

Women’s Economic Development and Empowerment at individual, household, and community levels

Pre-analysis plan

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Abstract

We will evaluate the importance of women’s economic development for their empowerment at the individual, household and community levels. For this purpose, we will evaluate a multifaceted programme which provides a conditional loan, free assets and training to ultra-poor women for their economic development. This programme helps women to engage in economic activities which might increase their empowerment at different levels. To test this hypothesis, we will estimate the impacts of this programme on women empowerment using a randomized control trial with three waves of surveys. A baseline and an endline surveys were conducted in 2016 and 2019, respectively and these surveys collected data on women empowerment, particularly, women’s risk-aversion, patience, participation in intra-household decision-making, intimate partner violence (IPV), mental health and social inclusion. We will conduct another wave of endline survey, covering all indicators of empowerment from the previous surveys and on top of them, it will cover other indicators of empowerment, including the quality of the spousal relationship, spousal transfer, labor division between spouses, allocation of household resources, altruism and trust. These two rounds of endline surveys will also allow us to evaluate the short- and long-term impacts of women economic development on their empowerment. Moreover, we will examine potential mechanisms by investigating relevant mediating and moderating factors.

1. Introduction

Empowering women is crucial for economic growth and poverty reduction. However, women empowerment has complex dimensions, therefore a multifaceted programme is required to

promote this at different levels. Our objective is to understand the importance of women's economic development for their empowerment at individual, household and community levels. For this purpose, we will evaluate a comprehensive programme that offers a conditional loan, free assets and training to ultra-poor women. This programme helps women to engage in income-generating activities that might trigger their empowerment at different levels. Particularly, we expect an increase in women's risk-taking attitude, patience level, willingness to participation and actual participation in intra-household decision-making, quality of the spousal relationship, women's transfer to their husbands, mental well-being, women's share in household resources, social connections, altruism and trust and a decrease in intimate partner violence.

To test our hypotheses, we will use an existing randomized control trial (RCT) of the above-mentioned comprehensive programme. This programme was implemented by BRAC¹ in Bangladesh. The randomization was done at the branch office.² The research covers 88 branch offices (66 treatment and 22 control branches) in 11 districts. Before the programme started, a baseline survey was done in 2016, covering 8,973 eligible women (1,931 control and 7,042 treatment). One year after the programme ended, an endline survey was conducted, targeting to interview a random sub-sample of two-thirds of the treatment households and all control households. With 10% attrition rate, 4,212 treatment and 1,739 control women could be interviewed in the endline. Both of these surveys collected data on women empowerment, including women's risk-aversion, patience, participation in intra-household decision-making, IPV, mental health and social inclusion.

We will collect another round of endline survey seven years after the programme ends. This survey will cover all women from the baseline survey. Assuming 15% attrition rate, we expect to be able to interview ~6000 treatment and ~1600 control women. This round of survey will collect data on all indicators of empowerment covered by the previous rounds. On top of these indicators, it will also collect data on other indicators of empowerment, particularly, the quality of the spousal relationship, spousal transfer, labor division between spouses, allocation of household resources, altruism and trust.

¹BRAC is a large international non-government organization (NGO) originated in Bangladesh. It operates several development programmes.

²The smallest rural geographical unit covering a radius of 6-7 km.

2. Research Questions

Evidence shows that women’s economic development increases their empowerment at the individual-level, i.e., making them more risk-seeking and future-biased ([Ara, 2021](#)). Women’s economic development also increases women’s participation in intra-household decision-making ([Ara, 2021](#)) and decreases IPV ([Das et al., n.d.](#)). However, other dimensions of the household-level empowerment, for example, intra-household decision-making preferences, intra-couple dynamics, allocation of household resources and mental health are yet to be examined. Moreover, we will look at the impact of these transfers on the community-level empowerment, such as social networks and social preferences.

In sum, we have three broad research questions and each question has a set of outcomes to be examined.

1. Are the impacts of women’s economic development on their empowerment at the individual-level sustained? Specifically, what are the impacts on risk-seeking attitude and patience level?
2. What is the impact of women’s economic development on their empowerment at the household-level? Particularly, what are the impacts on women’s intra-household decision-making preferences and participation in intra-household decision-making, quality of spousal relationship (including spousal communication), spousal transfer, husband’s economic activities, labor division between spouses, IPV, allocation of household resources and women’s mental health?
3. What is the impact of women’s economic development on their empowerment at the community-level? Specifically, what are the impacts on social connections in the community (i.e., visiting people, friendship, casting votes, participating in village court) and social preferences (i.e., altruism and trust)?

3. The Intervention: Credit-based Graduation Programme

BRAC originated the Ultra-Poor Graduation (UPG) programme in Bangladesh in 2002. The intervention has also been replicated worldwide in partnership with governments, NGOs and multilateral institutions across different contexts in more than 50 countries ([Banerjee et al., 2015](#)). As of 2024, the program had reached more than 14 million people from 3.1 million

ultra-poor households in these countries.³

Our research builds on BRAC's credit-based graduation programme. The programme followed a rigorous multi-stage process to identify the beneficiary households (Bandiera et al., 2017; Rahman, Bhattacharjee and Das, 2021). The programme staff select the poorest villages and in selected villages, they conduct a participatory wealth ranking (PWR) exercise, where the households of a community are ranked into several wealth groups (very poor, poor, middle-class, non-poor). Then the staff interview the households from the bottom three wealth ranks to gather information on eligibility (criteria listed below). Based on the survey, as well as additional approval by senior-level BRAC staff, the final list of beneficiaries is selected.

In 2007, BRAC started implementing this credit-based model to target the marginally better-off ultra-poor households. The households who met the selection criteria of the original model, received the grant-only package and who met the selection criteria of the credit-based programme, received the loan and other supports.

The selection criteria of the credit-based graduation program are as follows:

- (i) have to be dependent on seasonal or irregular income;
- (ii) need to have ≤ 30 decimal land;
- (iii) have not been able to use loans successfully in the past for productive assets;
- (iv) must have school-age children (6-14 years) who work to assist in income generation for the household;
- (v) failed to consume meat or egg for any meals in the past three days.

Each beneficiary household must satisfy at least three out of the five criteria listed above to be eligible for the conditional loan and other forms of support.

The programme also follows two exclusion criteria before checking the eligibility criteria listed above. First, the programme excludes those households which do not have adult females who are capable of working because the programme targets women. Second, The programme excludes those households which are already receiving support from Government/NGO or a member of microfinance to prevent duplication.

The main female member of the selected household (referred to as the beneficiary) re-

³<https://www.brac.net/program/ultra-poor-graduation/>

ceived the support package. The components of the support package are as follows:

1. Enterprise Development Training

Each beneficiary received training from BRAC on the productive asset, they selected. This training aims to help beneficiaries learn how to maintain and care for their asset purchased through loans. The programme beneficiaries could select either of the following assets: livestock rearing, poultry rearing, or agriculture. The speciality on which the beneficiary was trained was done in consultation with BRAC staff since the geographical setup and surroundings of participant households, their prior experience in managing an enterprise, as well as the physical capability of the women, needed to be taken into account. Once training selection was finalized, participants received a three-day long classroom training. Later in the program cycle, they received another seven days of refresher training.

2. Conditional loan

Upon completion of the enterprise training, beneficiaries received a conditional loan of a maximum of BDT 15,000, which is about 86% of the annual per capita income of selected ultra-poor households, for purchasing productive assets.⁴ The loan was typically disbursed within 21 days of training. Beneficiaries were allowed a two-month grace period for repaying the loan, and the loan must be entirely repaid within one year or 11.5 instalments. After successfully repaying the loan, beneficiaries were encouraged to take regular loans from BRAC's Microfinance programme.

3. Free supporting assets or Input

Each beneficiary received additional assets for free to support their enterprise with a maximum value of BDT 1000.⁵ These additional assets are referred to as input.⁶

4. Coaching

The beneficiaries also received bi-weekly coaching through one-to-one home visits and group visits.⁷ These visits covered asset monitoring, checking household well-being, training on financial management and asset diversification, and discussion on social

⁴The interest charged (20% declining method/ the flat rate is 8% if all instalments are paid on time) on this conditional loan is lower than the traditional microfinance interest rate (27% declining method/ the flat rate is 12%).

⁵For small enterprises (i.e., land cultivation), the ceiling for input was BDT 2150.

⁶If someone received a cow, she got poultry, medicine for the cow and tree seedlings as inputs.

⁷The participants received 12 home visits and 12 group visits during the programme period.

issues (e.g., child marriage, dowry, human trafficking). The module on dowry and domestic violence includes advice on the consequences of these issues and potential strategies to tackle them. It also includes a reminder of the legal ramifications of these practices.⁸

5. Consumption Allowance

Each beneficiary received a consumption allowance of BDT 210 (in cash) per week to support their daily expenses during the program cycle.⁹

6. Health and Social Support

For severe morbidity, the programme beneficiaries and their household members received financial assistance. In the case of mild illnesses, beneficiaries were referred to nearby health centers for treatment. Moreover, the programme staff check on potential social issues (e.g., school drop-outs, intra-household conflicts, etc.) and if any issue was identified, they referred the household to the relevant department/programme of Government or NGO for support.

7. Savings Advice

Each beneficiary was encouraged to save with the program according to their ability. The maximum ceiling of savings was BDT 150/month or BDT 30/week with a 7.5% annual interest rate. A general savings account was opened in the beneficiary's name with BRAC's Microfinance programme.

8. Community Resource Mobilization

Community resource is mobilized through forming a committee called the Village Social Solidarity Committee (VSSC). For community resource mobilization, BRAC formed a committee in each program village including well-connected and powerful people.¹⁰

⁸1-5 years jail sentence and/or 50,000 BDT fine as per Bangladeshi law for Dowry. 6-month jail sentence and 10,000 BDT fine for domestic abuse, with more stringency for repeated offenders.

⁹The allowance amount is 15% of the baseline income of our sampled households. The duration of the allowance varies across asset categories—24 weeks for small enterprises; 36 weeks for livestock, and 52 weeks for agriculture/nursery. The amount of allowance (Tk. 30 per day) is calculated as follows. Ultra-poor households targeted by the credit-based model generally consist of 4 members (as per the baseline survey of this study) According to the Household Income and Expenditure Survey (HIES) 2016 (BBS 2019), per capita per day rice consumption in rural areas is about 433 gram. Hence, each ultra-poor household requires about 1700 gram of rice per day. BRAC decided to help them purchase around 1 kg of rice per day through the allowance. The price of this amount of rice is Tk. 27. Hence, BRAC provided consumption allowance of Tk. 30 per day.

¹⁰The aims of forming committees are to maintain or strengthen customary systems of social support for the poorest, while also providing some more systematic, community-level protection against the social and environmental risks faced by the ultra-poor.

This committee is responsible for helping the programme beneficiaries to solve several problems, for example, mobilising resources to repair the houses, install latrines, survive during unprecedented times (i.e., natural disasters, road accidents); and help to enrol children in school.

4. Research Design

4.1. Sample

This research builds on a RCT, conducted by BRAC Institute of Governance and Development (BIGD) in 2016. Randomization was done at the branch office. The research covers 88 branch offices (66 treatment and 22 control branches) in 11 districts of Bangladesh. After their selection following a rigorous process (as mentioned in section 3), we completed a baseline survey in July 2016, covering 8,973 eligible households (1,931 control and 7,042 treatment).

The baseline survey collected detailed information from the main female member of the household on the demographic and socioeconomic characteristics of the household, including household composition, labor supply of each household member, occupation, income, assets, financial market participation, expenditures, food security, health outcomes, women’s mental health (anxiety) and women empowerment. This survey also collected data on IPV; however, with a limited set of questions, focusing on physical abuse and abuse for dowry. Since IPV in South Asia is often related to dowry disputes ([Ambrus, Field and Torero, 2010](#)), it included specific questions to capture this. Moreover, this survey collected data on risk (i.e., choosing lotteries) and time preferences (i.e., choosing between today’s and future payoffs). Thereafter, BRAC implemented the intervention described above in the treatment branches until December 2017.

An endline survey (hereafter referred to as endline1) was conducted in January 2019, a year after the completion of the programme, in which all households (1,931) in the control group and a random subsample of two-thirds of the households (4,666) in the treatment group were re-interviewed. This resulted in 4,212 treated and 1739 control households, with around 10% attrition in both treatment and control groups. The endline1 used the same modules as the baseline survey. In addition, it has an extended version of the IPV module, covering more indicators of physical and emotional abuse.

To address our research questions, we will conduct another round of survey (referred to

as endline2) covering all women who were interviewed at the baseline. Therefore, assuming a 15% attrition rate, we expect to interview $\sim 6,000$ treatment and 1600 control women.¹¹ Table 1 shows the sample size across experimental groups and survey rounds.

Table 1: Sample Size

Group	Baseline	Endline1 (ap- proached)	Endline2
Treatment	7,042	4,666	$\sim 6,000$
Control	1,931	1,931	$\sim 1,600$

We will recruit female enumerators to conduct the interviews. We will ask the women about the household structure and members’ demographic characteristics (i.e., age, education, occupation, labor supply), women’s participation in household decision-making, women’s mental health, their engagement at the community level, risk and time preferences as we asked in the previous two surveys (i.e., baseline and endline1). Moreover, they will be asked about their IPV experiences in detail in this round. We will also ask about women’s social preferences and willingness to participate in intra-household decision-making. Moreover, we will ask some questions to capture intra-couple dynamics.¹² Table A.1 shows survey modules by rounds.

4.2. Outcomes of interest

Table 2 shows the list of outcomes for each level of empowerment.

4.2.1. Individual-level empowerment

The programme increases women’s engagement in income-generating activities and income which might increase their entrepreneurship attitudes and, in turn, might make them take risks and value the future more than the present. Particularly, we expect that the programme would increase women’s risk-taking attitudes and increase their patience level.

¹¹We assume a higher attrition rate compared to the short-term one (10%) because of the larger time difference between these two endline surveys.

¹²The details on our outcomes of interest are available in the section 4.2.

Table 2: Outcome Matrix

Individual	Household	Community
Risk-seeking attitude and patience	Women’s intra-household decision-making preferences and participation in intra-household decision-making, quality of spousal relationship (including spousal communication), spousal transfer, husband’s economic activities, labor division between spouses, IPV, allocation of household resources and women’s mental health	Social network (i.e., visiting people, having friends in community, casting vote, participating in village activities, transfers to the community etc.) and social preferences (i.e., altruism and trust)

The details of how we will measure these outcomes are as follows.

Risk preferences

To measure risk aversion, we will ask one question for quantitative and one question for qualitative measures (i.e., self-reporting risk-taking behaviour). The quantitative measure is to choose one out of four hypothetical lotteries. The lottery gets increasingly risky with the first lottery referring to the highest risk and the fourth referring to the lowest risk. The qualitative measure consists of self-assessed risk-taking behaviour on a scale of 0-10, with 10 referring to the strongest willingness.¹³

Time preferences

To measure impatience, we will ask the women to make choices between today and the future in two situations (i.e., today vs one month after and today vs. two months after).

¹³To collect data on a scale, we will show the respondents a ladder with 10 stairs and explain to them the position of steps (i.e., lowest willingness to take risk at the bottom step and highest willingness to take risk at the top step). Then, we will ask them to choose one step as their response.

4.2.2. Household-level empowerment

The programme provides resources to women and increases their economic power which might increase their willingness to participate in intra-household decision-making and also increase their actual participation in intra-household decision-making and their agency (i.e. taking decisions without the husband’s permission).

We also expect that the resources provided to the women would allow them to share their earnings with their husbands which might lead to an increase in husbands’ income and also improve their spousal relationship and communication. We also hypothesise that if women have resources, their husbands might reduce financial support to run the household.

Moreover, we expect that the husbands might be motivated to help wives with household activities, acknowledging their wives’ contribution to the household income.

We expect that the increase in women’s economic activities might translate into IPV reduction because of the reduction in household income scarcity. However, we acknowledge that women’s access to resources might increase IPV incidences because husbands might use IPV to control wives’ resources (following instrumental theory)([Eswaran and Malhotra, 2011](#); [Tauchen, Witte and Long, 1991](#)) and also a transfer to women might threaten husbands’ status in the household ([Angelucci, 2008](#)).

Furthermore, we expect that women’s economic power might decrease the gender gap in household resource allocation. Women’s economic power might also decrease women’s anxiety.

The details of how we will measure these outcomes are as follows.

Intra-household decision-making preferences

To elicit these preferences, we will adapt and expand the standard module of DHS on women’s participation in household decisions ([NIPORT et al., 2020](#)). For example, while the DHS bundles all household major decisions together within one question, we will separate these decisions into more specific domains. In particular, we will ask women whether they are willing to make decisions regarding (i) household daily expenses; (ii) food consumption; (iii) how their individual earnings will be spent, (iv) household saving decisions (where to save/how to spend savings) (v) children’s education; (vi) marriage of children; (vii) medical treatment of household member; (viii) Visits to family or relatives; and (ix) own health care. Their response will be coded on a scale of 0-10, with 10 referring to a stronger willingness.

Participation in household decision-making

We will follow similar domains, we propose for the intra-household decision-making preferences. We will ask the respondents about who makes these decisions. We will also ask whether women need permission from their husbands to do activities, for example, starting new income-generating activities, buying clothes for themselves and child, selling expensive assets, etc.

Intra-couple dynamics

To capture intra-couple dynamics, we will ask about the quality of spousal relationships¹⁴, frequency of communication between spouses in the last month and transfers between spouses (cash or in-kind) in the last two years. We will also measure trust level by asking to what degree women believe their husbands have only the best intentions on a scale of 0-10, with 10 referring to the highest belief and how much of an unexpected monetary gain they want to give to their husbands.

Husband's economic activities

We will ask the respondents about their husband's occupation and income.¹⁵

Labor division

We will measure labor division by asking a series of questions on how frequently the husband helped the respondent to do household chore activities in the last month as follows: cooking, cleaning, washing, grocery shopping, children's education, playing with children and taking children to the doctor when needed.

IPV

We will measure the programme impacts on emotional, physical and sexual IPV experiences of the respondents in the last 12 months. The IPV-related questions are adapted from a national survey on violence against women in Bangladesh (BBS, 2016). We will also ask about physical and mental abuse for dowry because IPV in South Asia is often related to dowry disputes (Ambrus, Field and Torero, 2010).¹⁶

¹⁴We will ask how satisfied the respondent is with her relationship with her husband on a scale of 0-10, 0 referring to lowest satisfaction and 10 referring to highest satisfaction

¹⁵The respondents will be allowed to take help from their husbands to respond to these questions.

¹⁶In South Asia, the bride's father gives money or in-kind to the groom's family, which is referred to as dowry. Since girls are seen as a (financial) burden, parents are expected to pay in-laws dowry to take this

Allocation of household resources

We will measure the allocation of household resources by asking the expenditure for cosmetics, entertainment, transport, clothing, footwear and medical expenses for the respondents and their other household members.

Mental health

We will measure mental health by capturing women’s anxiety, particularly, by asking about the issues which are making them anxious.

4.2.3. Community level empowerment

The programme enables women to be involved in income-generating activities which might increase their interaction with the community. Also, the programme reduces women’s income constraints which might increase their positive reciprocity and reduce negative reciprocity. We also expect that a reduction in women’s income constraints might increase their trust in others and increase their willingness to donate.

The details of how we will measure these outcomes are as follows.

Social connection

To measure social connection, we will ask about transfers in/out (cash/in-kind) at the community-level, visiting people, making friends, casting votes and participating in the Shalish (i.e., local/ village court).

Positive and Negative reciprocity

To measure positive reciprocity, we will ask two questions as follows: (i) preference (in monetary form) for offering a gift in exchange for help and (ii) self-assessment about willingness to return a favour. Both questions will be assessed on a scale of 0-10, with 10 referring to the strongest willingness ([Falk et al., 2018](#)).

To measure negative reciprocity, we will use three questions to elicit their willingness (measured on a scale of 0-10, with 10 referring to the strongest willingness) to (i) take revenge, (ii) punish someone for unfair behaviour towards themselves, and (iii) punish someone for

burden. If a dispute arises around this payment, the husband and in-laws might put pressure on the woman, which may lead to violence or worse, even if the couple are married for a while.

unfair behaviour towards others (Falk et al., 2018).

Trust

We will ask one question to measure trust level by asking to what degree they believe people have only the best intentions on a scale of 0-10, with 10 referring to the highest belief (Falk et al., 2018).

Altruism

We will use two questions on the donation: (i) how much of an unexpected monetary gain they want to donate and (ii) self-assessment of willingness to donate on a scale of 0-10, with 10 referring to the strongest willingness (Falk et al., 2018).

5. Analysis

5.1. Average Treatment Effects

Taking advantage of the RCT, we will use the data from the endline2 to estimate the impacts of women’s economic development on their empowerment. To increase the efficiency of estimates, we will control some baseline characteristics, for example, women’s age, education, income, husband’s age, education and income.¹⁷ We will estimate the following linear regression:

$$y_{ibd} = \beta_0 + T_{bd} \cdot \beta_1 + \chi_{ibd} \cdot \Theta + \gamma_d + \epsilon_{ibd} \quad (1)$$

where y_{ibd} is the set of outcomes of interest (see section 4.2) for woman i in branch b in district d in the endline2. T_{bd} is an indicator variable taking the value 1 if the branch b was assigned to a treatment (programme) and 0 otherwise. χ_{ibd} is a vector of covariates (i.e., respondent’s age, education and income, and husband’s age, education and income). These covariates are included to improve the precision of the estimates. γ_d are district fixed effects; ϵ_{ibd} is the error term. Given randomization was done at the branch level, standard errors are clustered by branches.

¹⁷To select controls, we will also do a joint orthogonality test obtained by regressing all pre-intervention characteristics on the treatment variable can be an alternative to conducting a t-test for each characteristic (McKenzie, 2015) and include the indicators which are not balanced between treatment and control groups.

In the endline1 survey, we found that 23% of selected treatment women did not participate in the programme. To address this imperfect compliance, we will use the instrumental variable (IV) approach to estimate local average treatment effects (LATE). We will use treatment assignment as an IV for participation in treatment.

5.2. Heterogeneity Analysis

We will estimate the heterogeneity of the effects using the following regression.

$$y_{ibd} = \beta_0 + T_{bd} \cdot \beta_1 + N_{ibd} \cdot \beta_2 + T_{bd} \cdot N_{ibd} \cdot \beta_3 + \chi_{ibd} \cdot \Theta + \gamma_d + \epsilon_{ibd} \quad (2)$$

where N_{ibd} is the set of moderating factors. β_3 will capture the heterogeneity of the programme impacts and the standard errors are clustered by branches.

We will use moderating factors of the baseline status of our outcomes of interest. Moreover, we have the following hypotheses for heterogeneity analysis.

- Treatment effect on individual- and household-level empowerment might be lower among those who were engaged in income-generating activities at baseline. Because they already had economic empowerment to some extent at baseline.
- Treatment effect on IPV might be lower among those who were more empowered at household-level at baseline.
- Treatment effect on risk-seeking attitude, patience and trust might be lower among those who did not experience violence. The baseline IPV experience will influence the treatment effect on preferences because we hypothesise that the IPV experiences and preferences are correlated.

5.3. Comparison between short- and long-run impacts

To compare short- and long-term impacts, we will use the outcomes that were measured at both endlines (see Table 3). We will estimate the following linear regression.

$$y_{ibd} = \beta_0 + T_{bd} \cdot \beta_1 + t_{ibd} \cdot \beta_2 + T_{bd} \cdot t_{ibd} \cdot \beta_3 + \chi_{ibd} \cdot \Theta + \gamma_d + \epsilon_{ibd} \quad (3)$$

where t_{ibd} is an indicator variable taking the value 1 if it is endline1 and 0 if it is endline2. β_3 will capture the difference between short- and long-run impacts and the standard errors are clustered by branches.

Table 3: List of indicators available in both endlines

Individual	Household	Community
Risk-seeking attitude and patience	Women’s participation in intra-household decision-making, IPV, husband’s economic activities and women’s mental health	Social network (i.e., visiting people, casting vote, participating in village activities, transfers to the community etc.)

5.4. Mediating Analysis

To understand the potential mediating factors of the impacts of women’s economic development on their empowerment, we will examine treatment effects on the potential mediating factors (see table 4) using equation 1. Then, we will run the equation 1 for the main outcomes (see section 4.2) with and without controlling the mediator factor to test whether the inclusion of the mediator factor changes the treatment effect on these outcomes.

The details of the potential mediators are as follows.

Individual-level empowerment

The programme might promote entrepreneurship attitudes among women which might make women more risk-taking and value the future more. So, we expect that the programme effect on the respondents’ risk and time preferences might be mediated by the impact on their economic status (i.e., self-employment, livestock ownership, savings and credit). Moreover, given that violence is more likely to change preferences, the second mediator for risk and time preferences might be IPV experiences, for example, physical, emotional and sexual abuse from the husband.

Household-level empowerment

The programme staff encourage the husbands to attend the home coaching sessions which discuss social issues; domestic violence due to dowry is one of them. Therefore, we expect

Table 4: List of potential mediators

Outcome	Potential mediator
Risk preferences	Self-employment status of the respondent; livestock ownership of the respondents; savings, taken loan from BRAC Microfinance between the endline1 and endline2 surveys; Physical, emotional and mental abuse from the husband
Time preferences	Self-employment status of the respondent; livestock ownership of the respondents; Physical, emotional and mental abuse from the husband
Intra-household decision-making participation and preferences	IPV experiences
Intra-couple dynamics (i.e., relationship, communication, transfers)	Husband’s participation in the programme
Husband’s income	Transfers from wife
IPV	Intra-couple dynamics (i.e., relationship, communication, transfers); Husband’s participation in the programme
Mental health	IPV experiences
Social networks	Respondents’ transfers outside the household
Social preferences	Respondents’ transfers outside the household

that the husbands’ participatio in the programme’s activities might improve their spousal relationship. Also, the couple’s joint participation in the primary asset selection ¹⁸ and loan repayment for the primary asset might improve their spousal relationship.

Moreover, spousal relationship, communication and spousal transfers are more likely to influence IPV experiences. Therefore, we expect that the programme might improve intra-couple dynamics (i.e., relationship, communication, transfers) and it, in turn, might reduce IPV. Furthermore, the programme encourages the husbands to attend the coaching sessions with their wives. We expect that the husbands’ participation in these sessions might improve

¹⁸The programme staff informed the participants what type of asset they could choose to purchase using the loan. Then, the participants decide. They are allowed to consult with others.

their relationship with their wives and it, in turn, might reduce IPV.

Furthermore, The programme increases women's income which might allow them to give financial support to their husbands to expand business/income-generating activities and therefore, it might increase the husband's income.

Lastly, IPV experiences are more likely to influence women's willingness to participate and actual participation in intra-household decision-making and their mental health. The programme reduces IPV and it, in turn, might increase women's willingness to participate and actual participation in intra-household decision-making and also reduce women's anxiety.

Community-level empowerment

The programme increases women's income and enables them to make some transfers to society which might affect their social connections, altruism and trust in others. Moreover, IPV experiences might reduce women's trust in others. Therefore, we expect that the programme might reduce IPV and it, in turn, might increase altruism and trust in others.

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Appendix

A. Appendix

Table A.1: Survey modules by survey round

SL	Module	Baseline (2016)	Endline1 (2019)	Endline2 (2024)
1	Household demographic characteristics	Yes	Yes	Yes
2	Household members' education	Yes	Yes	Yes
3	Household members' employment	Yes	Yes	Yes
4	Information on government/non-government help	Yes	Yes	Yes
5	Husband's involvement in intervention (UPG)	No	No	Yes
6	Land accumulation	Yes	Yes	Yes
7	Amount of land which is not owned by the household	Yes	Yes	Yes
8	Housing and socio-economic condition	Yes	Yes	Yes
9	Business/productive asset accumulation	Yes	Yes	Yes
10	Information about ownership of asset (taken on rent/share or rented out)	No	Yes	Yes
11	Non-business asset/non-productive asset accumulation	Yes	Yes	Yes
12	Household's savings	Yes	Yes	Yes
13	Respondent or her spouse's outstanding loan (in kind or cash)	Yes	Yes	Yes
14	Loan taken from BRAC	Yes	Yes	Yes
15	Loan taken from non-BRAC sources	Yes	Yes	Yes
16	Respondent or her spouse's lending out	Yes	Yes	Yes
17	Receiving transfers in cash/kind	Yes	Yes	Yes
18	Giving out transfers in cash/kind	Yes	Yes	Yes
19	Spousal transfer	No	No	Yes
20	Coping with different crises	Yes	Yes	Yes
21	Discount rate	Yes	Yes	Yes
22	Risk aversion	Yes	Yes	Yes
23	Intra-HH decisions preference	No	No	Yes
24	Social preference and trust in husband	No	No	Yes

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Table A.1 – Survey modules by survey round

SL	Module	Baseline (2016)	Endline1 (2019)	Endline2 (2024)
25	Food security	Yes	Yes	Yes
26	Husband’s permission to do activities	No	No	Yes
27	Control over important family decision	Yes	Yes	Yes
28	Social inclusion and network	Yes	Yes	Yes
29	Spousal relationship	No	No	Yes
30	Labor division	No	No	Yes
31	Mental health (anxiety)	Yes	Yes	Yes
32	Family planning	Yes	Yes	Yes
33	Health seeking behaviour	Yes	Yes	Yes
34	Food consumption at the household level	Yes	Yes	Yes
35	Non-food expenditure	Yes	Yes	Yes
36	Intimate partner violence	Yes (lim- ited)	Yes (lim- ited)	Yes (Ex- tended)