very few women with a traditional microloan. Given this, I had to stretch out the microloan category to include women involved in SHGs[8], chit funds, Mahila Mandal[9], and Asmita[10]. Furthermore, since I could not find data that specifically broke down household level spending between a male household head and a female household head, I used the decision-making questions to determine how bargaining power between women with a microloan and women without a microloan differed. Finally, since the dataset was collected solely from slums

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[8] A Self-Help Group (*SHG*) is a village-based financial intermediary usually composed of between 10-20 people.
[9] A Mahila Mandal is a local women's association that give out small loans.
[10] Asmita is a NGO that provides an environment to create a self help group.

in Hyderabad, the data represents the demographics and culture of this region. While the results will provide key insights into this city and perhaps the state of Andhra Pradesh, I may not be able to extrapolate the results to the greater Indian subcontinent.

C. Description of Qualitative Data

In order to have a more accurate and complete picture of the situation in India, I use mix-methods approach by employing both quantitative and qualitative research. The qualitative data used in this analysis comes from interviews and field visits with SEWA Bank and SAATH in Ahmedabad, Gujarat, India, and from observations from my visit to Gujarat. The Self Employed Women's Association (SEWA), discussed in an earlier in Section II, has its own bank that has microfinance options for poor women workers. SAATH, which means "together", is a non-governmental organization that provides integrated services to slum dwellers in Ahmedabad and other cities in India. Both SEWA and SAATH provide much more than just microcredit services and are deeply engaged with the local population.

I conducted a total of ten interviews in Ahmedabad with the head of the microfinance divisions in both organizations as well as informal interviews with staff and field workers. The interviews were planned out before I arrived to India and finalized once I arrived. Almost all the interviews were conducted in Gujarati with the exception of the SAATH interview with the Director of Microfinance, Mr. Divyang Bhatnager. I asked questions about how the organizations selected women to give loans to, how the loans impacted the household, the household relationships/dynamics, the process of making a loan, and other similar questions. Due to linguistic barriers, it was difficult to get direct answers to many of my questions; however, I was able to move my research in a different direction and look at selection of women into programs. I used a digital tape recorder to record each interview and later transcribed each interview into English.

In order to get a better feel for how microfinance touches the lives of the poor, I went on site visits to training centers, bank branches, and slum schools where children of many of the poor women go to school. I recorded observations and conversations with locals to get a better sense of the culture and how household relationships are construed. I had originally planned to speak with women who received loans; however, this presented to be a challenge as it was difficult to communicate in the colloquial dialect. Instead, I went on a group site visit to observe and discuss the impact of these programs on the women's lives in a group setting.

The data collected through observations and interviews was only from Ahmedabad; therefore, it is not possible to compare with the data set from Hyderabad; however, it does provide insight into how microfinance institutions in India select clients and the nature of household dynamics with microfinance in India.

VI. RESULTS & ANALYSIS

The results from the econometric model and the interviews proved to complement each other; however, the anecdotes from Ahmedabad seemed to paint a slightly different picture and revealed much more about the household than the datasets. In order to understand the bigger picture, I will analyze the data from Hyderabad and then proceed to the analysis of the interviews in Ahmedabad.

A. Data Analysis

To analyze the econometric model, since the dependent variable is a binary variable, I used a logistic regression. The logistic regression uses 562 observations; however, I began with far more observations in my dataset. This means that several of the variables had missing information and only 562 observations had a value for each variable. The likelihood ratio chi-square of 13.10 with a p-value of 0.158 reveals that the model as a whole fits relatively well than an empty model (i.e., a model with no predictors).

By using the mfx command, I was able to obtain the marginal effects of the elasticities after estimation. Table two reveals the marginal effects, standard errors, and z-scores of the model. The results reveal that women with a microloan have a higher chance of having decision-making power over educational expenditures compared to women who do not have a microloan. All else constant, women with microloans have a .323 higher probability of having decision-making power over educational expenditures; whereas, women with a non-microloan loan have a .0528 higher probability of having decision-making power over educational expenditures in the household.

The standard error for microloan is relatively large (.150) perhaps because the sample size for women with microloans was small. Regardless, microloan is still statistically significant with a z-score of 2.15. The other variable that is statistically significant is total number of school-aged children in the household with a z-score of 1.80. The variables that appear to be relatively insignificant are age, work status, primary education, and secondary education.

Placing the results into context, it is critical to remember that over one third of Hyderabad's population resides in slums and other poor settlements, where there is extremely low access to formal financial services. At the time of the baseline survey, there were virtually no MFIs lending in the sample area, yet 69% of the households had at least one outstanding loan. Loans were taken from moneylenders (49%), family members (13%), or friends and neighbors (28%). Commercial bank loans were also very rare. Approximately two years after the baseline survey, the researchers from the Poverty Action Lab resurveyed the area after microloans had become more widely available. 27% of eligible households took up loans from Spandana or another MFI by the time of the final survey.

In the study using this Hyderabad data, Abhijit Banerjee et al. (2010) had examined household decision-making with respect to spending on food, education, clothing, consumer durable items, health, gold and silver, home repair, and investing money. They had indexed the results of these responses together to look at decision-making and empowerment and they used the baseline and final surveys as a means of comparison. In their final paper, using the baseline and final surveys, Banerjee et al. (2010) concluded that no evidence was found to suggest that microcredit empowers women or improves health or educational outcomes, and no impact was found on women's decision-making. One of the downfalls of their research is that Spandana does not examine what the loans are used for; rather, they state that since money is fungible, it is not relevant to consider this.

While Banerjee et al. compared the baseline surveys to the final surveys (the change in responses), I looked solely at the baseline surveys and separated the women who had found access to microloans from women who either had a non-microloan or no loan; thus, my sample size of women with microloans was extremely small compared with the women who did not have microloans. While Banerjee et al. found that microloans had no impact on women's decision-making in general, I found a statistically significant impact on women's decision-making with respect to educational expenditures. These results appear to make sense because the baseline research must have indicated a positive trend, which is why Spandana and other MFIs must have entered the area to provide their services. However, using the final survey, there must not have been as much of a difference and other factors caused there to be no impact. One such cause may have been that the women who had microloans from the baseline survey may have already been the decision-makers; hence, they were able to go out and find a MFI to borrow money.

From the interviews in Ahmedabad, I found that it is common for institutions to target women who already exhibited qualities of being "empowered". While they did not directly state this, it seemed that there was a selection bias since both SEWA and SAATH made loans to women who were already a part of their organization, who came to them, and who passed background checks. While these women are poor and uneducated, they appeared to have wise acumen, family and community support, and a strong need for credit.

Ignoring the possibility of a selection bias, my results appear to be consistent with the economic model presented in section IV. The household bargaining model revealed that with a microloan, the woman's bargaining power would increase as total household income is pooled. In this model, I have assumed that household income is pooled (i.e. that women and men jointly combine their earnings to spend); however, in reality, there may be examples where women hide their money or spend their earnings and loans secretly without their spouses' knowledge. The household bargaining model also specifically looks at bargaining power between two household heads, or the female and the male heads of the household; whereas, in my research I am looking at decision-making between the woman and someone else in the household. When decision-making was coded, it was coded as a 1 if the woman made the decision of education spending and 0 if it were someone else in the household (not just the household male head). It could have been the child or the grandfather; however, most of the time is was the male.

In order to look at decision-making between simply the household male head and household female head, I ran another regression eliminating all other members of the household. The new binary dependent variable is 1 if the woman made most of the educational spending decisions over the past month and 0 if the male household head made most of these decisions. Table 3 reveals the marginal effects after the new logit regression was used. The new results are very similar to the results seen in the previous table; however, now, women with microloans have a .308 higher probability of having decision-making power over educational expenditures. Using the new regression, and comparing just the male and female heads of the household, I can see that the household bargaining model holds true. The original model is slightly stronger as there are more observations used.

My results (from Table two and Table three) reveal that that both microloans and total number of school aged children are statistically significant. This makes sense as I am specifically examining household decision-power with respect to educational spending. The number of school children should impact the number of decisions made in the household regarding education spending as more children means more spending on tuition, books, etc. My results also reveal that women with non-microloan loans have a lower probability of having decision-making power over educational expenditures in the household compared to women with a microloan. As mentioned earlier, given that this area in Hyderabad did not have many MFI options, the women that sought out microloans might have had greater decision-making power to begin with.

B. Field Analysis

The largest city in Gujarat, Ahmedabad has quite different demographics when compared to Hyderabad. While both cities have a large Muslim population, people in Ahmedabad are ethnically Gujarati, while those from Hyderabad are overwhelmingly Telugu. Even though it is difficult to compare the two, both cities have a growing microfinance presence, growing population, and booming economies. From my field research in Ahmedabad, I was better able to understand the process of loan making and the household dynamics associated with the woman receiving a loan. Throughout this analysis, it is important to remember that the MFI in Hyderabad was a for-profit commercial institution, whereas, the institutions (SAATH and SEWA) in Ahmedabad are NGOs; thus, their processes may differ.

I found that more than taking a loan, a large part of microfinance is to promote and encourage savings. Workers from both SAATH and SEWA revealed that most of the women (and men) need reliable saving services and credit is only available once a certain amount is saved in their accounts. In SAATH, anyone could take a loan; however, the borrower has to be from the lower income group and has to have saved 100 rupees for seven months. To take a loan, the borrowers have to form a joint liability group of four people. Each borrower must be saving with SAATH and also be in need of a loan. Then, each borrower applies and gets a loan individually, but the identity is of the group. Family members and neighbors are a part of the process as they have to attest to the borrower's reliability and confirm their motives. After the field officer has received the paperwork, visited the home, and spoken with everyone to confirm the initiative, he or she will bring the application to the branch manager. The manager will do a more in depth check and cross verify the application. He or she will meet with the spouse, parents, in-laws, and then decide how much to lend to the group. Divyang Bhatnager, from SAATH, mentioned that 80% of clients are women "partially because it is targeted and partially because it is just how it happens to be". He mentioned that women are mostly targeted since most of the field officers and staff are female (90% are women). Naturally, women are comfortable working with other women so there is a natural tendency for more female involvement.

SEWA and SAATH will never lend to a woman in secret; however, they will allow women to have a savings account in secret. Both NGOs mention that the family is involved in the process when appropriate and the environment is completely assessed. With SAATH, once the loan is approved, the husband (or spouse) signs as a guarantor and both are encouraged to work together.

Bhatnager mentioned that “many times, it happens that some husbands do not want the women to earn for the family, but that comes to us in the appraisal”. In a case like that, SAATH might actually refuse to give a loan because they do not want to cause tension or a conflict in the household. Many women take out a loan for their own business that they have been working with for years, such as making washing powders or savories, and their spouses have no objection as the additional income simply adds to the household income. The SAATH workers also mentioned that “slowly and steadily mentality does change” in the household and women are becoming more comfortable making decisions and speaking out, even if it counters their spouses.

In SEWA, the emphasis was placed on agriculture and loans for agricultural reasons. Savings is a large part of their program; however, it is difficult for agriculture workers to save since their earnings are extremely low and seasonal (depending on the weather). Most of the agricultural workers rent land and labor to harvest their crops; hence, they do not earn an income each month—only when the crops grow. Similar to SAATH, SEWA has the women open a bank account and save money. The interest accumulated from the savings is placed into a joint union account with all the other women in their trade (such as agriculture) and that becomes the pool of money for all the women to borrow from. Each trade has an elected leader who sends the loan application to SEWA. A committee looks at the application and if approved, the Bank gives money to the trade union (within SEWA), and SEWA gives the money to the women on their own risk.

Unlike SAATH, there is not always input from the family. It depends on the reason for the loan. For example, if the woman gets a loan for a sewing machine, then SEWA does not look for family input; however, if the loan is for farm labor, then SEWA considers family input because the family works together on the farms. For land laborers, the land is on the husband's name and it is always used as the guarantee for the loan; thus, the husband is also held accountable. Since SEWA is a union for women, the loan has to be on her name. However, as several loan officers mentioned, that does not mean the husband cannot benefit. The husbands are generally very receptive to the loans because it helps them just as much as their wives. These poor farmers cannot acquire capital easily as they do not have documentation and often cannot read, so any help is taken.

Loan officers also mentioned that in the rural areas, there had not been many cases of conflict in the household due to a loan issuance; however, sometimes, there would be a conflict because the land was on the father-in-law's name. The officers described a situation where the father-in-law would refuse to give a guarantee and did not want to give the documents for the loan because they were afraid to lose their land. When this happens, SEWA has the father-in-law sign a non-objection document so that the woman can proceed with the loan. Savitaben Patel of SEWA mentioned that there are small conflicts, "but in the end, somehow, they agree to take the loan because they do not have many options."

Officers from both SEWA and SAATH agreed that women in their organization are more empowered then before they joined. They shared many stories that indicated empowerment such as children going to school, women learning to read, saving money, and engaging in income earning activities. The women in these organizations are more aware about resources that are available to them and have opportunities for education and training. These services are provided to the women and are separate from the credit aspect. The credit aspect seems to be secondary to the savings and training. While the women who enter the organization might neither be empowered nor have bargaining power, they probably acquire some bargaining power through the other integrated services of the organization and not solely through taking a loan. Hence, once the women get to the stage of taking a loan, they might already exhibit a quality of being empowered, which leads to the selection bias.

In the context of Spandana in Hyderabad, for-profit MFIs are less likely to offer the integrated services and more likely to make small loans with little information about the client. This has certainly been the case in Hyderabad as it was hit hard with the microfinance crisis in late 2010. The crisis was caused by over indebtedness, aggressive lending, and poor credit history knowledge. The NGO approach is generally more integrated and problems such as the ones with Spandana and SKS Microfinance are less likely to occur.

The integrated services of SAATH and SEWA shift lending from microcredit to microfinance. The idea of microfinance is much more holistic and personalized for the individual; thus, it is much more costly and translates into higher interest rates. From the research and previous literature, it is evident that microfinance is much more beneficial for women's empowerment.

Along with more integrated services, a key concern is bringing men into the process. Organizations like SEWA only work with women, but the question of should men be integrated into the process of women's empowerment arises. From my observations, it seems as though men are involved in process indirectly; however, they should be more directly integrated in the process. Women cannot gain bargaining power in the household and become empowered by excluding men from these services.

Similar to Hashemi et al.(1996), Khan Osmani (2007), and Pitt et al. (2003), my results reveal that microcredit can have a significantly positive effect on women's bargaining power within the household, although specifically with respect to educational spending; however, my analysis from Ahmedabad reveals that this is the case only when microcredit is integrated with other services. Furthermore, the women who take a loan appear to have similar characteristics and are already relatively "empowered" either due to the integrated nature of the services or due to a selection bias.

VII. CONCLUSION

Measuring decision-making power or bargaining power in the household is a challenging task as there are several significant factors that influence this relationship such as culture, religion, children, income levels, class, health issues, age difference, and much more. It is also difficult to examine intra-household decision-making and bargaining power without knowing exactly how money is distributed between partners, and who truly is making each purchase over a given period of time. Tracking this type of data is difficult and virtually impossible to find; thus, researchers rely on household surveys from randomized controlled trials and qualitative responses from household members. Even randomized trials are difficult to work with because the notion of "success" varies from culture to culture and measuring impact quantitatively becomes a difficult task. While quantitative data is extremely valuable and often extremely costly, qualitative analysis can better help capture the true picture of what is occurring on the household level.

From my data analysis, it seems that microloans and other loans, such as a loan from a neighbor or a family member, work differently in that they impact the household differently. This is also the case in Ahmedabad as the microloans are integrated with other social services, whereas the other loans are not. One thing that is not clear from the data analysis is if the women who acquired a microloan were already empowered, or already make more decisions in the household, when compared to the women who do not have microloans. This certainly could be the case as selection bias is often present in microfinance. Once again, qualitative analysis from Hyderabad would be beneficial to gain more insight into these issues.

While the data from the randomized control trial in Hyderabad did not indicate the loan usage, in the future, it would be helpful to see what the loan was being used for, which could also serve as a proxy for empowerment or decision-making power. It would also be beneficial to find a larger sample of women with microloans and be productive to analyze a group of women over a period of time to compare the same women before and after receiving a microloan to see how it impacted her ability to make decisions in the household. Linguistic barriers aside, having a focus group with the women would be extremely valuable to gain additional insights from their unique perspective.

An aspect that became clearer through this research is the role of the family in the loan-making process. It appears as though the family generally plays a large role, especially with the non-profit MFIs; thus, tensions are not as prevalent in the household. This is also because the livelihood of the poor is dependent on access to reliable and affordable credit, so husbands are generally supportive if their wives are able to take a loan. What remains unclear is how to integrate men into the process of women's empowerment in the Indian context. Should organizations that focus only on women branch out and bring men into the picture? How can they go about this?

On the whole, there are several areas in microfinance and empowerment that need more research. Do institutions prefer women who are "empowered" and are they more likely to give a loan to a woman who appears empowered? What factors determine whether or not a woman takes a loan in the first place? These are just some of the many questions that could be explored in order to get a more holistic picture of the issues surrounding microloans and empowerment. Researchers and experts call for more randomized controlled trials; however, there are limitations to this method as well as ethical issues so a challenge for the future is finding the right method of data collection and analysis.

From the analysis, it becomes evident that weight should be shifted from microlending and making loans to *microfinance* and the use of integrated approaches. It seems clear is that solely using microloans will not benefit women's empowerment and decision-making power in the household; however, it might benefit them economically in the short run.

Microfinance, while not a silver bullet, has shown to empower women and help the poor gain control of their lives. Women's empowerment does not just simply affect the current generation of women; it affects future generations and shapes the path for women and girls in the future. Naturally, women's empowerment aids economic development. As Bono was quoted saying, "give a man a fish, he'll eat for a day; give a woman microcredit, she, her husband, her children and her extended family will eat for a lifetime".

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IX. TABLES

Table 1: Descriptive Statistics

variable	Obs.	Mean	Std. dev.	min	max
Y	2369	0.227	0.419	0	1
ML	2414	0.0236	0.152	0	1
LOAN	2414	0.642	0.480	0	1
AGE	2558	33.9	9.38	16	75
KIDS	2558	1.087	1.17	0	10
MHE	2533	0.361	0.480	0	1
JOB	2324	4887	5331	800	174466.3
PE	1159	0.352	0.478	0	1
SE	1161	0.300	0.458	0	1
HSE	1161	0.313	0.464	0	1

Y_i = decision-maker over educational expenditures in the past month
ML_i = 1 if woman has a microloan; 0 if woman does not have a microloan
$LOAN_i$ = 1 if woman has a non-microloan loan; 0 if woman does not have one
AGE_i = woman's age
$KIDS_i$ = total number of children in the household
MHE_i = monthly total household expenditure (in rupees)
JOB_i = 1 if woman is earning an income; 0 if woman is earning an income
PE_i = 1 if primary is the highest completed; 0 if primary is not the highest completed
SE_i = 1 if secondary is the highest completed; 0 if it is not highest completed
HSE_i = 1 if higher secondary education is the highest completed; 0 if it is not

Table 2: Marginal Effects after Logit Regression

variable	dy/dx	Std. Err.	z	P > |z|
ML*	.323	.150	2.15	.032
LOAN*	.0528	.0363	1.45	.146
AGE	-.00006	.00273	-.02	.983
KIDS	.0368	.0204	1.80	.071
MHE	-.000008	.00001	1.34	.182
JOB*	.0319	.0379	.84	.400
PE*	-.00074	.102	-.01	.994
SE*	-.00936	.102	-.09	.927
HSE*	.0265	.107	.25	.805

(*) dy/dx if for discrete change of dummy variable from 0 to 1

Y_i = decision-maker over educational expenditures in the past month
ML_i = 1 if woman has a microloan; 0 if woman does not have a microloan
$LOAN_i$ = 1 if woman has a non-microloan loan; 0 if woman does not have one
AGE_i = woman's age
$KIDS_i$ = total number of children in the household
MHE_i = monthly total household expenditure (in rupees)
JOB_i = 1 if woman is earning an income; 0 if woman is earning an income
PE_i = 1 if primary is the highest completed; 0 if primary is not the highest completed
SE_i = 1 if secondary is the highest completed; 0 if it is not highest completed
$HSEi$ = 1 if higher secondary education is the highest completed; 0 if it is not

Table 3: Marginal Effects after Logit Regression using new dependent variable*

variable	dy/dx	Std. Err.	z	P > |z|
ML**	.308	.151	2.05	.041
LOAN**	.0554	.0386	1.44	.151
AGE	-.000081	.00297	-.03	.978
KIDS	.0359	.0219	1.64	.100
MHE	.00001	.00001	1.58	.113
JOB**	.0303	.0399	.76	.447
PE**	-.000995	.	.	.
SE**	-.0120	.108	-.11	.912
HSE**	.0231	.113	.20	.839

(*) Logit regression with only the household spouses as "0" in decision-making over educational expenditures

(**) dy/dx if for discrete change of dummy variable from 0 to 1

Y_i = decision-maker over educational expenditures in the past month
ML_i = 1 if woman has a microloan; 0 if woman does not have a microloan
$LOAN_i$ = 1 if woman has a non-microloan loan; 0 if woman does not have one
AGE_i = woman's age
$KIDS_i$ = total number of children in the household
MHE_i = monthly total household expenditure (in rupees)
JOB_i = 1 if woman is earning an income; 0 if woman is earning an income
PE_i = 1 if primary is the highest completed; 0 if primary is not the highest completed
SE_i = 1 if secondary is the highest completed; 0 if it is not highest completed
HSE_i = 1 if higher secondary education is the highest completed; 0 if it is not

X. FIGURES

Figure 1: Household Bargaining Model

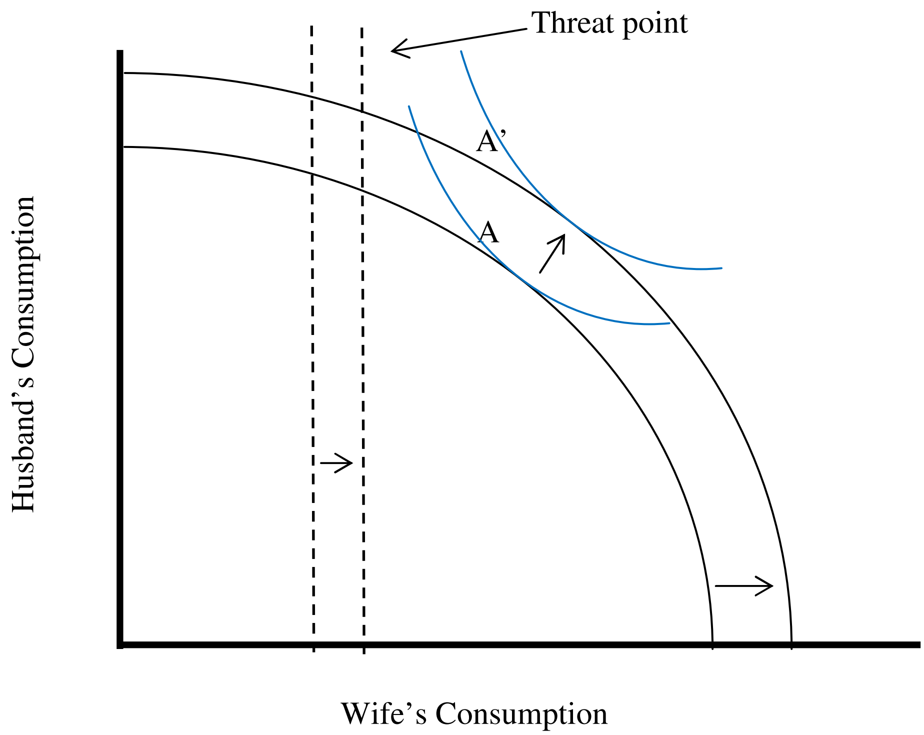

Figure 2: Histogram of Decision-Making Power over Educational Expenditures