Does Long-term Access to Microcredit Lead to Women Empowerment? Experimental and Quasi-experimental Evidence from India

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Abstract

In this paper, we examine the impact of long-term access to microcredit on women's intra-household bargaining power and consequently women's empowerment and poverty alleviation. Our hypothesis is that whether long-term access to microcredit leads to women's empowerment crucially depends on whether there is an improvement in their intra-household bargaining power or not. We adopt a quasi-experimental methodology involving a statistical matching technique to identify the impact of long-term access to microcredit on women empowerment. In partnership with an India-based financial service provider, we match comparable long-term and new female microfinance clients using coarsened exact matching. We also conduct behavioural experiments with the female clients and their spouses to assess the relative intra-household bargaining power of women as a potential mechanism for women empowerment. We find that long-term access to microcredit does not improve women's intra-household bargaining power and consequently does not have any significant impact on women's empowerment. We find no significant improvement among long-term microfinance female clients on parameters such as the likelihood of being self-employed, engaging in paid work, and influence over borrowing decisions. Finally, we do not find any significant positive downstream effects of long-term access to microcredit, measured using a multi-dimensional poverty index. We attribute these results to our potential mechanism of women's intra-household bargaining power as household development outcomes improve significantly when women are in control of household resource allocation.

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Keywords: Microcredit, women empowerment, intra-household bargaining power, multidimensional poverty index, mechanism, coarsened exact matching

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1. Introduction

The microfinance movement in the early 1990s began with considerable hope and enthusiasm for women's empowerment and poverty alleviation (Banerjee, Duflo, et al., 2015). However, a series of impact evaluation studies found little to no effect of microcredit on women's empowerment and drew modest conclusions about its impact on poverty alleviation (Banerjee, Karlan, et al., 2015). The link between microcredit and women's empowerment largely rests on the theory of change that women's access to microcredit can increase women's share in and influence over household resources (Vaessen et al., 2014). Access to microcredit helps women participate in income-generating activities and increase their economic contribution to the household. Subsequently, this allows them to allocate resources as per their preferences and improve their status and respect both within and outside the household (Balasubramanian, 2013). Access to microcredit is therefore articulated as a tool that can challenge sticky gender norms and change intra-household bargaining power. Norms however change gradually, forcing individuals to weigh the costs and benefits of norm deviations (Andreoni et al., 2021). Research at the intersection of social norms and behavioural change highlights the role of cultural context, social expectations, and social proximity, among others in sustaining norms (Bicchieri, 2023a; Bicchieri et al., 2023b; Bicchieri et al., 2023c; Bicchieri et al., 2021). The evolution of norms therefore is a complex phenomenon and might not change with a single intervention. This perspective offers potential answers for the lack of impact of microcredit on women's empowerment.

In this paper, we study the impact of long-term access to microcredit on multidimensional women empowerment and poverty, with a focus on understanding the pathways through which these impacts materialise. For this purpose, we partner with an Indian Non-Banking Financial Company (NBFC) that provides microcredit to women from low-income households. We apply a three-step inclusion criteria for our sample, i.e., the individual should be a female microcredit customer between the age group of 18-55 years, married and living with their spouse, residing in either of the two districts of Thanjavur and Pudukkottai in Tamil Nadu, India. We then divide the customers into two groups- 'Long-term Microfinance Clients' (also referred to as long-term client group) which includes customers who are in their seventh Joint Liability Group (JLG) loan cycle or above as of October 2020, implying that the customer had access to microcredit for at least over a decade (at the time of our study) and 'New Microfinance Client' (also referred to as new client group) which includes customers who are in their first JLG microcredit loan cycle as of April 2021, implying that the customer is a first-time borrower with the NBFC in question. Using a statistical matching technique called coarsened exact matching, we match the customers across the two groups to ensure that they are comparable on observable characteristics with the key difference being their tenure as a microcredit customer with our partner NBFC. We use this identification strategy to examine differences in women empowerment measures between the long-term and new clients of microcredit for 360 women. To the best of our knowledge, our study is one of the first attempts to study the impact of microcredit on women's empowerment over a decade-long period. Given the stickiness of gender norms, we believe that capturing the long-term impact of microcredit is more

meaningful compared to impact evaluations that typically look at the short-term impact over a one-to-three-year period. Therefore, our methodology is well suited to address the question of whether sustained access to microcredit can facilitate a change in women's empowerment over a long-term period.

The key contribution of our paper is to explore the role of women's intra-household bargaining power (from now on referred to as IHBP) as a potential mechanism that could produce downstream effects on broader dimensions of women's empowerment and welfare gains for the household. The impact of microcredit on women's bargaining power can be studied using the framework of the intra-household resource allocation literature. Conventional economic models consider the household as a single unit. It assumes that all household resources and incomes are pooled, and the resources are allocated by an altruistic head of household who represents the household's tastes and preferences and seeks to maximize household utility (Becker, 1981). However, empirical evidence shows that households are arenas of conflict as well as cooperation and that men and women have different preferences and display strategic behavior to achieve those preferences (Ashraf, 2009; Bjorvatn et al., 2020). Cooperative and non-cooperative bargaining models do not assume similar preferences of household members. The model assumes that the dynamics of how intra-household decisions are made and how resources are allocated often rest on the bargaining power that household members have relative to each other, and that bargaining power[5] is a function of the outside options of the two individuals bargaining (Agarwal, 1997; S. J. Lundberg et al., 1997; Manser & Brown, 1980). Parallelly, Lundberg & Pollak (1993) introduce the notion of "separate spheres" of activities while bargaining over joint goods or activities. The separate spheres are based on socially recognised gender roles that emerge without explicit bargaining.

We hypothesise that whether long-term access to microcredit leads to women's empowerment crucially depends on whether there is an improvement in their intra-household bargaining power or not. Given this theory of change, a key question of relevance is- does long-term access to microcredit improve women's intra-household bargaining power? However, evidence on the same is limited and our study attempts to bridge this gap in literature. Another important contribution of our paper lies in its methodological approach in measuring IHBP. We elicit IHBP of microcredit clients and their spouses across the two groups in an incentivised manner by conducting artefactual field experiments or lab-in-the-field experiments using a household ultimatum game to test our mechanism for women empowerment. Survey-based methods of eliciting household decision-making authority and control over household resources suffer from deficiencies such as disparity in data on decision-making authority when surveying different members within the household reflecting differences in perceptions, inaccurate responses due to the presence of other household members while administering the

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[5] A member's bargaining power would be defined by the strength of the person's fallback position (the outside position that determines how well-off s/he would be if cooperation failed), also termed as "threat-point". An improvement in a person's fallback position would lead to an improvement in the deal the person gets within the household. Factors that can influence a person's bargaining power are- ownership of and control over assets, access to employment and other income-generating means, access to communal resources, access to traditional support systems, support from NGOs, and state, social norms, etc. (Agarwal, 1997).

questionnaire and differences in how questions are interpreted by respondents (Acosta et al., 2020). Intra-household experiments have thus emerged as an alternative way of measuring bargaining power and dynamics of resource allocation within the household (Bulte et al., 2016; Iversen et al., 2006; Lenjiso et al., 2016; Lowes, n.d.; Munro, 2018). Since results from an ultimatum game can be interpreted as participants displaying both strategic and altruistic behaviour or other-regarding preferences, we conduct two other behavioural games-dictator game and risk game-to elicit altruism/other-regarding preferences and risk aversion of the participants, respectively. In addition to these behavioural experiments, we also administer a household survey which includes modules on household demographics, access to formal finance, household cashflows, women empowerment, as well as dimensions relating to health, education, and quality of life. Data from the household survey allows us to measure the impact of microcredit on downstream outcomes related to specific dimensions of women's empowerment and households' multi-dimensional poverty status. Our paper thus also contributes to the growing literature on alternate ways of measuring the impact of microcredit on household's economic and social outcomes using the Multi-Dimensional Poverty Index (MPI), which is increasingly being used by development institutions, multi-lateral agencies, and the government to estimate poverty (NITI Aayog, 2023; UNDP, 2023).

We find that long-term access to microcredit does not improve women's IHBP and consequently does not have any significant impact on women's empowerment. We test our theory of change and find that the outcome variables elicited through the IHBP lab-in-the-field game/s significantly explain the different women empowerment indices in the expected directions. We also find that women in the long-term client group do not differ significantly compared to the new client group in terms of their influence over household borrowing decisions, both in terms of loan amount and loan use. This suggests that access to microcredit doesn't necessarily lead to an increase in control over funds or influence over the use of funds. Previous literature highlights two key explanations for the same. First, studies have documented that female microfinance clients lack control over the loan and often hand over the funds to their spouses, thereby exercising no control over how the funds should be used (Balasubramanian, 2013). Second is the role of intra-household sharing norms (Cai et al., 2023). Studies show that women face considerable pressure from those within and outside the family to share their resources, which limits the impact microcredit can have on their lives (Bernhardt et al., 2019; Riley, 2022). In line with our theory of change, in the absence of an improvement in women's intra-household bargaining power, it is unlikely that access to microcredit will manifest into broader dimensions of women empowerment such as economic empowerment, political participation, autonomy, mobility, gender perceptions and agency over life choices more generally (Kabeer, 1999). A systematic review by Vaessen et al., (2014) based on a meta-analysis of 25 empirical studies concluded that microcredit does not consistently increase women's control over household spending- a key variable that determines women's decision-making power within the household. Randomized evaluations of microcredit undertaken across 6 countries found insignificant effects on women empowerment measures and women's decision-making ability in three out of the four studies that evaluated this outcome (Banerjee, Karlan, et al., 2015). Evidence from qualitative studies rooted in sociological and anthropological methods echo the same finding of a lack of evidence of

microcredit on women's agency, or decision-making power. Some of these studies have even documented the adverse effects of targeting women for microcredit. Garikipati et al., (2017) argue that 'microfinance could strengthen pre-existing structures and social norms by using women's docility and lack of social mobility to enforce repayment'. Guerin (2014) finds women having to bear the social and financial cost of repayment, juggling debt, and making ends meet by sacrificing their time and resources. Guerin and Kumar (2020) find that microcredit targeted entirely to women increases their responsibilities as household budget managers. Thus, in line with our findings, this literature suggests that microcredit largely does not improve women's 'fallback' position, therefore bringing no improvement in their intra-household bargaining power (Agarwal, 1997)

In terms of the economic impact of microcredit, we find no effect on the multi-dimensional poverty status of long-term clients. Moreover, we find that women who are long-term clients of microcredit are no more likely to be self-employed or engage in paid work. However, conditional on being employed, they spend more time in paid work and less time in household chores and leisure compared to women in the new client group. This could be linked to the way microfinance loans are used. We find in our sample that only 5% of microfinance loans in our dataset are used for income-generating purposes. This is consistent with existing literature that finds microfinance to be largely used for managing day-to-day finances, meeting healthcare expenses, payment of education fees, etc. (Morduch, 2023). Interestingly, among those households that do use microfinance loans for income-generating purposes, we find a weak but positive effect of long-term access to microcredit on women empowerment index. We also find suggestive evidence of higher bargaining power among long-term clients compared to new clients, within this sub-group.

Three key policy implications emerge from our results. First, microcredit alone is not enough to empower women and change intra-household bargaining power. A holistic approach that focuses on enhancing skills, networks, and livelihoods in addition to access to formal finance and social protection can prove to be more effective in transforming women's lives and improving their well-being. Second, given the potential of microcredit in helping households manage short-term income fluctuations and thereby smooth consumption, microcredit contracts can be tailored to meet the specific cashflow needs of their clients. Research shows that suitable microfinance contracts tailored to various customer categories are more effective than standard microcredit contracts offered as one homogeneous product (Cai et al., 2023). Finally, policies that enable access to credit for enterprise creation and expansion can be a useful intervention for women from low-income households, given its potential in impacting women's livelihood, wellbeing, and agency. However, identifying and targeting the right group of women for such an intervention is important as the desire to be self-employed might not be universal. Indian social protection schemes such as the central and state-level rural livelihoods programs focus on, among other things, building self-employment opportunities through market linkages, business training, and access to formal credit. These programs have demonstrated positive effects on women's decision-making power and households' socio-economic outcomes (Hoffmann et al., 2018; Kochar et al., 2022), indicating that a credit-plus solution might be relevant in empowering women from low-income households.

The rest of the paper proceeds as follows. Section 2 sets the context for our study design and elaborates on the quasi-experimental methodology adopted in our study. Section 3 describes the sources of data, and the empirical specifications used to analyse our data. Section 4 discusses the results and finally, Section 5 concludes the paper by discussing the policy implications, limitations, and areas for further research.

2. Background and Study Design

2.1 Implementation Partner and Study Location

We partner with a large Indian Non-Banking Financial Company (from now on referred to as implementation partner) that provides microfinance/Joint Liability Group (JLG) loans to women from low-income households. The implementation partner is present across 10 Indian states with its majority customer base situated in the state of Tamil Nadu in South India. We, therefore, undertake our study in the Thanjavur and Pudukkottai districts of Tamil Nadu.

2.2 Quasi-experimental Design

A randomized controlled trial is considered to be the gold standard for an impact evaluation. In the context of our study, however, we were unable to randomly assign microcredit to study participants, due to operational constraints. Therefore, we adopted a quasi-experimental methodology involving a statistical matching technique to causally identify the impact of access to microcredit. We did so by accessing JLG loan data of existing customers maintained by our implementation partner (from now on referred to as administrative data). The customer data was then bifurcated on the basis of when they adopted microcredit. If the customers were early adopters of microcredit, i.e., if they were in their seventh loan cycle or above as of December 2020, they were considered 'Long-term Microfinance Clients', and if they started their first loan cycle between December 2020 to April 2021, they were termed as 'New Microfinance Clients'. Since each JLG loan cycle lasts for an average of 2 years, customers who were in their seventh loan cycle or more had access to microcredit for at least 14 years as opposed to the counterfactual group who were in their first loan cycle at the time of the study and hence had access to microcredit for less than a year. Since the customers self-selected when to take microcredit, long-term microfinance clients could be systematically different from new microfinance clients. To mitigate this selection bias, it is important to ensure that the two groups are comparable. For this purpose, we used statistical matching to select the best-matched sample of long-term clients with new clients (Reinisch et al., 1995; Stuart, 2010). Matching techniques ensure that units across the two groups (long-term clients and new clients) are similar, based on relevant observable characteristics. This ensures that the differences in outcomes between the two groups can be causally attributed to the intervention or program being studied. To select covariates that produce unbiased estimates, the treatment assignment needs to be strongly ignorable, i.e., conditional on the observed covariates, there should be no unobserved differences between the long-term and new client units (Rosenbaum & Rubin, 1985; Stuart, 2010). In order for this assumption to hold, it is important to include all the pre-treatment covariates in the matching procedure that affect both the treatment (time of adoption of microcredit) and the outcome (intra-household bargaining power) simultaneously (Heckman

et al., 1997; Rubin & Thomas, 1996), but those variables that are affected by the treatment (such as occupation, income of the customer) need to be avoided (Frangakis & Rubin, 2002; Greenland, 2003; Rosenbaum, 1984). Thus, the covariates that we selected from the administrative dataset for matching were age, education, caste, religion, and household size. We restricted the administrative data to married, female customers in Thanjavur and Pudukkottai. In order to control for potential heterogeneity among customers between the two districts, we matched long-term and new customers within districts but not across districts (Heckman et al., 1998; Heckman et al., 1997). Our final sample consisted of 360 customer couples with 180 long-term client couples matched with 180 new client couples across 185 villages in the two districts.

In our study, we used the Coarsened Exact Matching (CEM) technique.[6] CEM is a type of stratification matching method in which the continuous covariates are first coarsened into different bins, and then exact matching is applied to these coarsened covariates.[7] CEM creates different subclasses or strata based on the different combinations of the selected covariates and then exactly matches each long-term client unit with its corresponding new client unit. It drops any subclasses that do not contain at least 1 unit from each of the two groups. Therefore, it does not require a separate region of common support, unlike other matching techniques. Moreover, it also meets the congruence principle as it operates in the space where the covariates were created and measured (Iacus et al., 2012; King et al., 2011).

In the next section, we describe the sources of data used in our study and the empirical strategy for our analysis.

3. Data and Empirical Strategy

3.1 Data

We used three sources of data for our study- administrative data obtained through our implementation partner, behavioural games data, and finally household survey data. We describe the methods used in collecting each of the three datasets below-

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[6] There are different types of matching techniques that can be potentially used and there are certain merits and demerits for each. To determine which one works best for our purpose depends on two things- the number of units that remain after matching and the bias-variance trade-off. Even if we get the desired sample size, it is important to check the balance of the covariates between the matched samples to check the quality of the matches. The balance of the covariates between the matched units can be assessed using the Standardized Mean Differences (SMD), Variance ratios, Empirical Cumulative Distribution Function (CDF) Statistics, Visual Diagnostics, and Prognostic scores. SMD is the standardized difference in the means of each covariate between the two groups and an SMD closer to 0 represents a good balance. Normand et al., (2001) recommend that SMDs less than 0.1 represent a negligible difference in the mean between the two groups. Variance ratios close to 1 indicate a good balance as they mean that the variances of covariates in the treated and the control groups are similar (Austin, 2009). To arrive at the final sample, we tried different types of matching methods such as propensity score matching, nearest neighbor matching, optimal pair matching, optimal full matching, caliper matching, exact matching and finally decided to use coarsened exact matching (CEM) technique.

[7] For example, the continuous variable age is converted into classes of age and education into three literacy categories.

3.1.1 Administrative Data

We obtained access to administrative data through our implementation partner. The administrative dataset refers to the Customer Management System (CMS) database that every financial service provider maintains to record and store information about their customers including the loan history of their customers. This database contains the following categories of information- customer details (age, marital status, gender, income, occupation, education), loan details (loan amount, tenure, interest rate, loan type, branch, and cluster name (a cluster is a region that is served by a group of KGFS branches), and customer household details (caste, religion, household income, household size, asset ownership). As described in the previous section, this dataset is used as a starting point in the study design to match customers across the two groups- long-term and new clients of microfinance.

3.1.2 Household Survey

The household survey consists of the following modules: household demographics, financial inclusion, household cashflows and financial portfolio, women empowerment, time-use, and dimensions relating to health, education, and standard of living. The household survey is administered among microfinance client couples in our sample across both the groups- long-term and new clients of microfinance. The household survey is bifurcated into two parts- men's questionnaire and women's questionnaire. Women are administered questions on aspects of the household that they are more knowledgeable about such as type of cooking fuel, source of water, sanitation, and health and nutrition-related information of household members. A large part of the women's questionnaire is also focused on capturing several dimensions of women's empowerment. These dimensions are divided into four broad categories- access to resources, gender perceptions, household decision-making power, and time use. The men's questionnaire captures the remaining details of the household along with also capturing the time-use details for men. Finally, at the end of the men's and women's questionnaire, the height and weight of both the husband and wife are recorded to calculate the Body-Mass Index (BMI).

3.1.3 Behavioural Games

To elicit the intra-household bargaining power of men and women in our sample, we play the Ultimatum Game with spouses across both the long-term and new client groups. Typically, in an ultimatum game, two players are allocated a sum of money that can be divided between them by player 1 (proposer). The proposer makes an offer to the responder (player 2) and the responder can choose to accept or reject this offer. If the offer is accepted, each player receives the amount that the proposer suggested. If the offer is rejected, each player receives zero. In our ultimatum game, player 1 is given ₹400 (USD 4.85)[8] to allocate between him/her and their spouse (player 2). They can propose any amount between ₹0-400 (both inclusive). Player 2 then decides whether she/he wants to accept or reject the offer. If player 2 accepts the offer, both player 1 and player 2 win the amounts allocated by player 1. If player 2 rejects the offer, then both lose the entire sum. In our experiment, we randomly assign spouses to assume the role of player 1 or 2. According to game theory, player 1 should offer any amount slightly higher than 0 so that the payoff for player 2 becomes greater than 0 and player 2 accepts the offer. Moreover, any higher amount given by player 1 to player 2 as well as player 2's refusal

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[8] Using the exchange rate of ₹1 = USD 0.012.

to accept a low amount can be interpreted as higher bargaining power for player 2 (Thaler, 1988). Thus, given the nature of the ultimatum game, the higher the allocation by the proposer to the responder, the lower the proposer's bargaining power and vice versa. Similarly, the higher the minimum amount accepted by the responder, the higher the responder's bargaining power and vice versa (Lowes, 2022). Thus, the amounts proposed or expected depend on the perception of the players regarding their own and their partner's bargaining power.

In this game, high allocation by the proposer can also be motivated by his/her altruism or risk aversion while, the responder's rejection of the offer can be motivated by non-cooperation, inequality aversion, negative reciprocity, or punishment (Croson & Gneezy, 2009). However, the incentive structure of the game at least partially controls for these other potential factors that might influence behaviour, and make the players objectively predict the bargaining position of the other party (Lenjiso et al., 2016).

Moreover, we also administer the dictator game and a risk game to elicit altruism and risk aversion among subjects. To control for intrinsic altruism, we play a dictator game where two players are allocated a sum of money that can be divided between them. The proposer makes an offer to the responder of how the money will be divided, but unlike the ultimatum game, in the dictator game, the responder has no decision to make, and (s)he has to accept the offer as per the game design. In our game, player 1 is asked to allocate ₹400 (USD 4.85) between themselves and player 2 (their spouse). Player 1 can propose any amount between ₹0-400 (both inclusive). However, in this game, player 2 has no agency and simply has to accept the amount allocated by player 1. According to game theory, player 1 shouldn't offer anything to player 2 as player 2 has no control over the outcome of the game, and therefore any amount greater than zero sent by player 1 to their counterparts can be viewed as intrinsic altruism (Hoffman et al., 1996). Player 1 (2) for the ultimatum game continued to be player 1 (2) for the dictator game. However, only one of these games is randomly selected for which the respondents would get paid. The determination of which game was to be selected for payment was dependent on the outcome based on the rolling of a die. If the rolling of a dice led to an odd number, then the ultimatum game outcomes were selected, and if rolling of a dice led to an even number, then the dictator game was selected for payment. Thus, both games were equally likely to be selected for payment and the subjects were informed about this before the start of the experiment. We chose this "pay one randomly" payoff mechanism as it helps in eliciting true responses by avoiding wealth effects and hedging (Charness et al., 2016).

Finally, we administered the risk game among our study participants. Each respondent, i.e., both the husband and the wife, were given ₹50 (USD 0.6) for participating in the study. The subjects could keep the ₹50 for themselves or they could use that money to participate in an incentivized risk game where they were offered a chance to invest their earnings of ₹50 from the survey into a lottery. They could invest any amount between ₹0-50 in the lottery where they would receive triple the amount of money invested with a 50% probability or zero otherwise. For instance, if a respondent chose to invest ₹30 and won the lottery, she would receive 3(₹30) + ₹20 (earning remaining from the survey) = ₹110, and if she lost the lottery, then she would receive only ₹20. The outcome of the lottery was decided by the roll of a dice. If an odd number appeared on the dice, the respondent won the lottery, and if an even number appeared, (s)he lost. The risk game was played to elicit the risk aversion of the subjects and in this game, the lower they invest, the more risk-averse they are.

3.2 Empirical Strategy

3.2.1 Women Empowerment Indices

To estimate the effects of long-term access to microcredit on women's empowerment, we categorize women's empowerment into four dimensions. The four categories of indices are described as follows:

Access to Resource Index (ARI)- this index is a composite of 10 questions that elicit women's access to information and resources, both financial and non-financial. These are- awareness about contraceptives, membership in a Self-Help Group (SHG), making an expensive purchase without informing the husband, visiting public places without the husband's permission, access to family assets, feminine hygiene products, individual savings, bank account operation for depositing and withdrawing money, and access to paid work.

Gender Perceptions Index (GPI)- this index is a composite of 9 questions that elicit women's perceptions relating to gender norms. These are women's perceptions relating to control over money, household budget decisions, financial decisions, the importance of a girl child versus a boy child, whether men should be respected more than women, whether it is acceptable for women to earn more than their husbands, influence over household income, and whether children obey the woman and her spouse equally.

Household Decision-Making Power Index (DMI)- this index is a composite of 8 questions that elicit women's decision-making power across 8 categories- grocery spending, healthcare expenses, number of children to have, children's education and marriage, savings and borrowing decisions, and election decisions.

Multi-Dimensional Women Empowerment Index (WEI)- Finally, this is a composite of all the questions included in the previous three indices and therefore aggregates women's empowerment across all these dimensions.

We apply the Principal Component Analysis (PCA)[9] approach to the four dimensions of women empowerment data to create four separate robust indices. PCA is a common approach used in the construction of women empowerment indices, given the multidimensionality of the data. The main advantage of the PCA approach is that it avoids subjective weightings of the indicators and instead assigns weights on the basis of the information (variation) that is captured by the indicators (Ewerling et al., 2017; Sharaunga et al., 2016).

For each question in the women empowerment module of the household survey, we order the categorical response in ascending order such that the higher the value on any given question, the higher the level of women empowerment. For example, in the question, "Can you visit a market, shop, hospital, or children's school alone, if necessary, without your husband's permission?" the categories are "Always" "Most of the times" "Sometimes" and "Never", which receive a score of 3, 2, 1, & 0, respectively. Similarly, for binary variables, 1 and 0 denote high and low levels of women empowerment, respectively. Finally, we standardize all the observations in the women empowerment module data so as to rescale it to have a mean of

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[9] Principal Component Analysis (PCA) is a dimensionality reduction technique used to reduce the number of variables in the data set. It takes n correlated variables from an initial set and creates uncorrelated components, where each component is a linear weighted average of the initial set of correlated variables.

zero and a standard deviation of one, before applying the PCA approach, as is common practice (OECD, 2008; Vyas & Kumaranayake, 2006).[10]

After applying the PCA, there are two common approaches to determining the number of principal components for the final index creation (OECD, 2008)- keeping those principal components whose eigenvalues are greater than or equal to 1; keeping those principal components that explain at least 80% of the variation in the data. Since literature is divided on the best 'stopping rule' for principal component selection, we adopt both approaches.[11] For the main result in our paper, we construct the PCA based on the eigenvalue approach, and use the alternate method of PCA creation as robustness checks. Once the principal components are extracted, we create a weighted average of these components to arrive at the final index which was then rescaled to lie between 0 and 1 for interpretability.

For our analysis, we derive four dependent variables- these are the four indices constructed using the PCA technique and are labeled as ARI, GPI, DMI, & WEI. To study the causal impact of long-term access to microcredit on women's empowerment across the four dimensions, we employ an OLS estimation strategy to estimate the following model-

$$Y_i = T_i \beta + X_i \delta + U_i$$

Where Y_i denotes the dependent variable ARI or GAI or DMI or WEI which is a value between negative infinity to positive infinity, T_i is an indicator that takes the value one for long-term clients and zero for new clients based on the time of exposure to microcredit, X_i denotes the matrix of other covariates such as religion, caste, household size, level of education of the participant, years since marriage, age difference between spouses, number of females in the household, total household income, household land holding, number of outstanding loans with the household, BMI, and cluster number. β denotes our coefficient of interest, δ denotes the vector of coefficients to be estimated, and U_i denotes the random disturbance term.

3.2.2 Intra-Household Bargaining Power

We construct two experimental game-based measures to elicit intra-household bargaining power. These measures form the two outcome variables, namely, the Amount Allocated to

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[10] This standardization method in line with the Central Limit Theorem assumes that, for a large sample, the underlying measures follow a normal distribution. Consequently, after the standardization, the resulting indices computed using the PCA method range from negative to positive infinity.

[11] While creating DMI, we started with 9 variables and using the eigenvalue approach, were left with only 2 principal components. Cumulatively, they explained ~65% of the total variation of the data. After getting these principal components, we created a weighted average of these components to arrive at the final DMI. While using the 80% variation approach, we extracted 4 principal components. However, each subsequent component added much less new information than its predecessors.

Similarly, for ARI, we started with 10 variables. Using the eigenvalue approach, we were left with 4 principal components which cumulatively explained 70% of the total variation of the data. Using the 80% variation approach, we extracted 7 principal components.

For GAI, we started with 9 variables. Using the eigenvalue approach, we were left with 3 principal components which cumulatively explained 62% of the total variation of the data. Using the 80% variation approach. We extracted 6 principal components.

For WEI, we started with all the 28 variables. Using the eigenvalue approach, we were left with 7 principal components which cumulatively explained 62% of the total variation of the data. Using the 80% variation approach. We extracted 13 principal components.

Spouse (AAS) and the Acceptable Minimum Amount (AMA). As a preliminary check, we run t-tests to test the difference in means of the long-term clients and new clients for both the amount allocated to the spouse and the acceptable minimum amount. The results are summarized in Table A. 2 in the Appendix. This table records the difference in means for both pooled data as well as for the sample bifurcated by male and female. We find that long-term clients, on average, allocate higher amounts of money to their spouses, and this result is driven by the female population. In the same vein, we find that only the husbands of the long-term female clients accept a higher minimum amount from their spouses. These results are indicative of a reduction of bargaining power for long-term female customers.

However, these results do not account for other characteristics that may affect our outcome variables and consequentially do not allow for causal inference. In order to arrive at causal estimates, we employ a Tobit estimation strategy (Austin et al., 2000; Tobin, 1958) - as our experimental design censors our outcome variables between ₹0 and ₹400 (4.8 USD) - in conjunction with coarsened exact matching to estimate the following model:

$$Y_i^* = T_i\beta + X_i\delta + U_i$$

Where Y_i^* denotes the uncensored and, therefore, unobserved dependent variable, also known as the latent variable, T_i is an indicator that takes the value one for long-term clients and zero for new clients based on the time of exposure to microcredit, X_i denotes the matrix of other covariates such as gender of the participant, religion, caste, household size, level of education of the participant, years since marriage, age difference between spouses, number of females in the household, total household income, household land holding, number of outstanding loans with the household, BMI, altruism, and risk, β denotes our coefficient of interest, δ denotes the vector of coefficients to be estimated, and U_i denotes the random disturbance term. Let Y_i be the observed dependent variable. Then, as per the truncation mechanism:

$$Y_i = \begin{cases} 0 & if\ Y_i^* \leq 0 \\ 400 & if\ Y_i^* \geq 400 \\ Y_i^* & otherwise \end{cases}$$

Since the game is played with both husbands and wives, our sample contains an equal number of males and females. A majority of respondents are Scheduled Caste, Hindus, with an average family size of 4 members per household and have completed education up to at least Class 7. An average couple in our sample has been married for about 22 years and has an age difference of 5 years. An average household has almost 2 females and earns a monthly income of ₹19,000 (~230 USD) and has at least 2 outstanding loans.

3.2.3 Multi-Dimensional Poverty Index

The purpose of the Multi-Dimensional Poverty Index (from now on referred to as MPI) is to capture the deprivation that a household faces across multiple dimensions of their life that go beyond a single economic dimension of income or consumption (Alkire & Foster, 2011). The MPI based on the Alkire-Foster method is the most widely used non-monetary poverty index in the world (Godinot & Walker, 2020). It captures overlapping deprivations in health, education, and living standards and has been used by UNDP in its Human Development Report since 2010 (UNDP, 2010). Given the lack of impact of microcredit on household outcomes such as income and consumption, there is a growing body of literature that explores alternative

ways of measuring impact (Merfeld & Morduch, 2023; UNCDF, 2022; UNSGSA, 2021). In this study, we therefore use a multi-dimensional poverty lens to study the impact of microcredit on households' overall well-being.

In our study, the MPI is composed of three dimensions made up of 11 indicators (see Table A. 1 in Appendix). Associated with each indicator is a minimum level of achievement which is normatively considered sufficient in order for the household to be considered 'not deprived', called the deprivation cut-off. For each household, the indicator is assigned a score of 1 if it meets the deprivation cut-off and 0 otherwise. An equal weight of 1/3 is applied to each dimension- education, health, and standard of living. Since the number of indicators is not consistent across the three dimensions, we select the weights to be applied to each indicator such that the sum of the weights adds up to (i) 1/3 for each dimension and (ii) 1 across all dimensions.

We next move to calculating the deprivation score for each household by taking a weighted sum of the number of deprivations, so that the deprivation score for each household lies between 0 and 1. The higher the score, the higher the deprivation. A household that is not deprived in any indicator, receives a score equal to 0 and a household that is deprived in all indicators receives a score of 1.

Finally, in order to identify a household that is multi-dimensionally poor, we use a second cut-off or threshold, which as per the Alkire-Foster methodology is called the poverty cut-off. India's national MPI follows the poverty cut-off of 0.33 used in the global MPI measure (NITI Aayog, 2023). Consequently, any household that receives a score of 0.33 or higher is identified as poor.

For our analysis, we derive two dependent variables based on MPI- 1. continuous variable which is the Deprivation Score and takes a value between 0 and 1; 2. categorical variable Poor, which identifies households as poor or not poor, taking values 1 and 0 respectively based on the poverty cut-off. In order to study the causal impact of long-term access to microcredit on a household's multi-dimensional poverty, we use the following empirical specifications-

Fractional logit regression - Deprivation Score

$$\ln\left(\frac{Y_i}{1 - Y_i}\right) = T_i\beta + X_i\delta + U_i$$

Where Y_i denotes the dependent variable Deprivation score, which is a fraction between 0 and 1, both end points included.

Logistic regression – Poor

$$\ln\left(\frac{\Pr(Y_i = 1)}{\Pr(Y_i = 0)}\right) = T_i\beta + X_i\delta + U_i$$

Where $\Pr(Y_i = 1)$ and $\Pr(Y_i = 0)$ denotes the probability of being poor and not poor, respectively. Additionally, in both specifications, T_i is an indicator that takes the value one for long-term customers and zero for new customers based on the time of exposure to microcredit, X_i denotes the matrix of other covariates such as gender of the participant, religion, caste, household size, level of education of the participant, years since marriage, age difference of

spouses, number of females in the household, total household income, household land holding, number of outstanding loans with the household, and cluster number. β denotes our coefficient of interest, δ denotes the vector of coefficients to be estimated, and U_i denotes the random disturbance term.

4. Results

4.1 Women empowerment indices

We first examine the effects of long-term access to microcredit on the four dimensions of women's empowerment- DMI, ARI, GPI, and WEI. Table 1 shows the results of Fractional regression on the women empowerment index, which is a composite of DMI, ARI, and GPI. Whereas Table 2 shows the results of Fractional regression on the other three dimensions of women empowerment – DMI, ARI, and GPI. As described in the previous section, the indices are derived by applying the PCA approach to the data collected within the women's empowerment module. Column 2 in Table 1 and Columns 2, 4, and 6 of Table 2 show the results of Fractional regression model including demographic and behavioural controls. Results in these tables are based on indices created using a weighted average of all the principal components with eigenvalues greater than 1 and then rescaling the indices between 0 and 1. From both Table 1 and Table 2 we find that the coefficients for long-term clients for each of the indices- DMI, ARI, GPI, and WEI are negative but statistically insignificant. This indicates that long-term clients of micro-credit are not better off than newer clients in terms of their levels of empowerment measured through the four indices.

To check for the robustness of our results, we run the following regressions. First, we run the same set of regressions with cluster-fixed effects (Table A. 3). Next, we run the same regression but this time on the four dimensions of women empowerment created using the weighted average of all the principal components that explain at least 80% of the variation in the data (Table A. 4 and Table A. 5in Appendix). We find that the results of regression in Table A. 4 and Table A. 5 remain similar to Table 1 and Table 2, but in Table A. 3, ARI (with cluster fixed effects) is found to be negative and statistically significant at 5%. Moreover, we also run regressions on the four dimensions of women empowerment with a slight variation in long-term client type (Table A. 6 and Table A. 7). In these regressions we create a new category of long-term clients who we label as 'very long-term clients' of microcredit such that they are at least in their 8th loan cycle or above (microfinance clients for at least 16 years). We find that although the overall results remain similar, both DMI and ARI are statistically significant at 10% and 5% respectively in Table A. 7, columns (2) and (5) (without cluster-fixed effects), indicating that longer-term access to microcredit could result in lower decision-making power and lower access to resources for women.

Table 1: Fractional regression results for Women Empowerment Index

	Women-empowerment Index	
	(1)	(2)
Long-term Clients	-0.036	-0.029
	(0.031)	(0.028)
Hindu Religion	-	-0.118**
		(0.058)
Caste (Base category - General)		

Scheduled Caste	-	-0.047
		(0.036)
Other Backward Castes	-	-0.019
		(0.040)
Family size	-	0.010
		(0.019)
Education (Base category - No formal education)		
Class 1-5	-	0.057
		(0.047)
Class 6-9	-	0.049
		(0.038)
Class 10-12	-	0.046
		(0.040)
Vocational Training, Graduation, or Postgraduation	-	-0.068
		(0.074)
Years since marriage	-	0.003
		(0.002)
Age difference of spouses	-	-0.005
		(0.004)
No. of females in HH	-	-0.043*
		(0.023)
Total HH income (in ₹)	-	-0.000003
		(0.000002)
HH land holding (in sq. ft.)	-	-0.00000002
		(0.0000003)
Number of outstanding loans of the household	-	0.075***
		(0.016)
Risk aversion	-	0.003***
		(0.001)
BMI	-	-0.001
		(0.004)
New Client Mean	0.681	0.681
Observations	360	360
Pseudo R2	0.001	0.062
Demographic and Behavioural Controls	No	Yes

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

This table consists of results of fractional regressing on the different dimensions of women empowerment on customer type. In this table, WEI has been created using the weighted average of only those principal components that have eigenvalues greater than 1 and the indicex is rescaled between 0 and 1. Columns (1) and (2) correspond to the results of regressing Women-Empowerment Index on customer type. Column (1) has no controls and Column (2) has demographic and behavioral controls, such as religion, caste, family size, education, years passed since marriage of the customer, age difference of the spouses, number of females in the household, total monthly household income, the landholding of the household, number of outstanding loans by the household, BMI, and risk aversion of the customer.

Table 2: Fractional regression results for Decision-Making Index, Access to Resources Index, and Gender Perceptions Index

	Decision-Making Index		Access to Resource Index		Gender Perceptions Index	
	(1)	(2)	(3)	(4)	(5)	(6)
Long-term Clients	-0.033	-0.034	-0.023	-0.021	-0.022	-0.017
	(0.030)	(0.028)	(0.015)	(0.014)	(0.032)	(0.029)
Hindu Religion	-	-2.084***	-	-0.047	-	-0.163**
		(0.173)		(0.033)		(0.074)
Caste (Base category - General)						
Scheduled Caste	-	-0.028	-	-0.005	-	-0.047
		(0.036)		(0.016)		(0.035)
Other Backward Castes	-	0.008	-	0.030	-	0.002
		(0.040)		(0.020)		(0.040)
Family size	-	0.002	-	0.000	-	0.012
		(0.019)		(0.009)		(0.020)
Education (Base category - No formal education)						
Class 1-5	-	0.060	-	-0.034	-	0.074
		(0.049)		(0.023)		(0.047)
Class 6-9	-	0.060	-	0.005	-	0.048
		(0.038)		(0.019)		(0.038)
Class 10-12	-	0.061	-	0.004	-	0.010
		(0.039)		(0.018)		(0.042)
Vocational Training, Graduation, or Postgraduation	-	-0.035	-	-0.035	-	-0.122
		(0.068)		(0.034)		(0.078)
Years since marriage	-	0.003	-	0.000	-	0.001
		(0.002)		(0.001)		(0.002)
Age difference of spouses	-	-0.004	-	-0.002	-	-0.003
		(0.004)		(0.002)		(0.004)
No. of females in HH	-	-0.042*	-	-0.003	-	-0.047**
		(0.023)		(0.010)		(0.024)
Total HH income (in ₹)	-	-0.000002	-	-0.000002	-	-0.000003
		(0.000001)		(0.000001)		(0.000002)
HH land holding (in sq. ft.)	-	0.00000002	-	0.00000008	-	0.00000009
		(0.0000003)		(0.0000001)		(0.0000003)
Number of outstanding loans of the household	-	0.077***	-	0.038***	-	0.093***
		(0.018)		(0.007)		(0.016)
Risk aversion	-	0.003***	-	0.001***	-	0.002**
		(0.001)		(0.000)		(0.001)
BMI	-	-0.004	-	-0.002	-	0.000
		(0.004)		(0.002)		(0.004)
New Client Mean	0.779	0.779	0.295	0.295	0.616	0.616
Observations	360	360	360	360	360	360
Pseudo R2	0.001	0.078	0.001	0.015	0.0004	0.060
Demographic and Behavioural Controls	No	Yes	No	Yes	No	Yes

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

This table consists of results of fractional regression of the different dimensions of women empowerment on customer type. In this table, DMI, ARI, and GAI have been created using the weighted average of only those principal components that have eigenvalues greater than 1 and the indices are rescaled between 0 and 1. The Columns (1), and (2) correspond to the results of regressing the Decision-Making Index on the type of customer, similarly, Columns (3) and (4) correspond to the results of regressing Access to Resources Index on customer type, and Columns (5) and (6) correspond to the results of regressing Gender Perceptions Index on customer type. Columns (1), (3), and (5), have no controls, Columns (2), (4), and (6) have demographic and behavioral controls, such as religion, caste, family size, education, years passed since marriage of the customer, age difference of the spouses, number of females in the household, total monthly household income, the landholding of the household, number of outstanding loans by the household, BMI, and risk aversion of the customer.

4.2 Mechanism: Intra household bargaining power

We theorize IHBP to be an important channel through which long-term access to microcredit could manifest in the form of women's empowerment across multiple dimensions, such as women's access to resources, gender perceptions, and her intra-household decision-making ability. This theory is rooted in the literature that finds a positive impact on women's own and their family's outcomes when women are in control of household resources, which is equated to women's agency/bargaining power in the economics literature (Vaessen et al., 2014). Existing literature posits microcredit to improve women's IHBP when (i) women are involved in borrowing decisions and have control over how the loan funds will be used, and (ii) as a result of access to microcredit, women can make an economic contribution to their family through their involvement in paid work/income generating activity, thereby increasing their intra-household status and agency. Given these pathways, the following section first examines the impact of long-term access to microcredit on IHBP, as measured through lab-in-the-field behavioural games. Results pertaining to women's paid work, occupation type, time-use, and involvement in borrowing decisions are described in Section 4.3 as these factors could have a bearing on not just women's IHBP but also on household outcomes, measured through the multi-dimensional poverty index.

4.2.1 Amount Allocated to Spouse

Our first outcome variable for analysis is the amount allocated to the spouse where player 1 subjects are asked to allocate ₹400 (USD 4.85) among themselves and their spouse such that they get the money only if their spouse agrees to their proposed allocation.

Table 3 shows the results for husbands of female clients and female client samples.[12] It presents two columns comprising a model with (1) no controls, and (2) Demographic, BMI, and Behavioural controls for the husbands of female clients, and the corresponding models for the females are presented in Columns (3), and (4). The Demographic controls in the model include variables such as gender, religion, caste, family size, education level, years since marriage, age difference among spouses, number of females in the household, household income, and the number of loans outstanding with the household. We also control for BMI, which refers to Body Mass Index, a ratio of weight in kg and height squared in meters. The behavioral controls include variables such as altruism (for player 1) and risk aversion (for both players) from the dictator and risk games.

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[12] See Table A. 8 in the Appendix for the results of the Pooled Sample regression.

We find that long-term female clients, on average, allocated 5.9-7.4% more money to their spouses than the newer female customers. As shown in column (4) of Table 3, the average long-term female client allocated ₹19.27 (USD 0.24) more than the average allocation amount of ₹268 (USD 3.25) by the new female client. The effect of long-term micro-credit access in column (3) may be interpreted in the same way. The effects for the females are higher than the husbands (Columns (1) and (2) are comparable to Columns (3) and (4) respectively) and are significant at p-value<0.01 level for Column (4), and at p-value<0.05 level for Column (3). For the husbands, the effects are significant at p-value<0.05 for two models (Columns (1) and (2)). Our results suggest that long-term female clients have less bargaining power in the household as they are willing to allocate a significantly higher amount to their spouses than the newer female clients. The husbands of long-term female clients who are player 1, also allocate more money to their spouses than new customers. However, both the amount and the level of significance is lesser compared to the females. Garikpati et al. (2017) discuss mechanisms that may explain our results. According to their analysis, microfinance loans may strengthen existing social norms around power dynamics in the household. Consequently, the woman's docility and lack of agency might be exploited to enforce payments while the lion's share of the loan amount might be used by the husband.

We now discuss the significant control variables in Columns (2) and (4) in Table 3. Husbands of female clients belonging to Scheduled Castes and Other Backward Castes, on average, allocate ₹22.94 (USD 0.28) and ₹39.62 (USD 0.48) less to their spouses, compared to their counterparts from the General caste. For the husbands, an additional loan outstanding with the household is associated with a ₹9.43 (USD 0.11) increase, and an additional unit increase in the measure of risk aversion, signifying an increase in risk preference, is associated with a ₹0.39 (USD 0.005) increase in the amount allocated to the spouse. We also note that higher household income and having primary, and secondary school education is associated with lower amounts allocated to the spouse. For the female clients, an additional year of marriage is associated with a ₹1.30 (USD 0.02) decrease, an additional loan outstanding with the household is associated with a ₹7.99 (USD 0.10) increase, an additional female member in the household is associated with an ₹11.12 (USD 0.13) increase, and an additional unit increase in BMI is associated with an ₹3.15 (USD 0.04) increase in the amount allocated to the spouse. To check for the robustness of our results to different functional forms, we run a fractional regression analysis. For this we express the amount allocated as a fraction of ₹400 (USD 4.85) and use this measure as the dependent variable. The results are similar in sign to our Tobit regression results and are presented in **Error! Reference source not found.** the Appendix. We also include cluster fixed effects to control for possible unobserved time-invariant differences and find no qualitative change in our results[13].

Table 3: Tobit regression results for IHBP outcome 1: Amount Allocated to Spouse in Ultimatum Game

	Husbands of female clients		Female clients	
Amount Allocated to Spouse	(1)	(2)	(3)	(4)
Long-term clients	8.687	16.000**	15.880**	19.927***
	(7.844)	(7.343)	(7.765)	(7.464)
Hindu religion	-	-	-	23.378
				(21.117)
Caste (Base category – General)				
Scheduled Caste	-	-22.941**	-	-5.061

[13] See Table A. 9 in the Appendix

	(1)	(2)	(3)	(4)
		(9.495)		(8.987)
Other Backward Castes	-	-39.622***	-	4.204
		(10.790)		(10.101)
Family size	-	4.889	-	-6.516
		(5.827)		(4.811)
Education				
Base category - No formal schooling				
Class 1-5	-	-27.739*	-	11.854
		(16.313)		(22.628)
Class 6-9	-	-16.406*	-	-6.981
		(9.316)		(8.101)
Class 10-12	-	-12.183	-	1.177
		(12.066)		(12.704)
Vocational Training, Graduation or Post Graduation	-	10.942	-	-5.332
		(18.217)		(15.583)
Years since marriage	-	-0.540	-	-1.302**
		(0.644)		(0.648)
Age difference of spouses	-	1.029	-	-1.593
		(1.315)		(1.780)
No. of females in HH	-	2.819	-	11.123**
		(7.037)		(5.016)
Total HH income (in ₹)	-	-0.0004**	-	-0.00001
		(0.0002)		(0.0004)
HH land holding (in sq. ft.)	-	-0.0001	-	0.0001
		(0.0001)		(0.0001)
Number of outstanding loans of the household	-	9.436**	-	7.997**
		(3.959)		(3.810)
BMI	-	1.504	-	3.150*
		(1.347)		(1.822)
Altruism	-	0.056	-	-0.027
		(0.065)		(0.129)
Risk attitude	-	0.387**	-	-0.097
		(0.188)		(0.236)
Constant	278.178***	233.760***	268.464***	209.529***
	(6.438)	(41.619)	(6.753)	(47.611)
New Customer Mean	278	278	268	268
Observations	168	168	192	190
Pseudo R2	0.001	0.023	0.002	0.013
Demographic and Behavioral controls	No	Yes	No	Yes

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

The coefficient on Religion cannot be calculated as there are only Hindu men in the population with a non-missing value for the amount allocated to spouse variable.

This table consists of results of regressing the Amount Allocated to spouse on customer type, by gender using Tobit. The Column (1) and (3) have no controls, (2) and (4) have demographic and behavioral controls , such as religion, caste, family size, education, years passed since marriage of the customer, age difference of the spouses, number of females in the household, total monthly household income, the landholding of the household, number of outstanding loans by the household, BMI, altruism and risk attitude of the customer.

A possible threat to our use of the amount allocated to spouse as a measure of bargaining power is that the measure may be capturing other motivations for allocation in addition to the fear of rejection from the spouse. Existing literature suggests that generous offers by the proposers in the ultimatum game could result from proposers either being fair-minded (or altruistic) or because proposers are afraid of having low offers rejected (strategic) (Camerer & Thaler, 1995). The dictator game could help in eliciting the mechanism at play as it removes the responder's ability to reject offers. However, if dictator offers are much lower than proposer offers in the ultimatum game, but positive, then it shows that proposers are being both strategic

(offering more to avoid rejection) and altruistic (Camerer and Thaler, 1995). In our data from the behavioural games, we find that on average, proposers are offering positive but lower amounts in the dictator game compared to the ultimatum game, indicating that they are being both altruistic and strategic in their offerings. To disentangle the two mechanisms and to test whether results from the ultimatum game could be signaling other-regarding preferences instead of the relative bargaining power between the spouses, we conduct two additional sets of analyses.

First, we generate a new variable by calculating the difference between the amount allocated to spouse in the ultimatum game and the amount allocated to spouse in the dictator game. This new variable therefore removes other regarding preference and is able to estimate the additional amount that player 1 might have allocated in the ultimatum game due to the fear of rejection of the proposed allocation by player 2. If the difference between the amount allocated across the two games is positive, then it could be inferred that the individual is allocating a higher amount in the ultimatum game due to the fear of rejection of the proposed division from their spouse, which will result in none of the players earning any money from the game. Therefore, the fear of rejection, which is a signal of lower bargaining power could be overriding the tendency for other-regarding preference.

In Table A. 10 in the Appendix, we test this hypothesis by running a Tobit regression with the new dependent variable that captures the strategic motivation for allocating money on long-term access to microcredit as the key explanatory variable. Columns A and B present the regression results for husbands of female microcredit clients and female microcredit clients, respectively. We find that husbands of female long-term microcredit clients allocate ₹ 20 more to their spouses compared with husbands of new clients. This result is significant at p-value<0.1 level. For the female sample, we find that long-term female clients allocate ₹ 29 more to their spouses compared with new female clients. This result is significant at p-value<0.001. This suggests that for both the long-term female clients of microcredit (compared to new female clients) and spouses of long-term female clients (compared to spouses of new female clients), the primary driver for allocating a higher amount in the ultimatum game compared to the dictator game is the fear of rejection of the proposed allocation due to lower bargaining power, rather than an other-regarding preference for their spouse. However, both the magnitude of the result and the level of significance are higher for long-term female clients.

Next, we conduct a regression analysis to test whether long-term access to microcredit had any impact on other-regarding preferences of microcredit clients and their spouses. We run these regressions separately for both female microcredit clients and their spouses (Table A. 11 in the Appendix) with the amount allocated in the dictator game as the outcome variable and long-term access to microcredit as the key explanatory variable. We find that there is no statistically significant difference in the amount allocated to spouse in the dictator game across the two groups- long-term female clients and new clients. The result remains the same when we run the analysis for the male sample. This indicates that couples who have long-term access to microcredit are no more likely to demonstrate other-regarding preferences compared to couples who are new clients or microcredit.

4.2.2 Acceptable Minimum Amount

Our second outcome variable for analysis is the acceptable minimum amount where player 2 subjects are asked the minimum amount, they would be willing to accept from their spouse. The coefficient of interest is the one that corresponds to the variable 'long-term clients' in our models. Similar to before, we use a Tobit regression for our analysis. Table 4 shows the results for the husbands of female clients and the female client samples[14]. For each sample, we have two columns comprising a model with no controls (Columns (1) and (3)), and Demographic, BMI, and Behavioural controls (Columns (2) and (4)), respectively. The controls are the same as used in the Amount Allocated to Spouse models in the previous subsection.

From Table 4, we find that the husbands of long-term female clients, on average, accepted a 22.5 to 28.6% higher minimum amount, on average, than the husbands of newer female customers. As shown in column (2), the average spouse of the long-term client group accepted ₹44.76 (USD 0.54) higher minimum amounts than the spouses of the new client group. The effect in column (1) may be interpreted in the same way. These effects are highly statistically significant at p-value<0.05 level for Column (1) and p-value<0.01 level for Column (2). In contrast, the long-term female clients accepted a –0.12 to –3.45% higher minimum amount, on average, from their spouses than the newer female clients although, these effects are not statistically significant. Thus, our results suggest that husbands of the long-term female clients have higher bargaining power in the household as they are, on average willing to accept a higher minimum amount from their spouses compared to husbands of new clients. This finding is in line with (Balasubramanian, 2013), where the author suggests that women are often forced to part ways with microcredit funds upon their husband's instruction, which limits their control over the use of loans. This may lead to the woman being worse off after getting microcredit since a default on her husband's part would now be reflected as a reduction in her credibility in the credit market. Research also highlights the increase in debt distress among female microfinance borrowers who largely bear the social and financial cost of repayment and are responsible for juggling debt from various sources (Guerin, 2014), potentially leaving them worse off due to sustained access to microcredit.

Finally, looking at the control variables for the husbands of female clients in Column (2), we find that having an additional family member is associated with a ₹21.13 (USD 0.26) decrease, an additional female in the household is associated with a ₹22.91 (USD 0.27) increase, and an additional unit increase in the measure of risk aversion is associated with a ₹1.39 (USD 0.02) decrease in the acceptable minimum amount. For the control variables in the case of the female clients, an additional increase in the measure of risk aversion, signifying an increase in risk preference, is associated with a ₹0.84 (USD 0.01) decrease in the amount allocated to the spouse in Column (4) where we only use for demographic and behavioral controls. To check for the robustness of our results to different functional forms, we run a fractional regression analysis. For this we express the acceptable amount as a fraction of ₹400 (USD 4.85) and use this measure as the dependent variable. The results are similar in sign to our Tobit regression results and are presented in Table A. 15, in the Appendix. We also include cluster fixed effects to control for possible unobserved time-invariant differences and find no qualitative change in our results[15].

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[14] See Table A. 13 in the Appendix for the results of the Pooled Sample regression.
[15] See Table A. 14 in the Appendix

Table 4: Tobit regression for IHBP Outcome 2: Acceptable Minimum Amount in Ultimatum Game

	Husbands of female clients		Female clients	
	(1)	(2)	(3)	(4)
Long-term clients	35.280**	44.759***	-0.226	-6.392
	(14.995)	(14.210)	(14.567)	(14.187)
Hindu religion	-	33.892	-	-
		(32.199)		
Caste (Base category – General)				
Scheduled Caste	-	-1.997	-	3.560
		(17.213)		(15.961)
Other Backward Castes	-	14.954	-	25.062
		(20.731)		(18.703)
Family size	-	-21.130**	-	4.342
		(9.753)		(11.918)
Education (Base category - No formal schooling)				
Class 1-5	-	-15.864	-	-1.264
		(36.610)		(34.315)
Class 6-9	-	-9.105	-	16.087
		(16.198)		(16.230)
Class 10-12	-	-3.451	-	-22.698
		(24.884)		(25.792)
Vocational Training, Graduation or Post Graduation	-	-80.069	-	16.858
		(49.246)		(74.617)
Years since marriage	-	-1.201	-	0.683
		(1.034)		(1.295)
Age difference of spouses	-	-0.531	-	3.756
		(3.194)		(2.459)
No. of females in HH	-	22.914*	-	-4.618
		(12.837)		(13.191)
Total HH income (in ₹)	-	0.001	-	0.0002
		(0.001)		(0.001)
HH land holding (in sq. ft.)	-	0.0001	-	0.0001
		(0.0001)		(0.0002)
Number of outstanding loans of the household	-	-9.372	-	12.818*
		(6.672)		(7.580)
BMI	-	2.594	-	-3.278
		(4.045)		(2.537)
Risk attitude	-	-1.389***	-	-0.835*
		(0.401)		(0.450)
Constant	149.942***	160.448	184.534***	202.665**
	(12.397)	(105.110)	(10.924)	(97.083)
New Customer Mean	156	156	185	185
Observations	192	192	168	167
Pseudo R2	0.003	0.014	0.0000001	0.013
Demographic and Behavioral controls	No	Yes	No	Yes

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1
The coefficient on Religion cannot be calculated as there are only Hindu men in the population with a non-missing value for the amount allocated to spouse variable.
This table consists of results of regressing the Amount Allocated to spouse on customer type, by gender using Tobit. The Column (1) and (3) have no controls, (2) and (4) have demographic and behavioral controls , such as religion, caste, family size, education, years passed since marriage of the customer, age difference of the spouses, number of females in

the household, total monthly household income, the landholding of the household, number of outstanding loans by the household, BMI, altruism and risk attitude of the customer.

4.2.3 Testing our Theory of Change: Does IHBP explain women's empowerment?

To test our theory of IHBP being a significant factor in explaining women's empowerment across the broader dimensions of women's life, we deploy an OLS estimation strategy with the 2 behavioural outcomes as the explanatory variables (amount allocated to spouse; acceptable minimum amount) and the 4 women empowerment indices as the dependent variables (DMI, ARI, GPI, WEI). We run separate regressions for each dependent and explanatory variable along with the standard set of demographic and behavioural controls added to the regression model. Since a lower amount allocated to spouse and a higher minimum acceptable amount is associated with higher bargaining power (as described previously), we hypothesise amount allocated to the spouse to be negatively correlated and the minimum acceptable amount to be positively correlated with the four women empowerment indices, for our Theory of Change to hold.

Results from our regression analysis are presented in Table 5. In line with our theory, we find that the coefficient on Amount Allocated to Spouse is negative and statistically significant at 10% for DMI (-0.255), i.e., a 1% increase in the amount allocated to spouse is associated with a 0.255 unit decrease in DMI (Table 5). Moreover, though the coefficients of all the other indices are statistically insignificant, they are also negative. This implies that women's bargaining power measured through Amount Allocated to Spouse weakly explains dimensions of women's empowerment.

Next, we move to examine the relationship between acceptable minimum amount and women empowerment indices (
Table 6) and find a positive relationship between the two, in line with our theory. Here the coefficients on acceptable minimum amount are statistically significant for ARI, GPI, and WEI both without controls and with behavioural and demographic controls at 1%, 1%, and 10% respectively. This implies that women's bargaining power measured through acceptable minimum amount significantly explains dimensions of women's empowerment pertaining to women's access to resources, her attitude relating to gender norms, and her overall empowerment. Therefore, the outcome variable 'Acceptable Minimum Amount' holds a larger explanatory power compared to 'Amount Allocated to Spouse' in determining women empowerment.

Table 5: Fractional regressions to check if Intra-Household Bargaining Power measured through Amount Allocated to Spouse predicts women empowerment.

	Decision-Making Index		Access to Resource Index		Gender Perceptions Index		Women-empowerment Index	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Amount Allocated to Spouse	-0.156	-0.255*	0.055	-0.023	0.018	-0.062	-0.104	-0.196
	(0.140)	(0.136)	(0.079)	(0.082)	(0.131)	(0.129)	(0.139)	(0.133)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Hindu Religion	-	-1.714***	-	-0.018	-	-0.115	-	-0.045
		(0.183)		(0.034)		(0.089)		(0.074)
Caste (Base category - General)								
Scheduled Caste	-	-0.070	-	-0.007	-	-0.038	-	-0.087*
		(0.045)		(0.022)		(0.048)		(0.045)
Other Backward Castes	-	-0.001	-	0.028	-	0.012	-	-0.037
		(0.045)		(0.027)		(0.053)		(0.046)
Family size	-	0.010	-	-0.007	-	0.031	-	0.021
		(0.024)		(0.013)		(0.026)		(0.024)
Education (Base category - No formal education)								
Class 1-5	-	0.077	-	-0.050	-	0.048	-	0.057
		(0.061)		(0.031)		(0.062)		(0.055)
Class 6-9	-	0.131***	-	0.004	-	0.045	-	0.103**
		(0.047)		(0.027)		(0.049)		(0.047)
Class 10-12	-	0.086*	-	0.001	-	0.011	-	0.066
		(0.050)		(0.022)		(0.056)		(0.050)
Vocational Training, Graduation, or Postgraduation	-	0.059	-	-0.029	-	-0.125	-	0.007
		(0.081)		(0.040)		(0.090)		(0.084)
Years since marriage	-	0.002	-	0.000	-	-0.001	-	0.002
		(0.003)		(0.001)		(0.003)		(0.003)
Age difference of spouses	-	-0.007	-	0.000	-	-0.003	-	-0.006
		(0.006)		(0.003)		(0.006)		(0.006)
No. of females in HH	-	-0.054*	-	0.006	-	-0.060*	-	-0.053*
		(0.031)		(0.014)		(0.033)		(0.030)
Total HH income (in ₹)	-	-0.000005	-	-0.000002	-	-0.000005	-	-0.000006
		(0.000002)		(0.000001)		(0.000002)		(0.000002)
HH land holding (in sq. ft.)	-	0.00000049	-	0.00000006	-	0.00000034	-	0.00000033
		(0.00000029)		(0.00000010)		(0.00000026)		(0.00000022)
Number of outstanding loans of the household	-	0.085***	-	0.049***	-	0.097***	-	0.081***
		(0.021)		(0.009)		(0.019)		(0.019)
Risk aversion	-	0.003***	-	0.002***	-	0.003***	-	0.004***
		(0.001)		(0.000)		(0.001)		(0.001)
BMI	-	0.015**	-	0.000	-	0.010	-	0.015**
		(0.007)		(0.004)		(0.007)		(0.006)
Index Mean	0.779	0.779	0.295	0.295	0.616	0.616	0.681	0.681
Observations	192	192	192	192	192	192	192	192
Pseudo R2	0.002	0.137	0.0002	0.021	0.00002	0.081	0.001	0.097
Demographic and Behavioural Controls	No	Yes	No	Yes	No	Yes	No	Yes

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

This table consists of results of regressing the different dimensions of women empowerment (created using the Eigenvalue >1 approach and indices rescaled between 0 and 1) on Amount Allocated to Spouse in the ultimatum game, by using OLS. Columns (1) and (2) correspond to the results of regressing the Decision-Making Index on Amount Allocated to Spouse by Player 1 in the ultimatum game, similarly, Columns (3) and (4) correspond to the results of regressing Access to Resources Index on Amount Allocated to Spouse by Player 1 in the ultimatum game, Columns (5) and (6) correspond to the results of

regressing Gender Perceptions Index on Amount Allocated to Spouse by Player 1 in the ultimatum game, and Columns (7) and (8) correspond to the results of regressing Women-Empowerment Index on Amount Allocated to Spouse by Player 1 in the ultimatum game. Columns (1), (3), (5), and (7) have no controls, Columns (2), (4), (6), and (8) show results with demographic and behavioral controls, such as religion, caste, family size, education, years passed since marriage of the customer, age difference of the spouses, number of females in the household, total monthly household income, the landholding of the household, number of outstanding loans by the household, BMI, and risk aversion of the customer.

Table 6: Fractional regressions to check if Intra-household bargaining power as measured through Acceptable Minimum Amount predicts women empowerment.

	Decision-Making Index		Access to Resource Index		Gender Perceptions Index		Women-empowerment Index	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Acceptable Minimum Amount	0.153	0.137	0.146***	0.133***	0.265***	0.220***	0.155*	0.157*
	(0.093)	(0.097)	(0.042)	(0.049)	(0.088)	(0.085)	(0.092)	(0.093)
Hindu Religion	-	0.115	-	-0.123***	-	-0.030***	-	0.040
		(0.240)		(0.003)		(0.001)		(0.229)
Caste (Base category - General)								
Scheduled Caste	-	0.004	-	-0.006	-	-0.069	-	-0.016
		(0.054)		(0.024)		(0.049)		(0.054)
Other Backward Castes	-	-0.025	-	0.014	-	-0.042	-	-0.042
		(0.061)		(0.029)		(0.059)		(0.062)
Family size	-	-0.028	-	0.006	-	-0.031	-	-0.026
		(0.037)		(0.012)		(0.033)		(0.036)
Education (Base category - No formal education)								
Class 1-5	-	0.100	-	-0.015	-	0.131**	-	0.113
		(0.072)		(0.033)		(0.065)		(0.071)
Class 6-9	-	-0.015	-	-0.008	-	0.041	-	-0.014
		(0.058)		(0.026)		(0.058)		(0.058)
Class 10-12	-	0.053	-	0.003	-	0.039	-	0.046
		(0.062)		(0.028)		(0.063)		(0.067)
Vocational Training, Graduation, or Postgraduation	-	-0.130	-	-0.049	-	-0.122	-	-0.151
		(0.126)		(0.050)		(0.122)		(0.123)
Years since marriage	-	0.002	-	-0.000	-	0.003	-	0.003
		(0.004)		(0.001)		(0.004)		(0.004)
Age difference of spouses	-	-0.008	-	-0.004	-	-0.005	-	-0.008
		(0.006)		(0.003)		(0.006)		(0.006)
No. of females in HH	-	-0.014	-	-0.010	-	-0.015	-	-0.014
		(0.037)		(0.014)		(0.036)		(0.037)
Total HH income (in ₹)	-	-0.0000006	-	-0.0000021	-	-0.0000013	-	-0.0000014
		(0.000001)		(0.000002)		(0.000002)		(0.000002)
HH land holding (in sq. ft.)	-	-0.000000597	-	0.000000001	-	-0.000000440	-	-0.000000668
		(0.0000006)		(0.0000003)		(0.0000006)		(0.0000006)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Number of outstanding loans of the household	-	0.064**	-	0.027**	-	0.079***	-	0.064**
		(0.030)		(0.012)		(0.028)		(0.028)
Risk aversion	-	0.003**	-	0.001	-	0.001	-	0.003**
		(0.001)		(0.001)		(0.001)		(0.001)
BMI	-	-0.012**	-	-0.002	-	-0.003	-	-0.008
		(0.005)		(0.003)		(0.005)		(0.005)
New Client Mean	0.779	0.779	0.295	0.295	0.616	0.616	0.681	0.681
Observations	168	168	168	168	168	168	168	168
Pseudo R2	0.005	0.071	0.005	0.015	0.011	0.059	0.004	0.058
Demographic and Behavioural Controls	No	Yes	No	Yes	No	Yes	No	Yes

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

This table consists of results of regressing the different dimensions of women empowerment (created using the Eigenvalue >1 approach and indices rescaled between 0 and 1) on Acceptable Minimum Amount by Player 2 in the ultimatum game, by using OLS. The Columns (1) and (2) correspond to the results of regressing the Decision-Making Index on Acceptable Minimum Amount by Player 2 in the ultimatum game, similarly, Columns (3) and (4) correspond to the results of regressing Access to Resources Index on Acceptable Minimum Amount by Player 2 in the ultimatum game, Columns (5) and (6) correspond to the results of regressing Gender Perceptions Index on Acceptable Minimum Amount by Player 2 in the ultimatum game, and Columns (7) and (8) correspond to the results of regressing Women-Empowerment Index on Amount Allocated to Spouse in the ultimatum game. Columns (1), (3), (5), and (7) have no controls, Columns (2), (4), (6), and (8) show results with demographic and behavioral controls, such as religion, caste, family size, education, years passed since marriage of the customer, age difference of the spouses, number of females in the household, total monthly household income, the landholding of the household, number of outstanding loans by the household, BMI, and risk aversion of the customer.

4.3 Multi-dimensional Poverty Index

In this section, we regress our measures of MPI on customer type and other controls to determine the effect of micro-credit loans on poverty. There are two dependent variables in this analysis. The dependent variables are MPI deprivation score, and Poor at 0.33 cut-off, as described in section 3.2.3. These regressions are run at the household level.

4.3.1 MPI Deprivation Score

As per construction, a higher MPI Deprivation Score corresponds to higher poverty. Therefore, a negative coefficient on long-term microfinance clients suggests that customers with longer exposure to micro-credit loans are less poor than newer customers who have relatively shorter exposure to microfinance loans. Since we run a fractional logistic regression model for this analysis, because our MPI deprivation score is a fraction, we report the marginals in Table 7, as the usual regression coefficients are difficult to interpret. Table 7 shows that the coefficients on long-term clients in both models (Column (1) with no controls, and Column (2) with demographic and behavioral controls), are negative, although not statistically significant. This implies that long-term clients of micro-credit are not significantly better off than newer customers when it comes to multidimensional poverty.

The control variables reveal that higher education, the number of females, and being a Hindu are associated with lesser poverty levels, whereas more outstanding loans are associated with higher poverty levels.

Table 7: Fractional logit regression for MPI deprivation score

	(1)	(2)
Long-term clients	-0.015	-0.015
	(0.014)	(0.013)
Hindu religion	-	-0.131***
		(0.019)
Caste (Base category - General)		
Scheduled Caste	-	0.045***
		(0.017)
Other Backward Castes	-	0.068***
		(0.020)
Family size	-	0.014
		(0.009)
Education	-	-0.007***
		(0.002)
Years since marriage	-	0.0003
		(0.001)
Age difference of spouses	-	0.001
		(0.002)
No. of females in HH	-	-0.024**
		(0.011)
Total HH income (in ₹)	-	-0.000002
		(0.000001)
HH land holding (in sq. ft.)	-	0.0000003
		(0.0000001)
Number of outstanding loans of the household	-	0.024***
		(0.006)
New Customer Mean	0.314	0.314
Observations	360	357
Pseudo R2	0.0002	0.01
Demographic and Behavioral controls	No	Yes
Cluster Fixed Effects	No	No

Marginal coefficients reported in the table
Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1
This table consists of results of regressing the Amount Allocated to spouse on customer type using Tobit. The Column (1) has no controls, (2) has demographic and behavioral controls, such as religion, caste, family size, education, years passed since marriage of the customer, age difference of the spouses, number of females in the household, total monthly household income, the landholding of the household, and number of outstanding loans by the household, and Column (3) has demographic and behavioral controls, along with cluster fixed effects.

4.3.2 Poor at 0.33 cut-off

In this section, following the MPI literature, we put a cut-off of 0.33 on the MPI deprivation score and call any household above this cut-off as poor, and any household below it as non-poor. Thus, Poor at 0.33 cut-off is a binary variable and takes the value 1 when the household is classified as poor, and we employ a logistic regression method for this analysis. Once again, we report marginals in Table 8, as the usual coefficients are difficult to interpret. Table 8 shows that the coefficients on long-term clients in both models (Column (1) with no controls, and Column (2) with demographic and behavioral controls), are negative, although not statistically significant. This again implies that long-term clients of micro-credit are not significantly better off than newer customers when it comes to multidimensional poverty.

The control variables reveal that higher education is associated with lower poverty levels, whereas being Scheduled Caste or Other Backward Caste or having outstanding loans are associated with higher poverty levels.

In the next section, we analyze potential factors that could explain why long-term access to microcredit fails to produce improvements in a household's poverty status. It must be noted however that these factors could also explain the lack of positive effect of microcredit on women's IHBP. Since it is difficult to disentangle the role of each factor in influencing the two outcome variables in question- women's empowerment and multi-dimensional poverty, we present these results together in the sections below. These factors pertain to women's likelihood of being self-employed, being engaged in paid work, time-use in income-generating activity, and influence over borrowing decisions.

Table 8: Logit regression for poor at 0.33 cut-off

	(1)	(2)
Long-term clients	-0.039	-0.022
	(0.052)	(0.049)
Caste (Base category – General)		
Scheduled Caste	-	0.147**
		(0.062)
Other Backward Castes	-	0.264***
		(0.072)
Family size	-	0.029
		(0.035)
Education	-	-0.025***
		(0.008)
Years since marriage	-	0.001
		(0.004)
Age difference of spouses	-	0.0124
		(0.008)
No. of females in HH	-	-0.055
		(0.039)
Total HH income (in ₹)	-	-0.000007
		(0.000005)
HH land holding (in sq. ft.)	-	0.0000008
		(0.0000005)
Number of outstanding loans of the household	-	0.100***
		(0.025)
New Customer Mean	0.439	0.439
Observations	360	360
Pseudo R2	0.001	0.139
Demographic and Behavioral controls	No	Yes
Cluster Fixed Effects	No	No

Marginal coefficients reported in the table
Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1
This table consists of results of regressing the Amount Allocated to spouse on customer type using Tobit. The Column (1) has no controls, (2) has demographic and behavioral controls, caste, family size, female's education, years passed since marriage of the customer, age difference of the spouses, number of females in the household, total monthly household income, the landholding of the household, and number of outstanding loans by the household, and Column (3) has demographic and behavioral controls, along with cluster fixed effects. The Hindu religion variable is dropped as it perfectly predicts being poor.

4.3.3 Women's likelihood of being self-employed and engaged in paid work

In this section, we examine differences in women's likelihood of being self-employed and being involved in paid work across the two groups- long-term and new clients of microcredit. We hypothesise that long-term access to microcredit will increase women's likelihood of being self-employed and their engagement in paid work.

We first examine the differences in women's likelihood of being self-employed across the two groups- long-term and new clients of microcredit. This data is obtained from the member-level-household demographic data that records the employment status of each household member. We apply a logit regression model given the binary nature of this variable (1 if the woman is self-employed and 0 otherwise). Table 9 presents the regression results from this analysis (both with and without demographic and behavioural control). We report the marginals for easier interpretation of results. Across the two columns in Table 9, we find that although the coefficient for the long-term client group is negative, it is not statistically significant. This implies that there is no significant difference in women's likelihood of being self-employed between the long-term and new client groups. Our data on loan use indicates that 95% of microfinance loans are used for various categories of household expenses (such as home loans, health expenditures, emergencies, and other life-cycle events such as marriage, birth, and funeral expenses) and only 5% of loans are being used for business purposes. This directly explains the lack of positive effect of microcredit on being self-employed.

We next move to examining differences in engagement with paid work for female customers of microcredit across the two groups- long-term and new client groups. This data is obtained from the question- 'are you engaged in paid work?' administered to female customers of microcredit in our sample. We apply a logit regression model given the binary nature of this variable.

	(1)	(2)
Long-term Clients	-0.011	-0.028
	(0.036)	(0.033)
Hindu Religion	-	-0.341***
		(0.110)
Caste (Base category - General)		
Scheduled Caste	-	-0.096*
		(0.057)
Other Backward Castes	-	-0.090
		(0.063)
Family size	-	0.057**
		(0.022)
Education (Base category - No formal education)		
Class 1-5	-	-0.011
		(0.042)
Class 6-9	-	0.100**

	(1)	(2)
		(0.046)
Class 10-12	-	0.154***
		(0.053)
Vocational Training, Graduation, or Postgraduation	-	0.059
		(0.086)
Years since marriage	-	-0.000
		(0.002)
Age difference of spouses	-	0.001
		(0.006)
No. of females in HH	-	-0.051*
		(0.030)
Total HH income (in ₹)	-	0.000002
		(0.0000009)
HH land holding (in sq. ft.)	-	0.0000005
		(0.0000002)
Number of outstanding loans of the household	-	-0.051***
		(0.017)
BMI	-	-0.004
		(0.006)
Risk aversion	-	-0.000
		(0.001)
New Client Mean	0.115	0.115
Observations	303	303
Pseudo R2	0.0005	0.188
Demographic and Behavioural Controls	No	Yes

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

This table consists of marginals from results of regressing self-employed women on customer type by using Logit. The Column (1) has no controls and Column (2) has demographic and behavioral controls, such as religion, caste, family size, education, years passed since marriage of the customer, age difference of the spouses, number of females in the household, total monthly household income, the landholding of the household, number of outstanding loans by the household, BMI, and risk aversion of the customer.

Table 10 presents the regression results from this analysis (both with and without demographic and behavioural controls). Here too, the Table reports the marginal effects. Across the two columns in

	(1)	(2)
Long-term Clients	-0.011	-0.028

	(0.036)	(0.033)
Hindu Religion	-	-0.341***
		(0.110)
Caste (Base category - General)		
Scheduled Caste	-	-0.096*
		(0.057)
Other Backward Castes	-	-0.090
		(0.063)
Family size	-	0.057**
		(0.022)
Education (Base category - No formal education)		
Class 1-5	-	-0.011
		(0.042)
Class 6-9	-	0.100**
		(0.046)
Class 10-12	-	0.154***
		(0.053)
Vocational Training, Graduation, or Postgraduation	-	0.059
		(0.086)
Years since marriage	-	-0.000
		(0.002)
Age difference of spouses	-	0.001
		(0.006)
No. of females in HH	-	-0.051*
		(0.030)
Total HH income (in ₹)	-	0.000002
		(0.0000009)
HH land holding (in sq. ft.)	-	0.0000005
		(0.0000002)
Number of outstanding loans of the household	-	-0.051***
		(0.017)
BMI	-	-0.004
		(0.006)
Risk aversion	-	-0.000
		(0.001)
New Client Mean	0.115	0.115
Observations	303	303
Pseudo R2	0.0005	0.188
Demographic and Behavioural Controls	No	Yes

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

This table consists of marginals from results of regressing self-employed women on customer type by using Logit. The Column (1) has no controls and Column (2) has demographic and behavioral controls, such as religion, caste, family size, education, years passed since marriage of the customer, age difference of the spouses, number of females in the household, total monthly household income, the landholding of the household, number of outstanding loans by the household, BMI, and risk aversion of the customer.

Table 10, although the coefficient for the long-term customer group is positive, it is not statistically significant. This implies that there is no significant difference in women's likelihood of being engaged in paid work between the long-term and new client groups.

For robustness checks, we also run the same regressions on whether the woman is self-employed and whether she is involved in paid work with cluster-fixed effects (Table A. 22 and Table A. 24 respectively) and OLS regressions on the same set of dependent variables (Table A. 23 and Table A. 25 respectively). We find similar results in all these tables.

Table 9: Logit regression for whether a female is self-employed.

	(1)	(2)
Long-term Clients	-0.011	-0.028
	(0.036)	(0.033)
Hindu Religion	-	-0.341***
		(0.110)
Caste (Base category - General)		
Scheduled Caste	-	-0.096*
		(0.057)
Other Backward Castes	-	-0.090
		(0.063)
Family size	-	0.057**
		(0.022)
Education (Base category - No formal education)		
Class 1-5	-	-0.011
		(0.042)
Class 6-9	-	0.100**
		(0.046)
Class 10-12	-	0.154***
		(0.053)
Vocational Training, Graduation, or Postgraduation	-	0.059

		(0.086)
Years since marriage	-	-0.000
		(0.002)
Age difference of spouses	-	0.001
		(0.006)
No. of females in HH	-	-0.051*
		(0.030)
Total HH income (in ₹)	-	0.000002
		(0.0000009)
HH land holding (in sq. ft.)	-	0.0000005
		(0.0000002)
Number of outstanding loans of the household	-	-0.051***
		(0.017)
BMI	-	-0.004
		(0.006)
Risk aversion	-	-0.000
		(0.001)
New Client Mean	0.115	0.115
Observations	303	303
Pseudo R2	0.0005	0.188
Demographic and Behavioural Controls	No	Yes

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

This table consists of marginals from results of regressing self-employed women on customer type by using Logit. The Column (1) has no controls and Column (2) has demographic and behavioral controls, such as religion, caste, family size, education, years passed since marriage of the customer, age difference of the spouses, number of females in the household, total monthly household income, the landholding of the household, number of outstanding loans by the household, BMI, and risk aversion of the customer.

Table 10: Logit regression for whether a woman is involved in paid work.

	(1)	(2)
Long-term Clients	0.033	0.043
	(0.030)	(0.029)
Religion (Base category - Muslim)		
Caste (Base category - General)		
Scheduled Caste	-	0.102**
		(0.048)

	(1)	(2)
Other Backward Castes	-	0.129**
		(0.051)
Family size	-	0.008
		(0.019)
Education (Base category - No formal education)		
Class 1-5	-	-0.110**
		(0.053)
Class 6-9	-	-0.044
		(0.035)
Class 10-12	-	-0.090**
		(0.044)
Vocational Training, Graduation, or Postgraduation	-	-0.050
		(0.062)
Years since marriage	-	0.002
		(0.002)
Age difference of spouses	-	-0.001
		(0.005)
No. of females in HH	-	0.012
		(0.018)
Total HH income (in ₹)	-	-0.000003
		(0.0000009)
HH land holding (in sq. ft.)	-	-0.0000003
		(0.00000021)
Number of outstanding loans of the household	-	0.016
		(0.012)
BMI	-	-0.004
		(0.004)
Risk aversion	-	0.001
		(0.001)
New Client Mean	0.894	0.894
Observations	360	358
Pseudo R2	0.006	0.201
Demographic and Behavioural Controls	No	Yes

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

This table consists of marginals from results of regressing whether a woman is employed in paid work on customer type by using Logit. Column (1) has no controls and Column (2) has demographic and behavioral controls, such as religion, caste, family size, education, years passed since marriage of the customer, age difference of the spouses, number of females in the household, total monthly household income, the landholding of the household, number of outstanding loans by the household, BMI, and risk aversion of the customer. Some observations have been dropped because a few variables were predicting success perfectly such as religion and some cluster categories.

4.3.4 Women's time-use

Does long-term, sustained access to microcredit have an impact on the way household members spend their time? In line with our theory, we hypothesise long-term customers of microcredit to spend more time in income generating activity (such as starting or expanding a business, working as wage labourer, etc.) because of access to microcredit. We answer this question by analysing the time-use data that we collect from the household couple (i.e., we survey both head of household and his/her spouse on their time-use during the 24-hour period). We apply a Tobit regression model on the four variables that capture the time-use patterns of both the husband and wife separately. The four variables are- time spent on household chores, time spent taking care of family members, time spent in income generation activities, and time spent on leisure. Table 11 and Table 12 present results for female time-use (both with and without controls). As shown in Columns 2 and 4 of Table 12, female members who belong to the long-term client group spend 1.004 hours (60 minutes) more on income-generating activities and 0.532 hours (32 minutes) less on leisure activities (both significant at 1% level) compared to female members in new customer group. Overall, these results indicate a significant shift in the way women spend their time as a result of long-term access to microcredit. We also conducted the same analysis for husbands of long-term clients, results of which can be found in the Appendix (See Table A. 20 and Table A. 21 in the Appendix) and also on pooled data, results of which can be found in Table A. 18 and Table A. 19 in the Appendix.

Table 11: Tobit regressions for Time-use: Household chores and taking care of family (Female)

	Household Chores		Taking Care of Family	
	(1)	(2)	(3)	(4)
Long-term Clients	-0.264	-0.220	-0.278	-0.188
	(0.162)	(0.150)	(0.192)	(0.193)
Hindu Religion	-	1.318***	-	0.756**
		(0.270)		(0.319)
Caste (Base category - General)				
Scheduled Caste	-	-0.349*	-	-0.160
		(0.208)		(0.279)
Other Backward Castes	-	-0.806***	-	-0.230
		(0.238)		(0.306)
Family size	-	0.048	-	0.073
		(0.106)		(0.141)
Education (Base category - No formal education)				
Class 1-5	-	0.264	-	-0.179
		(0.252)		(0.290)

	(1)	(2)	(3)	(4)
Class 6-9	-	-0.148	-	-0.402*
		(0.186)		(0.235)
Class 10-12	-	-0.056	-	0.311
		(0.214)		(0.265)
Vocational Training, Graduation, or Postgraduation	-	-0.043	-	-0.146
		(0.461)		(0.567)
Years since marriage	-	-0.002	-	-0.022
		(0.012)		(0.015)
Age difference of spouses	-	-0.005	-	0.000
		(0.027)		(0.029)
No. of females in HH	-	-0.089	-	0.107
		(0.121)		(0.133)
Total HH income (in ₹)	-	0.000011	-	0.00002
		(0.000009)		(0.000011)
HH land holding (in sq. ft.)	-	0.0000009	-	0.0000012
		(0.000002)		(0.000002)
Number of outstanding loans of the household	-	-0.329***	-	-0.116
		(0.073)		(0.089)
BMI	-	0.082***	-	0.106***
		(0.023)		(0.030)
Risk aversion	-	0.004	-	0.006
		(0.004)		(0.006)
Constant	4.858***	2.244***	3.852***	0.435
	(0.108)	(0.789)	(0.135)	(1.055)
New Client Mean	4.858	4.858	3.867	3.867
Observations	360	360	360	360
Pseudo R2	0.002	0.051	0.001	0.033
Demographic and Behavioural Controls	No	Yes	No	Yes

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

This table consists of results of regressing the time spent by female respondents on household chores and taking care of family members on customer type by using Tobit. The Columns (1) and (2) correspond to the results of regressing Household chores on the type of customer, similarly, Columns (4) and (5), (6) correspond to the results of regressing Taking care of family members on customer type. Columns (1) and (3) have no controls, Columns (2) and (4) have demographic and behavioral controls, such as religion, caste, family size, education, years passed since marriage of the customer, age difference of the spouses, number of females in the household, total monthly household income, the landholding of the household, number of outstanding loans by the household, BMI, and risk aversion of the customer.

Table 12: Tobit regression results for time-use: Income generating activities and leisure (Females)

	Income Generating Activities		Leisure	
	(1)	(2)	(3)	(4)
Long-term Clients	1.087***	1.004***	-0.500***	-0.532***
	(0.330)	(0.311)	(0.179)	(0.172)

Hindu Religion	-	-1.449***	-	-0.676*
		(0.507)		(0.350)
Caste (Base category - General)				
Scheduled Caste	-	1.288***	-	-0.675***
		(0.471)		(0.202)
Other Backward Castes	-	2.253***	-	-1.081***
		(0.510)		(0.243)
Family size	-	-0.024	-	-0.068
		(0.199)		(0.125)
Education (Base category - No formal education)				
Class 1-5	-	-0.869*	-	0.632**
		(0.484)		(0.290)
Class 6-9	-	-0.331	-	0.821***
		(0.371)		(0.255)
Class 10-12	-	-0.785*	-	0.446*
		(0.457)		(0.268)
Vocational Training, Graduation, or Postgraduation	-	-0.075	-	0.151
		(0.982)		(0.345)
Years since marriage	-	0.024	-	0.001
		(0.025)		(0.014)
Age difference of spouses	-	-0.044	-	0.047
		(0.054)		(0.031)
No. of females in HH	-	0.199	-	-0.206
		(0.201)		(0.133)
Total HH income (in ₹)	-	-0.00003	-	-0.000002
		(0.00002)		(0.000008)
HH land holding (in sq. ft.)	-	-0.0000009	-	-0.000002
		(0.0000030)		(0.000002)
Number of outstanding loans of the household	-	0.469***	-	-0.018
		(0.141)		(0.097)
BMI	-	-0.146***	-	-0.047*
		(0.044)		(0.026)
Risk aversion	-	-0.012	-	0.003
		(0.009)		(0.005)
Constant	6.629***	10.247***	8.528***	10.966***
	(0.251)	(1.631)	(0.128)	(0.863)
New Client Mean	6.747	6.747	8.528	8.528
Observations	360	360	360	360
Pseudo R2	0.006	0.046	0.005	0.034
Demographic and Behavioural Controls	No	Yes	No	Yes

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

4.3.5 Women's involvement in borrowing decisions

In this section, we analyze differences in women's involvement in household borrowing decisions across the two groups- long-term clients and new clients. In line with our theory, we hypothesise that the long-term client group will have greater influence over household borrowing decisions compared to the new client group. Table 13 shows results from the logit regression model applied to the two borrowing-related outcome variables- loan amount decision (extracted from the question- who makes decisions about how much your household should borrow?) and Table 14 shows results from the logit regression of loan use decision (extracted from the question- who makes decisions about how the loan should be used?). Column 2 in Table 13 and Table 14 reports the marginal effects with demographic and behavioral control. We find no statistically significant difference in women's influence over borrowing decisions, both in terms of the amount of loan and use of loans, between the two groups. We also run OLS regressions as robustness checks, the results of which can be found in Table A. 26 and Table A. 27.

Table 13: Logit regression for whether a woman makes decisions about loan amount.

	(1)	(2)
Long-term Clients	-0.044	-0.068
	(0.050)	(0.050)
Religion (Base category - Muslim)		
Caste (Base category - General)		
Scheduled Caste	-	0.032
		(0.064)
Other Backward Castes	-	0.064
		(0.072)
Family size	-	-0.007
		(0.035)
Education (Base category - No formal education)		
Class 1-5	-	0.059
		(0.088)
Class 6-9	-	0.133**
		(0.066)
Class 10-12	-	0.142**

	(1)	(2)
		(0.067)
Vocational Training, Graduation, or Postgraduation	-	-0.017
		(0.115)
Years since marriage	-	0.006
		(0.004)
Age difference of spouses	-	-0.009
		(0.007)
No. of females in HH	-	-0.057
		(0.041)
Total HH income (in ₹)	-	-0.000001
		(0.000002)
HH land holding (in sq. ft.)	-	0.00000002
		(0.0000004)
Number of outstanding loans of the household	-	0.104***
		(0.026)
BMI	-	-0.009
		(0.008)
Risk aversion	-	0.004***
		(0.001)
New Client Mean	0.689	0.689
Observations	360	358
Pseudo R2	0.002	0.107
Demographic and Behavioural Controls	No	Yes

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

This table consists of marginals from results of regressing whether the woman makes the borrowing decisions in the household on customer type by using Logit. Column (1) has no controls, (2) has demographic and behavioral controls, such as religion, caste, family size, education, years passed since marriage of the customer, age difference of the spouses, number of females in the household, total monthly household income, the landholding of the household, number of outstanding loans by the household, BMI, and risk aversion of the customer. Some observations have been dropped because a few variables such as religion were predicting success perfectly.

Table 14: Logit regression for whether a woman makes decisions about loan-use.

	(1)	(2)
Long-term Clients	-0.050	-0.054
	(0.050)	(0.049)
Religion (Base category - Muslim)		
Caste (Base category - General)		
Scheduled Caste	-	0.019

		(0.063)
Other Backward Castes	-	0.100
		(0.069)
Family size	-	-0.008
		(0.034)
Education (Base category - No formal education)		
Class 1-5	-	0.081
		(0.083)
Class 6-9	-	0.047
		(0.066)
Class 10-12	-	0.014
		(0.070)
Vocational Training, Graduation, or Postgraduation	-	-0.117
		(0.115)
Years since marriage	-	0.003
		(0.004)
Age difference of spouses	-	-0.009
		(0.007)
No. of females in HH	-	-0.057
		(0.042)
Total HH income (in ₹)	-	-0.000002
		(0.000002)
HH land holding (in sq. ft.)	-	0.0000002
		(0.0000004)
Number of outstanding loans of the household	-	0.102***
		(0.027)
BMI	-	-0.008
		(0.008)
Risk aversion	-	0.004***
		(0.001)
New Client Mean	0.689	0.689
Observations	360	358
Pseudo R2	0.002	0.110
Demographic and Behavioural Controls	No	Yes

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

This table consists of marginals from results of regressing whether the woman makes the decision about how to use the loan in the household on customer type by using Logit. Column (1) has no controls and (2) has demographic and behavioral controls, such as religion, caste, family size, education, years passed since marriage of the customer, age difference of the spouses, number of females in the household, total monthly household income, the landholding of the household, number of outstanding loans by the household, BMI, and risk aversion of the customer. Some observations have been dropped because a few variables such as religion were predicting success perfectly.

Overall, our results indicate that long-term access to microcredit does not improve women's IHBP and consequently does not have any significant impact on women's empowerment measured through women empowerment indices. Although long-term access to microcredit does lead to an increase in women's time spent in income-generation activities, it does not increase their likelihood of being engaged in paid work or being self-employed. Moreover, the increase in women's time spent on income-generation activities does not lead to an improvement in their IHBP or agency. We also find that women's long-term access to microcredit does not lead to an increase in their influence over borrowing decisions. Finally, our study does not find large positive downstream effects of long-term access to microcredit measured through the household's multi-dimensional poverty status. Given these results, the lack of positive evidence of sustained access to microcredit on women's IHBP can be posited as one of the key reasons for the lack of impact of microcredit on women's empowerment and household wellbeing.

5. Conclusion

In this study, we examine the impact of long-term access to microcredit on women's intra-household bargaining power and consequently women's empowerment. Our main objective in this study is to test the theory supporting the claim that microcredit improves women's empowerment and produces positive downstream effects for the household only when there are first-order effects in the form of improved levels of women's intra-household bargaining power. We adopt a quasi-experimental methodology involving a statistical matching technique to causally identify the impact of long-term access to microcredit on women's intra-household bargaining power. In partnership with an India-based financial service provider, we match comparable long-term and new female clients of microcredit in rural India using coarsened exact matching and conduct behavioral experiments with them and their spouses to assess the relative intra-household bargaining power of female microcredit clients. We also administer a large household survey among both the female clients of microcredit and their spouses to elicit information about women's empowerment across multiple dimensions and the household's multi-dimensional poverty status.

We hypothesise that access to credit will increase women's share in and control over household resources via paid work and greater influence over household decisions. Our study shows that long-term access to microcredit does not improve women's intra-household bargaining power and consequently does not have any significant impact on women's empowerment measured through four indices- access to resources, decision-making, gender attitudes, and a composite index combining the three categories. Since results from the ultimatum game can be interpreted as a proxy for both bargaining power and other-regarding preferences, we conduct additional analysis to disentangle the two mechanisms. We find that the amount allocated to spouse in the ultimatum game even after removing the effect of other regarding preference continues to be high and statistically significant for both long-term female clients (compared to new female

clients) and spouses of long-term female clients (compared to spouses of new female client). Further, we find that long-term access to microcredit has no effect on other-regarding preferences of female microcredit clients and their spouses, as household couples with access to long-term microcredit are no more altruistic than the household couple who is a recent customer of microcredit. We also find that women in the long-term client category, i.e., those who have long-term access to microcredit, are no more likely to be self-employed or engage in paid work as compared to women in the new client category, i.e., those who are recent borrowers of microcredit and are in the first loan cycle at the time of our study. However, conditional on being employed, women in the long-term client category spend more time in paid work. Long-term clients also spend less time in household chores and leisure compared to women in the new client category. Moreover, women in the long-term client group do not differ significantly compared to the new client group in terms of their influence over household borrowing decisions, both in terms of loan amount and loan use. Taken together, we argue that the results described above drive the lack of effect of long-term access to microcredit on women's empowerment. Moreover, the study finds no impact on the multi-dimensional poverty status of the long-term client group. Overall, our study does not find large positive downstream effects of long-term access to microcredit. In line with our theory of change, we attribute this to the lack of positive evidence on women's intra-household bargaining power, since household development outcomes (related to health, nutrition, education, etc.) improve significantly when women are in control of household resource allocation. Our results suggest that long-term access to microcredit is not adequate to mitigate sticky gender norms and shift IHBP. The evolution of norms is a complex phenomenon and might not change with a single intervention. Understanding the origins and dynamics of norms is important in designing culturally informed public policies (Schimmelpfennig and Muthukrishna, 2023).

Our results suggest that microcredit's potential to lead to transformative impact both at the household level as well as at the individual level in terms of women's empowerment, at least using conventional metrics, might be overstated. Instead, the impact of microcredit might be best studied in relation to household's ability to manage their finances and smooth consumption (Merfeld & Morduch, 2023). Given that microcredit loans are overwhelmingly used for regular household expenses as opposed to business investments, households typically do not see an increase in income or consumption, or business profits/revenue. However, low-income households value the ability to raise lump sums. Microcredit as a tool allows them to do just that by providing access to a relatively large lump sum that households can choose to use in multiple ways- lending to friends and family, repaying previous debt, household spending across multiple purposes such as weddings, health expenses, school fees, and other miscellaneous expenses, investing through other formal channels, etc. We find in our sample that only 5% of microfinance loans in our dataset are used for income-generating purposes. Interestingly, within this sub-group, we find suggestive evidence of higher bargaining power among long-term clients compared to new clients. We consequently also find a weak but positive effect of long-term access to microcredit on the women empowerment index among those households who use microfinance loans for productive purposes, which aligns with our theory of change.

Three policy implications emerge from our results. First, microcredit alone is not enough to transform women's lives and their households' well-being. A holistic approach that focuses on

enhancing skills, networks, and livelihoods in addition to access to formal finance and social protection can help the poor achieve socioeconomic resilience.[16] "Targeting the Ultra-Poor" (TUP) program based on BRAC's approach found that a one-time boost of capital improves the condition of the poor even a decade later (Banerjee et al., 2021). Similarly, impact evaluations of Government led livelihoods program in India- National Rural Livelihoods Mission- which is also based on a holistic set of interventions, show positive effects on women's decision-making power and households' socio-economic outcomes (Hoffmann et al., 2018; Kochar et al., 2022). Second, since MFIs might not have the capacity and resources to offer microcredit plus services, they could focus on ways in which their product can be made more suitable to match the financial needs and contexts of their clientele. These could take the form of innovation in both product and process design such as flexibility in loan contracts (repayment flexibility, customized loan tenure, amounts, etc.), innovation in modes of loan disbursement and collection mechanisms, etc. This could in turn improve households' ability to manage their finances. Research shows a positive and significant impact on microfinance clients when loans are tailored to the specific needs of various categories of households rather than treating microfinance as one homogeneous product (Cai at el., 2023). Third, government policies that enable access to credit for enterprise creation and expansion can be a useful intervention for women from low-income households, given its potential to impact women's livelihood, well-being, and agency. However, identifying and targeting the right group of women for such an intervention is important as the desire to be self-employed might not be universal.

Finally, our study has four key limitations. First, our study design is set up such that all the respondents in our sample are microcredit customers during the duration of our study. Therefore, the study design allows us to tease out the difference between households who are long-term clients versus those who are first-time customers of our microcredit implementation partner. The study design therefore implicitly makes an assumption that those who are first-time customers of our implementation partner are also first-time borrowers of microcredit in general. This may not be true given the penetration of microcredit in the state of Tamil Nadu, India. According to Sa-dhan's The Bharat Microfinance Report 2023,[17] the district-wise penetration of microfinance loans is more than 50% for most of the districts in Tamil Nadu. Moreover, the district of Thanjavur in Tamil Nadu is one of the 18 districts in India to have a Gross Loan Portfolio of more than 2000 Crores INR. Given this context, it is possible that one of the reasons we do not find any difference in IHBP between the two groups- long-term clients and new client- is because both the groups have had sustained access to microcredit and therefore, are not different from each other in terms of their exposure to microcredit. However, previous literature based on randomized evaluations that have examined the impact of microcredit on women's empowerment using a pure control group (a group that has no access to microcredit) has also found similar results as our study. Therefore, it is unlikely that our results are driven by market saturation in Tamil Nadu.

Second, our study design is based on a quasi-experimental methodology involving a statistical matching technique to causally identify the impact of long-term access to microcredit. The matching is based on administrative data maintained by our implementation partner. However, the dataset is limited to only a small set of observables that describe basic individual and

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[16] BRAC's ultra poor graduation approach is built on four foundational pillars- social protection, livelihoods promotions, financial inclusion and social empowerment- https://www.brac.net/program/wp-content/uploads/2020/02/Graduation-Overview.pdf

[17] https://www.sa-dhan.net/bharat-microfinance-report/

household characteristics. There could be other important household and individual characteristics that might potentially influence the timing of the adoption of microcredit that we are unable to account for in our matching technique, due to lack of data.

Third, our study is largely quantitative in nature and measures the impact of microcredit through a narrowly defined set of quantitative variables. While we explore the role of women's agency and their intra-household bargaining power in producing downstream effects for both the woman and her family, it is possible that there are other contextual factors/mechanisms that determine the way microcredit interacts with existing relationships within the household and between households. How do intra-household dynamics change between household members in terms of household responsibilities, managing social relations/obligations, etc. are not addressed in this study. Moreover, what impact long-term access to microcredit has on the strength and nature of social networks, which could also be an important contextual factor, is left unaddressed in this study. The way social norms will change as a result of microcredit interventions for women cannot be one, consistent, standard story. It will produce an array of effects depending on the woman and her household's context (Guérin, 2023).

Finally, our approach to measuring women's empowerment relies on economics literature which defines women's empowerment in terms of bargaining power, control, and individual agency. However, empowerment as a concept may take multiple forms. Literature from the field of sociology and anthropology alludes to the concept of joint agency, joint action, joint commitments, and being interdependent, connected, and trustworthy as features that symbolize empowerment for poor women (Guérin, 2023; Kusimba, 2018).

The limitations described above form important areas for further research. Future work could be based on qualitative data to identify a broader set of contextual factors as well as understand women's empowerment from the perceptive of women microcredit customers. Further research is also needed to understand the impact of microcredit on households' financial management and financial well-being and finally, its role in shaping interdependencies both within and outside the household.

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APPENDIX

Table A. 1 Dimensions for MPI Analysis.

Dimension	A household is considered 'not-poor'/'not-deprived' if the following conditions are met	Weight (W)
Education (1/3)	All children aged 4 to 6 attending pre-school	(1/12)
	All children aged 7 to 14 attending school	(1/12)
	At least one household member aged 10 to 45 has completed 6 years of schooling	(1/12)
	At least one household member aged over 45 has completed 6 years of schooling	(1/12)
Health (1/3)	Child did not skip a meal in the last month	(1/9)
	Adult did not skip a meal in the last month	(1/9)

	[18]Body Mass Index (BMI) of husband and wife is between 18.5 to 23.7 kg/m^2	(1/9)
	Flooring, walls, and roofing are finished	(1/12)
	Type of toilet is flush, pit or composting toilet	(1/12)
	Type of cooking fuel used is LPG, Electricity or Natural Gas	(1/12)
Standard of living (1/3)	[19]If household has at least two major and two minor assets	(1/12)

Table A. 2 Dependent Variable difference in means by client type and gender.

	Long-term clients	New clients	Difference	p-value
Amount Allocated to Spouse				
Pooled	285.28	272.78	12.5**	0.022
Husbands of female clients	286.42	277.59	8.83	0.256
Female clients	284.34	268.28	16.06**	0.037
Acceptable Minimum Amount				
Pooled	185.56	170.28	15.28	0.111
Husbands of female clients	186.87	156.45	30.42**	0.022
Female clients	183.95	185.06	-1.11	0.936

Table A. 3 Fractional regression results of Decision-Making Index, Access to Resource Index, Gender Perceptions Index, and Women Empowerment Index with cluster fixed effects.

	Decision-Making Index	Access to Resource Index	Gender Perceptions Index	Women Empowerment Index
	(1)	(2)	(3)	(4)
Long-term Clients	-0.007	-0.030**	-0.002	-0.009
	(0.031)	(0.015)	(0.032)	(0.030)
Hindu Religion	-1.834***	-0.033	-0.133**	-0.096
	(0.165)	(0.027)	(0.066)	(0.064)
Caste (Base category - General)				
Scheduled Caste	-0.075*	-0.022	-0.039	-0.066
	(0.041)	(0.018)	(0.037)	(0.042)
Other Backward Castes	-0.087**	-0.025	-0.067	-0.089**
	(0.043)	(0.019)	(0.042)	(0.044)

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[18] BMI classification as per- https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10594458/

[19] The selection of major and minor assets was based on variation in sample characteristics and existing research reports and studies on MPI

	(1)	(2)	(3)	(4)
Family size	-0.006	-0.001	0.008	0.004
	(0.018)	(0.008)	(0.019)	(0.018)
Education (Base category - No formal education)				
Class 1-5	0.080*	-0.017	0.101**	0.075*
	(0.044)	(0.020)	(0.043)	(0.044)
Class 6-9	0.082**	0.016	0.053	0.063
	(0.039)	(0.018)	(0.037)	(0.039)
Class 10-12	0.066*	0.008	0.021	0.050
	(0.040)	(0.017)	(0.042)	(0.042)
Vocational Training, Graduation, or Postgraduation	-0.012	-0.028	-0.102	-0.054
	(0.061)	(0.025)	(0.064)	(0.065)
Years since marriage	0.003	0.001	0.002	0.003
	(0.002)	(0.001)	(0.002)	(0.002)
Age difference of spouses	-0.006	-0.002	-0.004	-0.006
	(0.004)	(0.002)	(0.004)	(0.004)
No. of females in HH	-0.031	0.001	-0.040*	-0.034
	(0.023)	(0.009)	(0.022)	(0.023)
Total HH income (in ₹)	-0.000	-0.000002	-0.000002	-0.000003
	(0.000)	(0.0000010)	(0.0000015)	(0.0000016)
HH land holding (in sq. ft.)	-0.000	-0.00000005	-0.00000014	-0.00000013
	(0.000)	(0.0000001)	(0.0000003)	(0.0000003)
Number of outstanding loans of the household	0.054***	0.018***	0.054***	0.052***
	(0.020)	(0.007)	(0.017)	(0.018)
Risk aversion	0.003***	0.001***	0.002**	0.003***
	(0.001)	(0.000)	(0.001)	(0.001)
BMI	-0.004	-0.000	0.002	-0.001
	(0.004)	(0.002)	(0.004)	(0.004)
New Client Mean	0.779	0.295	0.616	0.681
Observations	360	360	360	360
Pseudo R2	0.104	0.028	0.093	0.080
Cluster fixed effects	Yes	Yes	Yes	Yes

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

This table consists of results of fractional regression of the different dimensions of women empowerment on customer type. In this table, DMI, ARI, GAI, and WEI have been created using the weighted average of only those principal components that have eigenvalues greater than 1 and the indices are rescaled between 0 and 1. The Columns (1), (2), (3), and (4) correspond to the results of regressing the Decision-Making Index on the type of customer, Access to Resources Index on customer type, Gender Perceptions Index on customer type, and Women Empowerment Index on customer type respectively. These columns show results with demographic and behavioral controls, such as religion, caste, family size, education, years passed since marriage of the customer, age difference of the spouses, number of females in the household, total monthly household income, the landholding of the household, number of outstanding loans by the household, BMI, and risk aversion of the customer, along with cluster-fixed effects

Table A. 4 Fractional regression Results for Women-empowerment Index (PCs with 80% variation).

	Women Empowerment Index		
	(1)	(2)	(3)
Long-term Clients	-0.032	-0.026	-0.007
	(0.030)	(0.028)	(0.030)
Hindu Religion	-	-0.108*	-0.088
		(0.058)	(0.061)
Caste (Base category - General)			
Scheduled Caste	-	-0.043	-0.064
		(0.035)	(0.041)
Other Backward Castes	-	-0.015	-0.086**
		(0.040)	(0.044)
Family size	-	0.012	0.007
		(0.019)	(0.018)
Education (Base category - No formal education)			
Class 1-5	-	0.052	0.071*
		(0.046)	(0.043)
Class 6-9	-	0.047	0.061
		(0.038)	(0.039)
Class 10-12	-	0.043	0.047
		(0.040)	(0.041)
Vocational Training, Graduation, or Postgraduation	-	-0.069	-0.055
		(0.074)	(0.065)
Years since marriage	-	0.002	0.003
		(0.002)	(0.002)
Age difference of spouses	-	-0.004	-0.005
		(0.004)	(0.004)
No. of females in HH	-	-0.045**	-0.036
		(0.023)	(0.022)
Total HH income (in ₹)	-	-0.000003	-0.000003
		(0.000002)	(0.000002)
HH land holding (in sq. ft.)	-	-0.00000002	-0.00000013
		(0.0000003)	(0.0000003)
Number of outstanding loans of the household	-	0.075***	0.052***
		(0.016)	(0.017)
Risk aversion	-	0.003***	0.003***
		(0.001)	(0.001)
BMI	-	-0.001	-0.000
		(0.004)	(0.004)
New Client Mean	0.658	0.658	0.658
Observations	360	360	360

Pseudo R2			0.001		0.057		0.073	
Cluster fixed effects			No		No		Yes	

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

This table consists of results of fractional regression of the different dimensions of women empowerment on customer type. In this table, WEI has been created using the weighted average of all the principal components that cumulatively explain at least 80% of the total variation in the data and then indices are rescaled between 0 and 1. Column (1) has no controls, Column (2) has demographic and behavioral controls , such as religion, caste, family size, education, years passed since marriage of the customer, age difference of the spouses, number of females in the household, total monthly household income, the landholding of the household, number of outstanding loans by the household, BMI, and risk aversion of the customer, and Column (3) has demographic and behavioral controls along with cluster fixed effects.

Table A. 5 Fractional regression Results for Decision-Making, Access to resources, and Gender Perceptions Index (PCs with 80% variation).

	Decision-Making Index			Access to Resource Index			Gender Perceptions Index		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Long-term Clients	-0.019	-0.016	-0.012	-0.011	-0.010	-0.017	-0.022	-0.021	-0.010
	(0.025)	(0.024)	(0.028)	(0.017)	(0.016)	(0.016)	(0.025)	(0.023)	(0.025)
Hindu Religion	-	-0.227***	-0.213***	-	-0.086**	-0.063*	-	-0.093*	-0.075
		(0.053)	(0.049)		(0.037)	(0.034)		(0.054)	(0.046)
Caste (Base category - General)									
Scheduled Caste	-	-0.057*	-0.071**	-	0.006	-0.018	-	-0.047	-0.037
		(0.030)	(0.034)		(0.019)	(0.022)		(0.029)	(0.032)
Other Backward Castes	-	-0.041	-0.090**	-	0.049**	-0.021	-	-0.007	-0.057
		(0.033)	(0.038)		(0.023)	(0.022)		(0.033)	(0.035)
Family size	-	0.021	0.016	-	0.004	0.001	-	0.007	0.004
		(0.017)	(0.017)		(0.010)	(0.009)		(0.016)	(0.015)
Education (Base category - No formal education)									
Class 1-5	-	0.040	0.046	-	-0.035	-0.012	-	0.057	0.080**
		(0.038)	(0.037)		(0.028)	(0.024)		(0.037)	(0.035)
Class 6-9	-	0.024	0.021	-	0.003	0.018	-	0.043	0.047
		(0.032)	(0.034)		(0.021)	(0.020)		(0.031)	(0.030)
Class 10-12	-	0.021	0.017	-	0.009	0.014	-	0.018	0.028
		(0.034)	(0.035)		(0.021)	(0.019)		(0.032)	(0.032)
Vocational Training, Graduation, or Postgraduation	-	-0.032	-0.020	-	-0.023	-0.014	-	-0.091	-0.072
		(0.057)	(0.055)		(0.042)	(0.031)		(0.062)	(0.051)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Years since marriage	-	0.001	0.001	-	0.001	0.001	-	0.001	0.002
		(0.002)	(0.002)		(0.001)	(0.001)		(0.002)	(0.002)
Age difference of spouses	-	-0.002	-0.003	-	-0.003	-0.003	-	-0.002	-0.003
		(0.004)	(0.004)		(0.003)	(0.002)		(0.003)	(0.003)
No. of females in HH	-	-0.045**	-0.039**	-	-0.002	0.003	-	-0.031*	-0.026
		(0.020)	(0.019)		(0.012)	(0.010)		(0.019)	(0.018)
Total HH income (in ₹)	-	-0.000002	-0.000002	-	-0.000002	-0.000002	-	-0.000002	-0.000001
		(0.000001)	(0.000001)		(0.000002)	(0.000001)		(0.000001)	(0.000001)
HH land holding (in sq. ft.)	-	-0.00000003	-0.00000015	-	0.00000010	-0.00000005	-	0.00000004	-0.00000013
		(0.0000002)	(0.0000002)		(0.0000001)	(0.0000002)		(0.0000002)	(0.0000002)
Number of outstanding loans of the household	-	0.050***	0.032*	-	0.047***	0.022***	-	0.070***	0.040***
		(0.015)	(0.017)		(0.008)	(0.008)		(0.012)	(0.013)
Risk aversion	-	0.002***	0.002**	-	0.001**	0.001**	-	0.001**	0.001**
		(0.001)	(0.001)		(0.000)	(0.000)		(0.001)	(0.001)
BMI	-	-0.006	-0.006	-	-0.003	-0.001	-	0.002	0.004
		(0.004)	(0.004)		(0.003)	(0.002)		(0.003)	(0.003)
New Client Mean	0.770	0.770	0.770	0.334	0.334	0.334	0.581	0.581	0.581
Observations	360	360	360	360	360	360	360	360	360
Pseudo R2	0.0004	0.042	0.052	0.0001	0.019	0.035	0.0004	0.033	0.051
Cluster fixed effects	No	No	Yes	No	No	Yes	No	No	Yes

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

This table consists of results of fractional regression of the different dimensions of women empowerment on customer type. In this table, DMI, ARI, and GAI have been created using the weighted average of all the principal components that cumulatively explain at least 80% of the total variation in the data and then indices are rescaled between 0 and 1. The Columns (1), (2), and (3) correspond to the results of regressing the Decision-Making Index on the type of customer, similarly, Columns (4), (5), (6) correspond to the results of regressing Access to Resources Index on customer type, and Columns (7), (8), and (9) correspond to the results of regressing Gender Perceptions Index on customer type. Columns (1), (4), and (7) have no controls, Columns (2), (5), and (8) have demographic and behavioral controls, such as religion, caste, family size, education, years passed since marriage of the customer, age difference of the spouses, number of females in the household, total monthly household income, the landholding of the household, number of outstanding loans by the household, BMI, and risk aversion of the customer, and Columns (3), (6), and (9) have demographic and behavioral controls along with cluster fixed effects.

Table A. 6 Fractional regression results for Women-empowerment Index on customer type where one group is new clients, and the other group is very long-term clients (who are in their 8th JLG cycle or above).

	Women Empowerment Index		
	(1)	(2)	(3)
Very Long-term Clients	-0.147***	-0.077	-0.004
	(0.053)	(0.050)	(0.048)
Hindu Religion	-	-0.060	-0.096
		(0.100)	(0.114)
Caste (Base category - General)			

	(1)	(2)	(3)
Scheduled Caste	-	-0.088*	-0.075
		(0.049)	(0.050)
Other Backward Castes	-	-0.066	-0.097*
		(0.053)	(0.055)
Family size	-	0.027	0.022
		(0.024)	(0.024)
Education (Base category - No formal education)			
Class 1-5	-	0.111**	0.110**
		(0.054)	(0.055)
Class 6-9	-	0.030	0.033
		(0.051)	(0.056)
Class 10-12	-	0.088*	0.096*
		(0.048)	(0.051)
Vocational Training, Graduation, or Postgraduation	-	-0.042	-0.008
		(0.086)	(0.081)
Years since marriage	-	0.003	0.004
		(0.003)	(0.003)
Age difference of spouses	-	-0.008	-0.006
		(0.005)	(0.005)
No. of females in HH	-	-0.072**	-0.070**
		(0.028)	(0.029)
Total HH income (in ₹)	-	-0.000003	-0.000004
		(0.0000018)	(0.0000018)
HH land holding (in sq. ft.)	-	0.00000004	0.00000005
		(0.0000004)	(0.0000005)
Number of outstanding loans of the household	-	0.074***	0.064***
		(0.021)	(0.023)
Risk aversion	-	0.003***	0.003***
		(0.001)	(0.001)
BMI	-	0.000	0.001
		(0.005)	(0.005)
New Client Mean	0.681	0.681	0.681
Observations	232	232	232
Pseudo R2	0.012	0.085	0.097
Cluster fixed effects	No	No	Yes

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

This table consists of results of fractional regressing women empowerment index on customer type where only very old clients are used (who were in their 8th JLG cycle or above) along with new clients. In this table, WEI has been created using the weighted average of all the principal components that have eigenvalues greater than 1. Column (1) has no controls, Column (2) has demographic and behavioral controls , such as religion, caste, family size, education, years passed since marriage of the customer, age difference of the spouses, number of females in the household, total monthly household income, the landholding of the household, number of

outstanding loans by the household, BMI, and risk aversion of the customer, and Column (3) has demographic and behavioral controls along with cluster fixed effects.

Table A. 7 Fractional regression results for dimensions of women empowerment such as Decision-making index, Access to Resources Index, and Gender Perceptions Index on customer type, where the two groups are new clients and very long-term clients (who are in their 8th JLG cycle or above).

	Decision-Making Index			Access to Resource Index			Gender Perceptions Index		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Very Long-term Clients	-0.143***	-0.084*	-0.019	-0.085***	-0.050**	-0.011	-0.136***	-0.065	0.036
	(0.050)	(0.046)	(0.042)	(0.021)	(0.020)	(0.023)	(0.051)	(0.046)	(0.046)
Hindu Religion	-	-2.177***	-1.899***	-	-0.048	-0.148***	-	-0.117	-0.241**
		(0.242)	(0.233)		(0.053)	(0.047)		(0.106)	(0.108)
Caste (Base category - General)									
Scheduled Caste	-	-0.088*	-0.093*	-	-0.015	-0.018	-	-0.053	-0.026
		(0.048)	(0.050)		(0.020)	(0.020)		(0.045)	(0.045)
Other Backward Castes	-	-0.055	-0.095*	-	0.017	-0.036	-	-0.039	-0.091*
		(0.051)	(0.052)		(0.025)	(0.022)		(0.052)	(0.055)
Family size	-	0.015	0.008	-	0.011	0.007	-	0.042*	0.038
		(0.024)	(0.024)		(0.011)	(0.010)		(0.024)	(0.023)
Education (Base category - No formal education)									
Class 1-5	-	0.110**	0.112**	-	-0.025	-0.013	-	0.140***	0.144***
		(0.055)	(0.056)		(0.027)	(0.023)		(0.050)	(0.047)
Class 6-9	-	0.021	0.028	-	0.028	0.040*	-	0.039	0.033
		(0.051)	(0.055)		(0.024)	(0.023)		(0.050)	(0.052)
Class 10-12	-	0.084*	0.094*	-	0.034	0.038*	-	0.059	0.068
		(0.047)	(0.049)		(0.021)	(0.020)		(0.050)	(0.050)
Vocational Training, Graduation, or Postgraduation	-	-0.056	-0.025	-	-0.002	0.032	-	-0.099	-0.047
		(0.085)	(0.082)		(0.038)	(0.028)		(0.090)	(0.079)
Years since marriage	-	0.002	0.003	-	0.001	0.002**	-	0.001	0.003
		(0.003)	(0.003)		(0.001)	(0.001)		(0.002)	(0.002)
Age difference of spouses	-	-0.009*	-0.007	-	-0.005**	-0.003	-	-0.008	-0.004
		(0.005)	(0.005)		(0.002)	(0.002)		(0.005)	(0.005)
No. of females in HH	-	-0.065**	-0.060**	-	-0.018	-0.015	-	-0.081***	-0.081***
		(0.029)	(0.029)		(0.013)	(0.012)		(0.028)	(0.027)
Total HH income (in ₹)	-	-0.000002	-0.000002	-	-0.000004	-0.000004	-	-0.000003	-0.000004
		(0.0000018)	(0.0000018)		(0.0000010)	(0.0000010)		(0.0000019)	(0.0000018)
HH land holding (in sq. ft.)	-	0.00000015	0.00000017	-	-0.00000002	-0.00000049	-	0.00000009	-0.00000030
		(0.0000004)	(0.0000005)		(0.0000002)	(0.0000002)		(0.0000005)	(0.0000005)
Number of outstanding loans of the household	-	0.073***	0.066***	-	0.034***	0.015	-	0.090***	0.063***
		(0.021)	(0.023)		(0.011)	(0.011)		(0.020)	(0.019)
Risk aversion	-	0.003***	0.003***	-	0.001***	0.001***	-	0.001*	0.002**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
		(0.001)	(0.001)		(0.000)	(0.000)		(0.001)	(0.001)
BMI	-	-0.003	-0.003	-	-0.003	-0.001	-	0.000	0.002
		(0.005)	(0.005)		(0.003)	(0.003)		(0.004)	(0.004)
New Client Mean	0.779	0.779	0.779	0.295	0.295	0.295	0.616	0.616	0.616
Observations	232	232	232	232	232	232	232	232	232
Pseudo R2	0.016	0.100	0.113	0.006	0.025	0.037	0.010	0.074	0.103
Cluster fixed effects	No	No	Yes	No	No	Yes	No	No	Yes

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

This table consists of fractional results of regressing the different dimensions of women empowerment on customer type where only very clients are used (who were in their 8th JLG loan cycle or above) along with new clients. In this table, DMI, ARI, and GAI have been created using the weighted average of all the principal components that have eigenvalues greater than 1. The Columns (1), (2), and (3) correspond to the results of regressing the Decision-Making Index on the type of customer, similarly, Columns (4), (5), (6) correspond to the results of regressing Access to Resources Index on customer type, and Columns (7), (8), and (9) correspond to the results of regressing Gender Perceptions Index on customer type. Columns (1), (4), and (7) have no controls, Columns (2), (5), and (8) have demographic and behavioral controls, such as religion, caste, family size, education, years passed since marriage of the customer, age difference of the spouses, number of females in the household, total monthly household income, the landholding of the household, number of outstanding loans by the household, BMI, and risk aversion of the customer, and Columns (3), (6), and (9) have demographic and behavioral controls along with cluster fixed effects.

Table A. 8 Pooled Tobit Regression for Amount Allocated to Spouse.

	(1)	(2)
Long-term clients	12.322**	17.039***
	(5.517)	(5.432)
Female		-6.155
		(5.630)
Hindu religion		8.074
		(23.218)
Caste (Base category – General)		
Scheduled Caste		-14.407**
		(6.636)
Other Backward Castes		-17.599**
		(7.359)
Family size		-0.090
		(3.791)
Education (Base category - No formal schooling)		
Class 1-5		-14.808
		(13.463)
Class 6-9		-8.742
		(6.658)
Class 10-12		0.748
		(8.528)
Vocational Training, Graduation or Post Graduation		5.828
		(12.155)
Years since marriage		-0.812
		(0.493)
Age difference of spouses		0.143
		(1.015)
No. of females in HH		6.936
		(4.524)
Total HH income (in ₹)		-0.0002
		(0.0002)
HH land holding (in sq. ft.)		0.00004

		(0.00005)
Number of outstanding loans of the household		9.279***
		(2.885)
BMI		1.980*
		(1.151)
Altruism		0.047
		(0.063)
Risk attitude		0.159
		(0.153)
Constant	273.161***	222.305***
	(4.678)	(39.183)
New Customer Mean	273	273
Observations	360	358
Pseudo R2	0.001	0.011
Demographic and Behavioral controls	No	Yes

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

The coefficient on Religion cannot be calculated as there are only Hindu men in the population with a non-missing value for the amount allocated to spouse variable.

This table consists of results of regressing the Amount Allocated to spouse on customer type, by gender using Tobit. The Column (1) and (4) have no controls, (2) and (5) have demographic and behavioral controls , such as religion, caste, family size, education, years passed since marriage of the customer, age difference of the spouses, number of females in the household, total monthly household income, the landholding of the household, number of outstanding loans by the household, BMI, altruism and risk attitude of the customer, and Column (3) and (6) has demographic and behavioral controls along with cluster fixed effects.

Table A. 9 Tobit Regression for Amount Allocated to Spouse with cluster fixed effects

	Pooled	Husbands of female clients	Female clients
	(1)	(2)	(3)
Long-term clients	24.386***	20.732**	27.092***
	(6.431)	(8.138)	(9.322)
Female	-6.275	-	-
	(5.591)		
Hindu religion	3.777	-	20.220
	(20.068)		(22.247)
Caste (Base category – General)			
Scheduled Caste	-14.831*	-28.620**	5.378
	(8.544)	(12.761)	(10.861)
Other Backward Castes	-17.568**	-40.558***	9.226
	(8.404)	(13.193)	(10.871)
Family size	-0.067	4.782	-7.480
	(3.702)	(5.757)	(4.893)
Education (Base category - No formal schooling)			
Class 1-5	-15.466	-25.221	6.223
	(13.701)	(16.662)	(22.498)
Class 6-9	-8.352	-16.968*	-6.500
	(6.632)	(10.061)	(7.818)
Class 10-12	2.318	-12.661	10.565
	(8.613)	(11.938)	(13.939)
Vocational Training, Graduation or Post Graduation	7.090	6.476	0.506
	(12.628)	(19.086)	(16.291)
Years since marriage	-0.728	-0.629	-1.073
	(0.502)	(0.652)	(0.666)
Age difference of spouses	-0.093	0.808	-1.894
	(0.988)	(1.323)	(1.739)

	(1)	(2)	(3)
No. of females in HH	7.249	2.769	12.458**
	(4.440)	(6.911)	(4.945)
Total HH income (in ₹)	-0.0002	-0.0004**	-0.00017
	(0.0002)	(0.0002)	(0.0004)
HH land holding (in sq. ft.)	0.00004	-0.0001	0.0001
	(0.00005)	(0.0001)	(0.0001)
Number of outstanding loans of the household	9.156***	9.903**	8.259*
	(3.168)	(4.368)	(4.411)
BMI	1.750	1.359	2.999*
	(1.110)	(1.269)	(1.800)
Altruism	0.060	0.079	-0.023
	(0.067)	(0.074)	(0.129)
Risk attitude	0.179	0.353*	-0.018
	(0.144)	(0.184)	(0.231)
Constant	221.887***	242.445***	187.538***
	(38.287)	(42.574)	(51.653)
New Customer Mean	273	278	268
Observations	358	168	190
Pseudo R2	0.014	0.027	0.016
Demographic and Behavioral controls	Yes	Yes	Yes

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1
The coefficient on Religion cannot be calculated as there are only Hindu men in the population with a non-missing value for the amount allocated to spouse variable.
This table consists of results of regressing the Amount Allocated to spouse on customer type, by gender using Tobit. The Columns have demographic and behavioral controls , such as religion, caste, family size, education, years passed since marriage of the customer, age difference of the spouses, number of females in the household, total monthly household income, the landholding of the household, number of outstanding loans by the household, BMI, altruism and risk attitude of the customer, and cluster fixed effects.

Table A. 10 Tobit Regression for Amount Allocated to Spouse in the ultimatum game - Altruism

	Husbands of female clients		Female clients	
	(1)	(2)	(3)	(4)
Long-term clients	15.453	20.425*	23.851**	29.909***
	(11.947)	(11.281)	(10.477)	(9.834)
Hindu religion	-	-	-	1.714
				(38.695)
Caste (Base category – General)				
Scheduled Caste	-	-28.403**	-	-33.579***
		(11.894)		(11.177)
Other Backward Castes	-	-40.926***	-	-18.217
		(13.689)		(13.082)
Family size	-	-3.169	-	0.322
		(8.566)		(6.692)
Education (Base category - No formal schooling)				
Class 1-5	-	-26.955	-	8.006
		(17.914)		(27.995)
Class 6-9	-	-38.034***	-	-4.695
		(13.656)		(11.090)

Class 10-12	-	-26.820*	-	-22.891
		(15.683)		(19.440)
Vocational Training, Graduation or Post Graduation	-	-46.563	-	-27.334
		(31.871)		(21.586)
Years since marriage	-	-2.678***	-	-1.584**
		(0.830)		(0.884)
Age difference of spouses	-	2.670	-	-2.582
		(2.131)		(2.103)
No. of females in HH	-	0.718	-	14.023**
		(10.075)		(7.228)
Total HH income (in ₹)	-	-0.0003	-	0.00022
		0.0002		(0.0005)
HH land holding (in sq. ft.)	-	0.0001	-	0.0002
		0.0001		(0.0001)
Number of outstanding loans of the household	-	7.238	-	9.641**
		(6.002)		(5.348)
BMI	-	1.020	-	4.072*
		(2.347)		(2.005)
Risk attitude	-	0.884***	-	0.374
		(0.305)		(0.289)
Constant	158.621***	206.809***	156.452***	76.572***
	(8.975)	(65.774)	(8.865)	(62.504)
New Customer Mean	159	159	156	156
Observations	168	168	192	190
Pseudo R2	0.001	0.020	0.002	0.017
Demographic and Behavioral controls	No	Yes	No	Yes

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

The coefficient on Religion cannot be calculated as there are only Hindu men in the population with a non-missing value for the amount allocated to spouse variable.

This table consists of results of regressing the Amount Allocated to spouse on customer type, by gender using Tobit. The Column (1) and (3) have no controls, (2) and (4) have demographic and behavioral controls , such as religion, caste, family size, education, years passed since marriage of the customer, age difference of the spouses, number of females in the household, total monthly household income, the landholding of the household, number of outstanding loans by the household, BMI, and risk attitude of the customer.

Table A. 11 Tobit Regression for Altruism

	Husbands of female clients		Female clients	
	(1)	(2)	(3)	(4)
Long-term clients	-6.620	-4.899	-7.788	-9.483
	(9.584)	(9.705)	(6.627)	(7.236)
Hindu religion	-	-	-	21.121
				(20.623)

	(1)	(2)	(3)	(4)
Caste (Base category – General)		6.325		27.662***
Scheduled Caste	-	(10.856)	-	(7.933)
		2.940		21.888**
Other Backward Castes	-	(12.709)	-	(8.975)
		8.147		-6.685
Family size	-	(8.224)	-	(4.115)
Education (Base category - No formal schooling)				
Class 1-5	-	1.030	-	3.650
		(14.728)		(23.548)
Class 6-9	-	24.090*	-	-2.170
		(13.070)		(6.771)
Class 10-12	-	16.194	-	22.374
		(13.119)		(21.433)
Vocational Training, Graduation or Post Graduation	-	61.625**	-	21.493
		(26.912)		(13.882)
Years since marriage	-	2.308***	-	0.281
		(0.604)		(0.531)
Age difference of spouses	-	-1.676	-	0.998
		(1.757)		(1.134)
No. of females in HH	-	1.964	-	-2.728
		(7.380)		(4.655)
Total HH income (in ₹)	-	-0.000	-	-0.000
		(0.000)		(0.000)
HH land holding (in sq. ft.)	-	-0.000**	-	-0.000
		(0.000)		(0.000)
Number of outstanding loans of the household	-	1.866	-	-1.743
		(4.970)		(3.706)
BMI	-	0.297	-	-0.924
		(2.385)		(0.975)
Risk attitude	-	-0.523*	-	-0.453**
		(0.271)		(0.190)
Constant	118.966***	32.411	111.828***	129.616***
	(6.604)	(58.816)	(5.585)	(35.651)
New Customer Mean	159	159	156	156
Observations	168	168	192	190
Pseudo R2	0.003	0.187	0.007	0.169
Demographic and Behavioral controls	No	Yes	No	Yes

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

The coefficient on Religion cannot be calculated as there are only Hindu men in the population with a non-missing value for the amount allocated to spouse variable.

This table consists of results of regressing the Amount Allocated to spouse on customer type, by gender using Tobit. The Column (1) and (3) have no controls, (2) and (4) have demographic and behavioral controls , such as religion, caste, family size, education, years passed since marriage of the customer, age difference of the spouses, number of females in the household, total monthly household income, the landholding of the household, number of outstanding loans by the household, BMI, and risk attitude of the customer.

Table A. 12 Fractional Regression for Amount Allocated to Spouse.

	Pooled Sample			Husbands of female clients			Female clients		
	(1)	(2)	(3)	(1)	(2)	(3)	(4)	(5)	(6)
Long-term clients	0.031**	0.040***	0.057***	0.035*	0.039**	0.052***	0.040**	0.050***	0.065***
	(0.014)	(0.013)	(0.015)	(0.021)	(0.018)	(0.020)	(0.019)	(0.018)	(0.022)
Female	-	-0.012	-0.013	-	-	-	-	-	-
		(0.014)	(0.014)						
Hindu religion	-	0.023	0.012	-	-0.035	-0.024***	-	0.068	0.055
		(0.053)	(0.043)		(0.103)	(0.000)		(0.052)	(0.051)
Caste (Base category – General)									
Scheduled Caste	-	-0.034**	-0.035*	-	-0.045**	-0.061**	-	-0.013	0.009
		(0.015)	(0.019)		(0.021)	(0.028)		(0.022)	(0.026)
Other Backward Castes	-	-0.042**	-0.040**	-	-0.088***	-0.092***	-	0.013	0.025
		(0.018)	(0.020)		(0.025)	(0.030)		(0.025)	(0.027)
Family size	-	-0.000	-0.000	-	0.013	0.013	-	-0.016	-0.018
		(0.009)	(0.009)		(0.014)	(0.014)		(0.012)	(0.012)
Education	-	-0.001	-0.001	-	-0.002	-0.003	-	-0.004	-0.002
		(0.002)	(0.002)		(0.003)	(0.003)		(0.003)	(0.003)
Years since marriage	-	-0.002*	-0.002	-	-0.001	-0.001	-	-0.004**	-0.003**
		(0.001)	(0.001)		(0.002)	(0.002)		(0.002)	(0.002)
Age difference of spouses	-	0.0004	-0.0001	-	0.003	0.002	-	-0.003	-0.004
		(0.002)	(0.002)		(0.003)	(0.003)		(0.004)	(0.004)
No. of females in HH	-	0.015	0.016	-	0.006	0.006	-	0.027**	0.028**
		(0.011)	(0.011)		(0.018)	(0.017)		(0.012)	(0.012)
Total HH income (in ₹)	-	-0.0000003	-0.0000004	-	-0.000001	-0.000001	-	0.0000004	0.000000002
		(0.0000004)	(0.0000004)		(0.0000004)	(0.0000004)		(0.000001)	(0.000001)
HH land holding (in sq. ft.)	-	0.0000001	0.0000002	-	-0.0000001	-0.00000003	-	0.0000002	0.0000002
		(0.0000001)	(0.0000001)		(0.0000002)	(0.0000002)		(0.0000001)	(0.0000001)
Number of outstanding loans of the household	-	0.022***	0.022***	-	0.022**	0.024**	-	0.021**	0.022**
		(0.007)	(0.008)		(0.010)	(0.011)		(0.009)	(0.011)
BMI	-	0.005*	0.004	-	0.003	0.002	-	0.008*	0.008*
		(0.003)	(0.003)		(0.003)	(0.003)		(0.004)	(0.004)
Altruism	-	0.0001	0.0001	-	0.0001	0.0002	-	-0.0001	-0.0001
		(0.0001)	(0.0002)		(0.0002)	(0.0002)		(0.0003)	(0.0003)
Risk aversion	-	0.001	0.001	-	0.001**	0.001**	-	-0.000	0.000
		(0.0004)	(0.0004)		(0.0005)	(0.0005)		(0.001)	(0.001)
New Customer Mean	0.682	0.682	0.682	0.694	0.694	0.694	0.671	0.671	0.671
Observations	360	358	358	168	168	168	192	190	190
Pseudo R2	0.001	0.006	0.008	0.004	0.012	0.014	0.002	0.009	0.011
Demographic and Behavioral controls	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes
Cluster Fixed Effects	No	No	Yes	No	No	Yes	No	No	Yes

Robust standard errors in parentheses

The coefficient on Religion cannot be calculated as there are only Hindu men in the population with a non-missing value for the amount allocated to spouse variable.

This table consists of results of regressing the Amount Allocated to spouse on customer type, by gender using Tobit. The Column (1) and (4) have no controls, (2) and (5) have demographic and behavioral controls , such as religion, caste, family size, education, years passed since marriage of the customer, age difference of the spouses, number of females in the household, total monthly household income, the landholding of the household, number of outstanding loans by the household, BMI, altruism and risk aversion of the customer, and Column (3) and (6) has demographic and behavioral controls along with cluster fixed effects.

Table A. 13 Pooled Tobit regression for Acceptable Minimum Amount.

	(1)	(2)
Long-term clients	17.943*	18.217*
	(10.486)	(10.256)
Female		13.048
		(10.195)
Hindu religion		36.001
		(26.608)
Caste (Base category – General)		
Scheduled Caste		-2.354
		(11.771)
Other Backward Castes		15.507
		(14.182)
Family size		-7.397
		(7.778)
Education (Base category - No formal schooling)		
Class 1-5		-9.532
		(24.642)
Class 6-9		5.964
		(11.597)
Class 10-12		-10.155
		(18.790)
Vocational Training, Graduation or Post Graduation		-19.783
		(45.187)
Years since marriage		-0.056
		(0.830)
Age difference of spouses		1.965
		(1.984)
No. of females in HH		9.014
		(9.548)

Total HH income (in ₹)		0.0004
		(0.001)
HH land holding (in sq. ft.)		0.0001
		(0.0001)
Number of outstanding loans of the household		0.758
		(4.920)
BMI		-1.539
		(2.115)
Risk attitude		-0.959***
		(0.297)
Constant	166.919***	175.138**
	(8.316)	(68.253)
New Customer Mean	170	170
Observations	360	359
Pseudo R2	0.001	0.007
Demographic and Behavioral controls	No	Yes
Cluster Fixed Effects	No	No

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

The coefficient on Religion cannot be calculated as there are only Hindu men in the population with a non-missing value for the amount allocated to spouse variable.

This table consists of results of regressing the Amount Allocated to spouse on customer type, by gender using Tobit. The Column (1) and (4) have no controls, (2) and (5) have demographic and behavioral controls , such as religion, caste, family size, education, years passed since marriage of the customer, age difference of the spouses, number of females in the household, total monthly household income, the landholding of the household, number of outstanding loans by the household, BMI, altruism and risk attitude of the customer, and Column (3) and (6) has demographic and behavioral controls along with cluster fixed effects.

Table A. 14 Tobit regression for Acceptable Minimum Amount with cluster fixed effects.

	Pooled	Husbands of female clients	Female clients
	(1)	(2)	(3)
Long-term clients	18.260	38.840***	2.159
	(11.486)	(14.641)	(16.393)
Female	14.519	-	-
	(9.499)		
Hindu religion	54.864	39.689	-
	(61.323)	(76.268)	
Caste (Base category – General)			

Scheduled Caste	15.330	17.988	6.422
	(13.186)	(21.176)	(16.192)
Other Backward Castes	18.243	32.759	8.719
	(14.179)	(23.278)	(15.079)
Family size	-7.680	-18.328**	4.684
	(7.253)	(9.293)	(10.356)
Education (Base category - No formal schooling)			
Class 1-5	-8.642	-14.023	5.396
	(23.708)	(30.960)	(33.536)
Class 6-9	8.676	-6.524	15.683
	(11.051)	(15.405)	(14.631)
Class 10-12	4.328	10.440	-5.240
	(17.178)	(24.229)	(20.188)
Vocational Training, Graduation or Post Graduation	-0.361	-58.126	37.969
	(36.807)	(48.624)	(53.542)
Years since marriage	0.511	-0.855	0.847
	(0.787)	(1.003)	(1.134)
Age difference of spouses	2.912	0.156	5.607**
	(1.828)	(2.866)	(2.225)
No. of females in HH	8.440	22.874*	-6.993
	(8.918)	(11.902)	(12.340)
Total HH income (in ₹)	0.0003	0.001	0.0003
	(0.001)	(0.001)	(0.001)
HH land holding (in sq. ft.)	0.0001	0.0001	-0.0001
	(0.0001)	(0.0001)	(0.0002)
Number of outstanding loans of the household	-4.045	-8.716	3.420
	(5.457)	(7.152)	(7.794)
BMI	-0.425	2.997	-0.975
	(1.945)	(3.468)	(2.480)
Risk attitude	-0.672**	-1.153***	-0.582
	(0.281)	(0.375)	(0.435)
Constant	72.428	87.356	101.987
	(85.866)	(118.530)	(89.070)
New Customer Mean	170	156	185
Observations	359	192	167
Pseudo R2	0.020	0.030	0.032
Demographic and Behavioral controls	Yes	Yes	Yes
Cluster Fixed Effects	Yes	Yes	Yes

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

The coefficient on Religion cannot be calculated as there are only Hindu men in the population with a non-missing value for the amount allocated to spouse variable.

This table consists of results of regressing the Amount Allocated to spouse on customer type, by gender using Tobit. Columns have demographic and behavioral controls , such as religion, caste, family size, education, years passed since marriage of the customer, age difference of the spouses, number of females in the household, total monthly household income, the landholding of the household, number of outstanding loans by the household, BMI, altruism and risk attitude of the customer, and cluster fixed effects.

Table A. 15 Fractional regression for Acceptable Minimum Amount.

	Pooled Sample			Male			Female		
	(1)	(2)	(3)	(1)	(2)	(3)	(4)	(5)	(6)
Long-term clients	0.038	0.039*	0.044*	0.076**	0.098***	0.092***	-0.003	-0.015	0.007
	(0.024)	(0.023)	(0.026)	(0.033)	(0.030)	(0.032)	(0.034)	(0.033)	(0.037)
Female	-	0.022	0.026						
		(0.024)	(0.022)						
Hindu religion	-	0.086	0.137	-	0.071	0.100	-	-0.050	-0.137***
		(0.055)	(0.136)		(0.073)	(0.183)		(0.195)	(0.002)
Caste (Base category – General)									
Scheduled Caste	-	-0.001	0.040	-	0.001	0.038	-	0.013	0.026
		(0.027)	(0.030)		(0.039)	(0.046)		(0.037)	(0.038)
Other Backward Castes	-	0.043	0.045	-	0.040	0.065	-	0.065	0.027
		(0.032)	(0.032)		(0.046)	(0.051)		(0.043)	(0.036)
Family size	-	-0.012	-0.015	-	-0.044**	-0.040*	-	0.018	0.014
		(0.017)	(0.016)		(0.022)	(0.021)		(0.025)	(0.022)
Education	-	-0.002	0.000	-	-0.005	-0.003	-	0.000	0.002
		(0.004)	(0.004)		(0.005)	(0.005)		(0.006)	(0.005)
Years since marriage	-	0.000	0.001	-	-0.002	-0.002	-	0.002	0.002
		(0.002)	(0.002)		(0.002)	(0.002)		(0.003)	(0.002)
Age difference of spouses	-	0.004	0.006	-	-0.001	0.000	-	0.008	0.012**
		(0.004)	(0.004)		(0.007)	(0.006)		(0.006)	(0.005)
No. of females in HH	-	0.018	0.018	-	0.046	0.049*	-	-0.015	-0.020
		(0.021)	(0.020)		(0.028)	(0.027)		(0.029)	(0.028)
Total HH income (in ₹)	-	0.000001	0.000001	-	0.000001	0.000001	-	0.0000002	0.0000004
		(0.000001)	(0.000001)		(0.000002)	(0.000002)		(0.000002)	(0.000001)
HH land holding (in sq. ft.)	-	0.0000003	0.0000002	-	0.0000002	0.0000002	-	0.0000005	-0.00000004
		(0.0000002)	(0.0000002)		(0.0000002)	(0.0000002)		(0.0000004)	(0.0000004)
Number of outstanding loans of the household	-	0.002	-0.010	-	-0.017	-0.017	-	0.026	0.003
		(0.011)	(0.012)		(0.015)	(0.015)		(0.017)	(0.018)
BMI	-	-0.004	-0.001	-	0.006	0.007	-	-0.009	-0.003
		(0.005)	(0.004)		(0.009)	(0.007)		(0.006)	(0.006)
Risk aversion	-	-0.002***	-0.002**	-	-0.003***	-0.003***	-	-0.002**	-0.002
		(0.001)	(0.001)		(0.001)	(0.001)		(0.001)	(0.001)
New Customer Mean (in ₹)	0.426	0.426	0.426	0.391	0.391	0.391	0.463	0.463	0.463

Observations	360	359	359	192	192	192	168	167	167
Pseudo R2	0.001	0.011	0.032	0.004	0.021	0.044	0.00001	0.018	0.047
Demographic and Behavioral controls	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes
Cluster Fixed Effects	No	No	Yes	No	No	Yes	No	No	Yes

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

The coefficient on Religion cannot be calculated as there are only Hindu men in the population with a non-missing value for the amount allocated to spouse variable.

This table consists of results of regressing the Amount Allocated to spouse on customer type, by gender using Tobit. The Column (1) and (4) have no controls, (2) and (5) have demographic and behavioral controls, such as religion, caste, family size, education, years passed since marriage of the customer, age difference of the spouses, number of females in the household, total monthly household income, the landholding of the household, number of outstanding loans by the household, BMI, altruism and risk aversion of the customer, and Column (3) and (6) has demographic and behavioral controls along with cluster fixed effects.

Table A. 16: Tobit regression results for time use: Household chores and taking care of family with cluster-fixed effects (Females)

	Household Chores	Taking Care of Family
	(1)	(2)
Long-term Clients	-0.369**	-0.025
	(0.162)	(0.219)
Hindu Religion	1.137***	0.755*
	(0.440)	(0.443)
Caste (Base category - General)		
Scheduled Caste	-0.230	-0.414
	(0.249)	(0.345)
Other Backward Castes	-0.253	-0.392
	(0.261)	(0.369)
Family size	0.074	0.054
	(0.094)	(0.134)
Education (Base category - No formal education)		
Class 1-5	-0.023	-0.149
	(0.239)	(0.275)
Class 6-9	-0.260	-0.303
	(0.171)	(0.246)
Class 10-12	-0.147	0.304
	(0.206)	(0.257)
Vocational Training, Graduation, or Postgraduation	-0.195	-0.137
	(0.404)	(0.544)
Years since marriage	-0.007	-0.020
	(0.011)	(0.015)
Age difference of spouses	0.001	-0.005
	(0.023)	(0.029)
No. of females in HH	-0.137	0.139

	(0.107)	(0.133)
Total HH income (in ₹)	0.000010	0.00002
	(0.000008)	(0.000010)
HH land holding (in sq. ft.)	0.0000021	0.0000018
	(0.000002)	(0.000002)
Number of outstanding loans of the household	-0.087	-0.072
	(0.076)	(0.099)
BMI	0.063***	0.100***
	(0.021)	(0.029)
Risk aversion	0.004	0.004
	(0.004)	(0.005)
Constant	1.589*	0.214
	(0.877)	(1.095)
New Client Mean	4.858	3.867
Observations	360	360
Pseudo R2	0.100	0.043
Cluster Fixed Effects	Yes	Yes

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

This table consists of results of regressing the time spent by female respondents on household chores and taking care of family members on customer type by using Tobit. Column (1) corresponds to the results of regressing Household chores on the type of customer, similarly, column (2) corresponds to the results of regressing Taking care of family members on customer type. Both Columns (1) and (2) have demographic and behavioral controls, such as religion, caste, family size, education, years passed since marriage of the customer, age difference of the spouses, number of females in the household, total monthly household income, the landholding of the household, number of outstanding loans by the household, BMI, and risk aversion of the customer, along with cluster fixed effects.

Table A. 17: Tobit regression results for time use: Income generating activities and leisure with cluster-fixed effects (Females)

	Income Generating Activities	Leisure
	(1)	(2)
Long-term Clients	1.071***	-0.618***
	(0.323)	(0.197)
Hindu Religion	-1.027	-0.882**
	(0.764)	(0.355)
Caste (Base category - General)		
Scheduled Caste	0.866	-0.135
	(0.565)	(0.204)
Other Backward Castes	1.127*	-0.399*
	(0.598)	(0.241)

Family size	-0.076	-0.026
	(0.190)	(0.117)
Education (Base category - No formal education)		
Class 1-5	-0.356	0.401
	(0.446)	(0.269)
Class 6-9	-0.049	0.572**
	(0.361)	(0.258)
Class 10-12	-0.623	0.395
	(0.438)	(0.258)
Vocational Training, Graduation, or Postgraduation	0.165	0.074
	(0.915)	(0.336)
Years since marriage	0.032	-0.004
	(0.024)	(0.013)
Age difference of spouses	-0.056	0.058*
	(0.047)	(0.030)
No. of females in HH	0.284	-0.272**
	(0.190)	(0.126)
Total HH income (in ₹)	-0.00003	-0.000002
	(0.00002)	(0.000007)
HH land holding (in sq. ft.)	-0.0000030	-0.000001
	(0.0000033)	(0.000001)
Number of outstanding loans of the household	0.048	0.101
	(0.142)	(0.101)
BMI	-0.107**	-0.059**
	(0.042)	(0.025)
Risk aversion	-0.013	0.007
	(0.008)	(0.004)
Constant	11.523***	10.609***
	(1.743)	(0.830)
New Client Mean	6.747	8.528
Observations	360	360
Pseudo R2	0.075	0.067
Cluster Fixed Effects	Yes	Yes

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

This table consists of results of regressing the time spent on income generating activities and leisure by female respondents on customer type by using Tobit. Column (1) corresponds to the results of regressing time spent on income generating activities on customer type, and Column (2) corresponds to the results of regressing time spent on leisure on customer type. Both Columns (1) and (2) have demographic and behavioral controls, such as religion, caste, family size, education, years passed since marriage of the customer, age difference of the spouses, number of females in the household, total monthly household income, the landholding of the household, number of outstanding loans by the household, BMI, and risk aversion of the customer, along with cluster fixed effects.

Table A. 18 Pooled Tobit regression for Time-use: Household chores and taking care of family.

	Household Chores			Taking Care of Family		
	(1)	(2)	(3)	(4)	(5)	(6)
Long-term Clients	-0.135	-0.122	-0.161	-0.025	-0.030	0.078
	(0.127)	(0.108)	(0.117)	(0.129)	(0.128)	(0.142)
Female	-	1.851***	1.843***	-	1.011***	1.015***
		(0.106)	(0.102)		(0.123)	(0.122)
Hindu Religion	-	0.957***	0.782**	-	-0.089	-0.074
		(0.330)	(0.335)		(0.557)	(0.549)
Caste (Base category - General)						
Scheduled Caste	-	-0.226	-0.154	-	-0.099	-0.360*
		(0.146)	(0.170)		(0.182)	(0.219)
Other Backward Castes	-	-0.457***	-0.130	-	0.039	-0.316
		(0.162)	(0.178)		(0.200)	(0.232)
Family size	-	-0.038	-0.023	-	-0.000	-0.015
		(0.072)	(0.070)		(0.088)	(0.085)
Education (Base category - No formal education)						
Class 1-5	-	-0.082	-0.121	-	-0.147	-0.043
		(0.195)	(0.194)		(0.217)	(0.207)
Class 6-9	-	-0.093	-0.132	-	-0.173	-0.087
		(0.129)	(0.124)		(0.160)	(0.161)
Class 10-12	-	-0.100	-0.130	-	0.279	0.348**
		(0.147)	(0.144)		(0.178)	(0.176)
Vocational Training, Graduation, or Postgraduation	-	-0.093	-0.179	-	-0.080	0.021
		(0.289)	(0.275)		(0.326)	(0.321)
Years since marriage	-	0.004	0.002	-	-0.008	-0.005
		(0.008)	(0.008)		(0.010)	(0.010)
Age difference of spouses	-	0.009	0.010	-	0.009	0.002
		(0.018)	(0.017)		(0.020)	(0.020)
No. of females in HH	-	-0.003	-0.031	-	-0.010	0.022
		(0.080)	(0.076)		(0.087)	(0.087)
Total HH income (in ₹)	-	-0.0000011	-0.0000023	-	0.000009	0.000009
		(0.000004)	(0.000004)		(0.000006)	(0.000006)
HH land holding (in sq. ft.)	-	-0.0000002	0.0000006	-	-0.00000006	-0.00000031
		(0.000001)	(0.000001)		(0.000001)	(0.000001)
Number of outstanding loans of the household	-	-0.258***	-0.117**	-	0.061	-0.008
		(0.052)	(0.058)		(0.069)	(0.072)
BMI	-	0.032*	0.026	-	0.089***	0.092***
		(0.019)	(0.019)		(0.023)	(0.023)
Risk aversion	-	0.005	0.003	-	-0.000	-0.001
		(0.003)	(0.003)		(0.004)	(0.004)

	(1)	(2)	(3)	(4)	(5)	(6)
Constant	3.866***	1.863***	1.420**	3.201***	0.679	0.940
	(0.090)	(0.651)	(0.678)	(0.094)	(0.899)	(0.910)
New client Mean	3.878	3.878	3.878	3.224	3.224	3.224
Observations	720	720	720	720	720	720
Pseudo R2	0.0004	0.110	0.127	0.00001	0.037	0.043
Cluster Fixed Effects	No	No	Yes	No	No	Yes

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

This table consists of results of regressing the different measures of the time-use of respondents on customer type by using Tobit. The Columns (1), (2), and (3) correspond to the results of regressing Household chores on the type of customer, similarly, Columns (4), (5), (6) correspond to the results of regressing Taking care of family members on customer type. Columns (1) and (4) have no controls, Columns (2), and (5) have demographic and behavioural controls, such as religion, caste, family size, education, years passed since marriage of the customer, age difference of the spouses, number of females in the household, total monthly household income, the landholding of the household, number of outstanding loans by the household, BMI, and risk aversion of the customer, and Columns (3) and (6) have demographic and behavioural controls along with cluster fixed effects.

Table A. 19 Pooled Tobit regressions for Time-use: Income generating activities and Leisure.

	Income Generating Activities			Leisure		
	(1)	(2)	(3)	(4)	(5)	(6)
Long-term Clients	0.585***	0.604***	0.649***	-0.397***	-0.419***	-0.519***
	(0.203)	(0.185)	(0.210)	(0.125)	(0.122)	(0.144)
Female	-	-2.161***	-2.154***	-	-0.734***	-0.737***
		(0.186)	(0.184)		(0.120)	(0.118)
Hindu Religion	-	-0.399	-0.170	-	-0.495	-0.538
		(1.067)	(1.064)		(0.369)	(0.344)
Caste (Base category - General)						
Scheduled Caste	-	0.617**	0.504	-	-0.234	0.041
		(0.268)	(0.346)		(0.152)	(0.158)
Other Backward Castes	-	0.808***	0.526	-	-0.317*	-0.055
		(0.296)	(0.365)		(0.176)	(0.176)
Family size	-	0.004	-0.015	-	0.050	0.064
		(0.119)	(0.119)		(0.090)	(0.087)
Education (Base category - No formal education)						
Class 1-5	-	-0.734**	-0.659**	-	0.834***	0.702***
		(0.311)	(0.324)		(0.214)	(0.212)
Class 6-9	-	-0.138	-0.062	-	0.362**	0.252
		(0.222)	(0.225)		(0.160)	(0.161)
Class 10-12	-	-0.614**	-0.553*	-	0.387**	0.293

	(0.285)	(0.286)		(0.184)	(0.181)
Vocational Training, Graduation, or Postgraduation	-	0.057	0.064	-	0.062	0.048
		(0.548)	(0.548)		(0.224)	(0.226)
Years since marriage	-	-0.002	0.000	-	0.006	0.003
		(0.014)	(0.014)		(0.009)	(0.009)
Age difference of spouses	-	-0.030	-0.030	-	0.011	0.017
		(0.033)	(0.033)		(0.022)	(0.022)
No. of females in HH	-	0.147	0.177	-	-0.138	-0.166*
		(0.121)	(0.121)		(0.088)	(0.087)
Total HH income	-	-0.000003	-0.000002	-	-0.000007	-0.000006
		(0.000009)	(0.000009)		(0.000006)	(0.000006)
HH land holding	-	-0.000001	-0.000002	-	0.0000015	0.0000012
		(0.000002)	(0.000002)		(0.000001)	(0.000001)
Number of outstanding loans of the household	-	0.129	0.032	-	0.071	0.085
		(0.096)	(0.105)		(0.068)	(0.072)
BMI	-	-0.091***	-0.082***	-	-0.032	-0.036
		(0.033)	(0.032)		(0.023)	(0.022)
Risk aversion	-	0.001	0.002	-	-0.004	-0.002
		(0.005)	(0.005)		(0.003)	(0.003)
Constant	8.003***	11.087***	11.085***	8.853***	10.304***	10.519***
	(0.158)	(1.492)	(1.541)	(0.093)	(0.720)	(0.718)
New client Mean	8.046	8.046	8.046	8.853	8.853	8.853
Observations	720	720	720	720	720	720
Pseudo R2	0.002	0.050	0.054	0.004	0.030	0.040
Cluster Fixed Effects	No	No	Yes	No	No	Yes

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

This table consists of results of regressing the different measures of the time-use of respondents on customer type by using Tobit. The Columns (1), (2), and (3) correspond to the results of regressing time spent on income generating activities on customer type, similarly, Columns (4), (5), (6) correspond to the results of regressing time spent on leisure on customer type. Columns (1) and (4) have no controls, Columns (2), and (5) have demographic and behavioural controls, such as religion, caste, family size, education, years passed since marriage of the customer, age difference of the spouses, number of females in the household, total monthly household income, the landholding of the household, number of outstanding loans by the household, BMI, and risk aversion of the customer, and Columns (3) and (6) have demographic and behavioural controls along with cluster fixed effects.

Table A. 20 Tobit regressions for time spent on Household Chores and Taking care of family (Husbands of long-term clients).

	Household Chores			Taking Care of Family		
	(1)	(2)	(3)	(4)	(5)	(6)
Husbands of long-term Clients	-0.006	0.035	0.097	0.225	0.176	0.213
	(0.137)	(0.140)	(0.153)	(0.153)	(0.159)	(0.170)
Hindu Religion	-	0.696**	0.577*	-	-0.753***	-0.755
		(0.286)	(0.343)		(0.270)	(0.494)
Caste (Base category - General)						
Scheduled Caste	-	-0.038	0.010	-	0.029	-0.190

		(0.186)	(0.197)		(0.217)	(0.233)
Other Backward Castes	-	-0.065	0.041	-	0.324	-0.173
		(0.205)	(0.212)		(0.242)	(0.245)
Family size	-	-0.088	-0.086	-	-0.055	-0.057
		(0.091)	(0.091)		(0.103)	(0.099)
Education (Base category - No formal education)						
Class 1-5	-	-0.493*	-0.432	-	-0.192	-0.238
		(0.268)	(0.274)		(0.308)	(0.277)
Class 6-9	-	0.002	0.004	-	0.042	0.051
		(0.170)	(0.168)		(0.207)	(0.200)
Class 10-12	-	-0.139	-0.148	-	0.229	0.249
		(0.199)	(0.204)		(0.228)	(0.219)
Vocational Training, Graduation, or Postgraduation	-	-0.120	-0.058	-	-0.040	0.232
		(0.297)	(0.291)		(0.305)	(0.292)
Years since marriage	-	0.010	0.010	-	0.003	0.010
		(0.010)	(0.011)		(0.012)	(0.011)
Age difference of spouses	-	0.012	0.011	-	0.015	0.009
		(0.024)	(0.023)		(0.027)	(0.026)
No. of females in HH	-	0.065	0.059	-	-0.132	-0.103
		(0.103)	(0.101)		(0.114)	(0.110)
Total HH income (in ₹)	-	-0.00001	-0.00002	-	-0.000000096	0.000000143
		(0.000005)	(0.000005)		(0.000007)	(0.000006)
HH land holding (in sq. ft.)	-	-0.0000006	-0.0000006	-	-0.0000008	-0.0000021
		(0.000001)	(0.000001)		(0.000001)	(0.000001)
Number of outstanding loans of the household	-	-0.176**	-0.147*	-	0.239***	0.066
		(0.069)	(0.077)		(0.091)	(0.087)
BMI	-	-0.057	-0.061*	-	0.044	0.042
		(0.036)	(0.035)		(0.037)	(0.036)
Risk aversion	-	0.005	0.005	-	-0.005	-0.002
		(0.004)	(0.004)		(0.004)	(0.004)
Constant	2.880***	4.001***	3.964***	2.555***	2.224**	3.342***
	(0.100)	(0.905)	(0.969)	(0.111)	(0.998)	(1.099)
Husbands of new client Mean	2.897	2.897	2.897	2.581	2.581	2.581
Observations	360	360	360	360	360	360
Pseudo R2	0.000002	0.027	0.031	0.002	0.021	0.051
Cluster Fixed Effects	No	No	Yes	No	No	Yes

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

This table consists of results of regressing the different measures of the time-use of male respondents on customer type by using Tobit. The Columns (1), (2), and (3) correspond to the results of regressing time spent on Household chores on the type of customer, similarly, Columns (4), (5), (6) correspond to the results of regressing time spent on Taking care of family members on customer type. Columns (1) and (4) have no controls, Columns (2) and (5) have demographic and behavioural controls, such as religion, caste, family size, education, years passed since marriage of the customer, age difference of the spouses, number of females in the household, total monthly household income, the landholding of the household, number of outstanding loans by the household, BMI, and risk aversion of the customer, and Columns (3) and (6) have demographic and behavioural controls along with cluster fixed effects.

Table A. 21 Tobit regressions for time spent on Income generating activities and Leisure (Husbands of long-term clients)

	Income Generating Activities			Leisure		
	(1)	(2)	(3)	(4)	(5)	(6)
Long-term Clients	0.096	0.095	0.146	-0.294*	-0.292*	-0.421**
	(0.182)	(0.169)	(0.196)	(0.166)	(0.161)	(0.176)
Hindu Religion	-	0.207	0.218	-	-0.160	-0.028
		(0.316)	(0.561)		(0.437)	(0.364)
Caste (Base category - General)						
Scheduled Caste	-	-0.096	-0.014	-	0.148	0.186
		(0.208)	(0.222)		(0.200)	(0.204)
Other Backward Castes	-	-0.604**	-0.160	-	0.400*	0.280
		(0.250)	(0.256)		(0.232)	(0.216)
Family size	-	0.016	0.011	-	0.133	0.135
		(0.117)	(0.112)		(0.119)	(0.116)
Education (Base category - No formal education)						
Class 1-5	-	-0.468*	-0.248	-	1.028***	0.803***
		(0.273)	(0.259)		(0.287)	(0.294)
Class 6-9	-	-0.231	-0.180	-	0.151	0.100
		(0.222)	(0.207)		(0.187)	(0.179)
Class 10-12	-	-0.597**	-0.498*	-	0.476*	0.381
		(0.301)	(0.286)		(0.262)	(0.249)
Vocational Training, Graduation, or Postgraduation	-	0.062	-0.285	-	0.067	0.088
		(0.390)	(0.368)		(0.282)	(0.268)
Years since marriage	-	-0.029**	-0.034***	-	0.015	0.015
		(0.013)	(0.011)		(0.011)	(0.011)
Age difference of spouses	-	-0.000	0.003	-	-0.027	-0.022
		(0.033)	(0.033)		(0.029)	(0.028)
No. of females in HH	-	0.097	0.080	-	-0.044	-0.044
		(0.129)	(0.128)		(0.114)	(0.112)
Total HH income (in ₹)	-	0.00002	0.00002	-	-0.000009	-0.000008
		(0.00001)	(0.00001)		(0.000008)	(0.000007)
HH land holding (in sq. ft.)	-	-0.000003	-0.000001	-	0.000004	0.000004
		(0.000002)	(0.000001)		(0.000001)	(0.000001)
Number of outstanding loans of the household	-	-0.195**	0.003	-	0.135	0.071
		(0.090)	(0.094)		(0.088)	(0.093)
BMI	-	0.060	0.069*	-	-0.048	-0.049
		(0.045)	(0.041)		(0.040)	(0.037)
Risk aversion	-	0.010**	0.006	-	-0.009*	-0.008*
		(0.005)	(0.005)		(0.005)	(0.005)
Constant	9.343***	8.306***	6.621***	9.178***	9.410***	10.057***
	(0.143)	(1.240)	(1.348)	(0.131)	(0.972)	(0.994)
Husbands of new client Mean	9.344	9.344	9.344	9.178	9.178	9.178
Observations	360	360	360	360	360	360
Pseudo R2	0.0002	0.041	0.074	0.002	0.042	0.051

Cluster Fixed Effects	No No Yes No No Yes

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

This table consists of results of regressing the different measures of the time-use of male respondents on customer type by using Tobit. The Columns (1), (2), and (3) correspond to the results of regressing time spent on Income-generating activities on the type of customer, similarly, Columns (4), (5), (6) correspond to the results of regressing time spent on Leisure on customer type. Columns (1) and (4) have no controls, Columns (2) and (5) have demographic and behavioural controls, such as religion, caste, family size, education, years passed since marriage of the customer, age difference of the spouses, number of females in the household, total monthly household income, the landholding of the household, number of outstanding loans by the household, BMI, and risk aversion of the customer, and Columns (3) and (6) have demographic and behavioural controls along with cluster fixed effects.

Table A. 22: Logit Regression results for self-employed women with cluster-fixed effects.

	(1)
Long-term Clients	-0.050
	(0.044)
Hindu Religion	-0.371***
	(0.140)
Caste (Base category - General)	
Scheduled Caste	-0.083
	(0.071)
Other Backward Castes	-0.091
	(0.074)
Family size	0.062***
	(0.023)
Education (Base category - No formal education)	
Class 1-5	-0.014
	(0.043)
Class 6-9	0.107**
	(0.050)
Class 10-12	0.170***
	(0.062)
Vocational Training, Graduation, or Postgraduation	0.057
	(0.083)
Years since marriage	0.000
	(0.003)
Age difference of spouses	0.003
	(0.007)
No. of females in HH	-0.065*
	(0.034)
Total HH income (in ₹)	0.000002
	(0.0000010)
HH land holding (in sq. ft.)	0.0000005

	(0.0000003)
Number of outstanding loans of the household	-0.062***
	(0.021)
BMI	-0.003
	(0.006)
Risk aversion	-0.00001
	(0.001)
New Client Mean	0.115
Observations	280
Pseudo R2	0.204
Cluster Fixed Effects	Yes

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

This table consists of marginals from results of regressing self-employed women on customer type by using Logit. The Column (1) has both demographic and behavioral controls, such as religion, caste, family size, education, years passed since marriage of the customer, age difference of the spouses, number of females in the household, total monthly household income, the landholding of the household, number of outstanding loans by the household, BMI, and risk aversion of the customer, along with cluster fixed effects. Some observations have been dropped from Column (3) because some clusters were predicting failure perfectly.

Table A. 23 Linear Regression results for self-employed women.

	(1)	(2)	(3)
Long-term Clients	-0.011	-0.035	-0.054
	(0.036)	(0.036)	(0.042)
Hindu Religion	-	-0.459	-0.449
		(0.296)	(0.343)
Caste (Base category - General)			
Scheduled Caste	-	-0.090*	-0.079
		(0.054)	(0.065)
Other Backward Castes	-	-0.077	-0.075
		(0.061)	(0.071)
Family size	-	0.053**	0.052**
		(0.026)	(0.026)
Education (Base category - No formal education)			
Class 1-5	-	0.004	-0.007
		(0.037)	(0.040)
Class 6-9	-	0.106**	0.097**
		(0.046)	(0.047)

	(1)	(2)	(3)
Class 10-12	-	0.152***	0.146***
		(0.055)	(0.055)
Vocational Training, Graduation, or Postgraduation	-	0.051	0.040
		(0.113)	(0.108)
Years since marriage	-	0.000	0.000
		(0.002)	(0.002)
Age difference of spouses	-	0.001	0.001
		(0.006)	(0.006)
No. of females in HH	-	-0.050*	-0.051*
		(0.030)	(0.029)
Total HH income (in ₹)	-	0.000003	0.000003
		(0.000002)	(0.000002)
HH land holding (in sq. ft.)	-	0.0000009	0.0000008
		(0.0000005)	(0.0000005)
Number of outstanding loans of the household	-	-0.045***	-0.049***
		(0.017)	(0.018)
BMI	-	-0.004	-0.003
		(0.006)	(0.006)
Risk aversion	-	0.000	0.000
		(0.001)	(0.001)
Constant	0.115***	0.546	0.606
	(0.027)	(0.351)	(0.395)
New client Mean	0.115	0.115	0.115
Observations	303	303	303
R2	0.0003	0.130	0.145
Cluster Fixed effects	No	No	Yes

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

This table consists of results of regressing self-employed women on customer type by using OLS. The Column (1) has no controls, (2) has demographic and behavioral controls , such as religion, caste, family size, education, years passed since marriage of the customer, age difference of the spouses, number of females in the household, total monthly household income, the landholding of the household, number of outstanding loans by the household, BMI, and risk aversion of the customer, and Column (3) has demographic and behavioral controls along with cluster fixed effects.

Table A. 24: Logit regression results for whether a woman is employed in paid work with cluster-fixed effects.

	(1)
Long-term Clients	0.057

	(0.047)
Religion (Base category - Muslim)	
Caste (Base category - General)	
Scheduled Caste	0.108
	(0.068)
Other Backward Castes	0.086
	(0.077)
Family size	0.009
	(0.029)
Education (Base category - No formal education)	
Class 1-5	-0.124*
	(0.070)
Class 6-9	-0.045
	(0.048)
Class 10-12	-0.109
	(0.071)
Vocational Training, Graduation, or Postgraduation	0.003
	(0.072)
Years since marriage	0.005
	(0.004)
Age difference of spouses	-0.004
	(0.008)
No. of females in HH	0.023
	(0.025)
Total HH income (in ₹)	-0.000006
	(0.0000018)
HH land holding (in sq. ft.)	-0.0000002
	(0.00000030)
Number of outstanding loans of the household	-0.016
	(0.019)
BMI	-0.004
	(0.005)
Risk aversion	0.001
	(0.001)
New Client Mean	0.894
Observations	254
Pseudo R2	0.203
Cluster Fixed Effects	Yes

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

This table consists of marginals from results of regressing whether a woman is employed in paid work on customer type by using Logit. Column (1) has both demographic and behavioral controls such as religion, caste, family size, education, years passed since marriage of the customer, age difference of the spouses, number of females in the household, total monthly household income, the landholding of the household, number of outstanding loans by the household, BMI, and risk aversion of the customer, along with cluster fixed effects. Some observations have been dropped because a few variables were predicting success perfectly such as religion and some cluster categories.

Table A. 25 Linear regression results for whether a woman is employed in paid work.

	(1)	(2)	(3)
Long-term Clients	0.033	0.047	0.041
	(0.030)	(0.029)	(0.031)
Religion (Hindu Religion)	-	-0.020	-0.000
		(0.067)	(0.080)
Caste (Base category - General)			
Scheduled Caste	-	0.096**	0.097
		(0.049)	(0.064)
Other Backward Castes	-	0.126**	0.096
		(0.052)	(0.069)
Family size	-	0.015	0.014
		(0.018)	(0.018)
Education (Base category - No formal education)			
Class 1-5	-	-0.098**	-0.091**
		(0.044)	(0.045)
Class 6-9	-	-0.042	-0.038
		(0.034)	(0.036)
Class 10-12	-	-0.078*	-0.077*
		(0.045)	(0.045)
Vocational Training, Graduation, or Postgraduation	-	-0.084	-0.080
		(0.099)	(0.098)
Years since marriage	-	0.003	0.003
		(0.002)	(0.003)
Age difference of spouses	-	-0.002	-0.002
		(0.005)	(0.005)
No. of females in HH	-	0.009	0.013
		(0.016)	(0.017)
Total HH income (in ₹)	-	-0.000004	-0.000004
		(0.000002)	(0.000002)
HH land holding (in sq. ft.)	-	-0.0000004	-0.0000005
		(0.0000003)	(0.0000003)
Number of outstanding loans of the household	-	0.012	-0.002

	(1)	(2)	(3)
	(0.012)	(0.013)
BMI	-	-0.005	-0.004
		(0.004)	(0.004)
Risk aversion	-	0.001	0.001
		(0.001)	(0.001)
Constant	0.894***	0.893***	0.944***
	(0.023)	(0.169)	(0.183)
New client Mean	0.894	0.894	0.894
Observations	360	360	360
R2	0.003	0.133	0.151
Cluster Fixed effects	No	No	Yes

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

This table consists of results of regressing whether a woman is employed in paid work on customer type by using OLS. The Column (1) has no controls, (2) has demographic and behavioral controls , such as religion, caste, family size, education, years passed since marriage of the customer, age difference of the spouses, number of females in the household, total monthly household income, the landholding of the household, number of outstanding loans by the household, BMI, and risk aversion of the customer, and Column (3) has demographic and behavioral controls along with cluster fixed effects.

Table A. 26 Linear regression results for whether the woman makes the borrowing decision in the household.

	(1)	(2)	(3)
Long-term Clients	-0.044	-0.072	0.028
	(0.050)	(0.050)	(0.057)
Religion (Hindu Religion)	-	-0.159	-0.146
		(0.103)	(0.096)
Caste (Base category - General)			
Scheduled Caste	-	0.028	-0.040
		(0.068)	(0.078)
Other Backward Castes	-	0.058	-0.079
		(0.074)	(0.084)
Family size	-	-0.008	-0.015
		(0.035)	(0.034)
Education (Base category - No formal education)			
Class 1-5	-	0.070	0.144*
		(0.082)	(0.077)
Class 6-9	-	0.138**	0.187***
		(0.069)	(0.069)
Class 10-12	-	0.147**	0.166**
		(0.069)	(0.070)
Vocational Training, Graduation, or Postgraduation	-	-0.028	0.002
		(0.118)	(0.107)

Years since marriage	-	0.007*	0.008**
		(0.004)	(0.004)
Age difference of spouses	-	-0.009	-0.010
		(0.008)	(0.007)
No. of females in HH	-	-0.060	-0.047
		(0.041)	(0.041)
Total HH income (in ₹)	-	-0.000001	-0.000001
		(0.000002)	(0.000002)
HH land holding (in sq. ft.)	-	0.00000002	-0.00000007
		(0.0000004)	(0.0000004)
Number of outstanding loans of the household	-	0.101***	0.071***
		(0.023)	(0.026)
BMI	-	-0.010	-0.008
		(0.008)	(0.008)
Risk aversion	-	0.004***	0.004***
		(0.001)	(0.001)
Constant	0.689***	0.800***	0.906***
	(0.035)	(0.284)	(0.275)
New client Mean	0.689	0.689	0.689
Observations	360	360	360
R2	0.002	0.131	0.213
Cluster Fixed effects	No	No	Yes

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

This table consists of results of regressing whether the woman makes the borrowing decisions in the household on customer type by using OLS. The Column (1) has no controls, Column (2) has demographic and behavioral controls, such as religion, caste, family size, education, years passed since marriage of the customer, age difference of the spouses, number of females in the household, total monthly household income, the landholding of the household, number of outstanding loans by the household, BMI, and risk aversion of the customer, and Column (3) has demographic and behavioral controls along with cluster fixed effects.

Table A. 27 Linear regression results for whether the woman makes the loan-use decisions in the household.

	(1)	(2)	(3)
Long-term Clients	-0.050	-0.061	0.003
	(0.050)	(0.050)	(0.056)
Religion (Hindu Religion)	-	-0.084	-0.077
		(0.107)	(0.093)
Caste (Base category - General)			
Scheduled Caste	-	0.014	-0.050
		(0.067)	(0.079)
Other Backward Castes	-	0.092	-0.039
		(0.072)	(0.083)
Family size	-	-0.008	-0.013

		(0.034)	(0.034)
Education (Base category - No formal education)			
Class 1-5	-	0.083	0.146**
		(0.077)	(0.071)
Class 6-9	-	0.051	0.104
		(0.068)	(0.070)
Class 10-12	-	0.019	0.039
		(0.071)	(0.072)
Vocational Training, Graduation, or Postgraduation	-	-0.116	-0.087
		(0.116)	(0.106)
Years since marriage	-	0.003	0.005
		(0.004)	(0.003)
Age difference of spouses	-	-0.009	-0.011
		(0.007)	(0.007)
No. of females in HH	-	-0.059	-0.046
		(0.042)	(0.043)
Total HH income (in ₹)	-	-0.000002	-0.000003
		(0.000002)	(0.000002)
HH land holding (in sq. ft.)	-	0.0000002	0.0000002
		(0.0000004)	(0.0000004)
Number of outstanding loans of the household	-	0.099***	0.070***
		(0.024)	(0.027)
BMI	-	-0.008	-0.007
		(0.008)	(0.008)
Risk aversion	-	0.004***	0.004***
		(0.001)	(0.001)
Constant	0.689***	0.817***	0.948***
	(0.035)	(0.279)	(0.270)
New client Mean	0.689	0.689	0.689
Observations	360	360	360
R2	0.003	0.135	0.197
Cluster Fixed effects	No	No	Yes

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

This table consists of results of regressing whether the woman makes the decision about how to use the loan in the household on customer type by using OLS. The Column (1) has no controls, Column (2) has demographic and behavioral controls, such as religion, caste, family size, education, years passed since marriage of the customer, age difference of the spouses, number of females in the household, total monthly household income, the landholding of the household, number of outstanding loans by the household, BMI, and risk aversion of the customer, and Column (3) has demographic and behavioral controls along with cluster fixed effects.