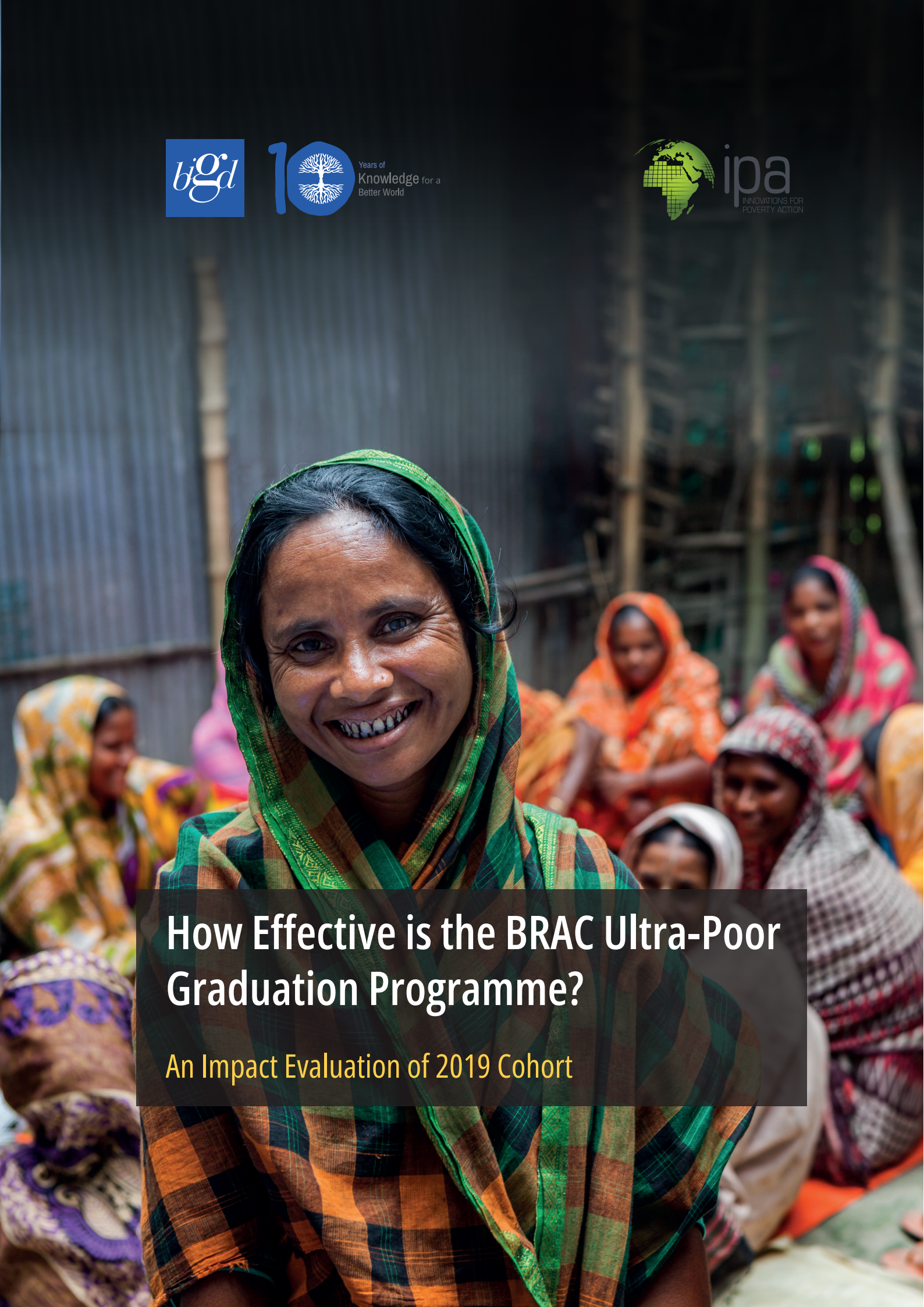

How Effective is the BRAC Ultra-Poor Graduation Programme?

An Impact Evaluation of 2019 Cohort

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List of Acronyms

ASA	Association for Social Advancement
BIGD	BRAC Institute of Governance and Development (BIGD), BRAC University
DFS	Digital Financial Services
IGVGD	Income Generation for Vulnerable Group Development
IPA	Innovations for Poverty Action
MFI	Microfinance Institution
NGO	Non-governmental Organization
RCT	Randomized Controlled Trial
RDRS	Rangpur Dinajpur Rural Service
SDG	Sustainable Development Goal
TMSS	Thengamara Mohila Sabuj Sangha
UN	United Nations
UNU-WIDER	United Nations University World Institute for Development Economics Research
UPG	Ultra-Poor Graduation
VGD	Vulnerable Group Development
VGF	Vulnerable Group Feeding
VSSC	Village Social Solidarity Committees
WASH	Water, Sanitation, and Hygiene

Executive Summary

Background and Objective

BRAC's Ultra-Poor Graduation (UPG) programme, introduced in 2002, aims to support people to lift themselves out of extreme poverty. BRAC's Graduation approach is a comprehensive, time-bound, and sequenced set of interventions—designed to enable extreme- or ultra-poor households to achieve key milestones towards sustainable livelihoods and socioeconomic resilience, placing them on the pathway out of extreme poverty.

From the beginning, BRAC has been making necessary adjustments to UPG's design to make it more effective, based on continuous programmatic learning and research findings, combined with the changes in the broader context of poverty and growth in Bangladesh. Consequently, the programme has gone through several iterations and modifications over the years. For example, previously, the programme offered pure grants; in 2007, it also started offering a credit plus grant-based intervention after learning that the ultra-poor is a heterogeneous group and not all of them required a completely grant-based intervention (Matin & Rahman, 2018). The nature of extreme poverty also changed over time: more recent UPG cohorts are found to be better off compared to the earlier cohorts in terms of various socioeconomic characteristics, driven primarily by the overall macroeconomic changes in the country (Matin & Rahman, 2018).

In response to these changes, BRAC again significantly modified the targeting criteria as well as the programme design in 2017. In the new design, the ultra-poor are categorized into three groups based on their income, household composition, initial asset base, etc. Group 1 consists of ultra-poor participants over 50 years old. Group 2 and Group 3 consist of participants aged 18–50, and Group 3 participants are better off than those in Group 2. The main difference between the programme packages for Groups 2 and 3 is in their composition of grant and loan.

The redesigned programme also repurposes the consumption stipend from the earlier model to offer a savings match—a mechanism in which UPG puts down the same amount, up to BDT 100 per month, as a participant's savings with the programme for 18 months. The match aims to incentivize savings behaviour, improve resilience, and allow future investments for the

participating households. Due to the overall economic growth and the improvement in basic food security in Bangladesh, the need for a consumption stipend is no more seen as important as before.

To assess the effectiveness of the newly-designed UPG, researchers from the BRAC Institute of Governance and Development (BIGD), Innovations for Poverty Action (IPA), Northwestern University, University of Maryland, and Yale University have teamed up to conduct an impact evaluation, using a randomized controlled trial (RCT) on the 2019 UPG cohort. The study has been designed to assess the overall impact of the new graduation programme on Group 2 and Group 3. The study also intended to assess the marginal impacts of the savings match and specific messaging on saving, but the plan was withdrawn due to the disruptions caused by COVID-19.

For the overall impact assessment, in 50 randomly selected BRAC branches that implemented UPG in 2019, 279 villages were randomly assigned to receive the programme. In each of these villages, 60% of the households, in both Group 2 and Group 3, were randomly selected to receive the programme (treatment). In these branches, another 276 villages were randomly assigned to the control group, where the programme was not delivered. To assess the impact of the intervention, the treatment and control groups are compared based on the data collected through in-person surveys conducted between January and April 2022. Of the 3,358 surveyed households, 1,678 were treatment and 1,680 were control. The study results presented in this report are based on these households.

Impact Evaluation Findings

Using the learnings from the different UPG cohorts, BRAC identified four core pillars of the Graduation approach, namely (1) livelihood promotion, (2) social protection, (3) financial inclusion, and (4) social empowerment. When BRAC redesigns and adjusts the programme's components, sequence, and durations according to the context, it does not veer from these core pillars. These four interrelated broad outcomes result from positive changes in a host of different factors including assets, food security, savings, financial inclusion, health, social integration, and the productive abilities of the households. The key findings of the study are given below, organized within the four pillars:

- **Livelihood promotion:** The first of the four pillars, livelihood promotion, ensures that the participants can start activities that generate higher and more sustainable income and consequently escape poverty. Services provided by UPG on this aspect include resources to find employment—including apprenticeships, vocational education, and training—and asset transfers/loans to start a small enterprise.
    - Significant positive impacts of the programme are found on several labour market outcomes for the participants: employment rate, monthly working hours, monthly income, and self-employment rate. For example, the magnitudes of the impact of UPG on their working hours are 73% for Group 2 and 101% for Group 3. Consequently, their per capita household income also increased significantly, 37% for Group 2 and 59% for Group 3 relative to their control groups.
    - As a result, the programme decreases the probability of households living under the extreme poverty line (USD 1.90). From the baseline, 20 percentage points fewer in Group 2 and 24 percentage points fewer in Group 3 treatment households lived below the extreme poverty line during follow-up. Though the rates also decreased for the control groups, the decreases were small, about 6 percentage points.
    - The study also finds positive impacts of the programme on other outcomes of interest, including business expenditure, access to hygienic latrines, food security, and ownership of productive and non-productive assets. The impact is larger for Group 3 in these outcomes except for access to hygienic latrines and food security.
    - The consistently larger economic impact on Group 3, which happens to be relatively better off at the baseline, can be explained by the threshold argument provided by Balboni et al., (2021). They observed that the UPG participants from the 2007 cohort who had sufficient initial asset endowment to pass a certain asset threshold with the help of the programme transfers had stronger programme impacts and were more likely to escape poverty compared to those with smaller initial endowments.

- **Social protection:** UPG aims to create an enabling environment for participants to have better access to social protection by increasing their knowledge about and access to government services and social safety nets.
    - However, the study finds no significant impact of the programme on the share of households receiving support or the average amount of support received from the government
    - As the programme was delivered during COVID-19, the need for support was possibly high among all households due to the pandemic-induced economic shock. More control households than in normal times probably sought support from the government or other sources. In the case of treatment households, the regular support, as well as the one-time stipend as pandemic support, provided by UPG may have somewhat alleviated their need for external support. Hence, the study was unable to find a significant impact on social protection outcomes.
- **Financial inclusion:** An important objective of the programme is to enable the participants to directly access different formal and informal financial services. Thus, the programme included financial literacy training and a savings match facility to build their financial capability.
    - The study finds a large positive impact of the programme on the share of participants with savings. The amounts saved are also significantly higher for the treatment group. Treatment households had an average of BDT 5,391 in savings, while control households` average savings was BDT 2,418 during follow-up. No heterogeneity is observed in savings-related outcomes across Group 2 and Group 3. Unsurprisingly, 25 percentage points more programme participants had savings at BRAC and the amounts saved with BRAC was BDT 1,519 higher for them, compared to the control group.
    - The proportions of households with loans and the average amounts of loans per household increased in both treatment and control groups, most likely due to COVID-19. The increase was significantly larger for treatment households, both in groups 2 and 3, compared to their control counterparts.
    - However, the real difference between the treatment and control groups can be seen in the

composition of loans. The treatment groups relied more on formal loans. On the contrary, control households appeared to rely more on informal loans.

- Finally, the proportions of respondents with BRAC loans are significantly higher in both treatment groups compared to their control counterparts. Though, among those who received a loan from BRAC, there is no difference between treatment and control in the size of the BRAC loan. This means while the programme increases the chances for participants to receive a BRAC loan, it does not increase their likelihood of getting larger loans.
- In the case of digital financial services (DFS), even though access, i.e., digital account holding, increased significantly for the treatment group, the use of these accounts did not. Savings in DFS was close to zero across all households. This, however, is expected given the low level of digital literacy among the participants.

- **Social Empowerment:** A core element of the social empowerment pillar in UPG is community mobilisation, which facilitates participants' social integration by forming a committee comprising key members of the village. Coaching, mentorship, and peer-to-peer learning provided through the programme aim to increase participating women's household-level decision-making power, confidence, and community integration. Economic support provided by the programme is also expected to empower women economically, and eventually socially.
  - The programme significantly increases the employment and incomes of the participants and their other female household members, indicating its positive impact on women's economic empowerment.
  - While the study does not look into the mechanisms of the committee or cover social inclusion and confidence, it looks into the household-level decision-making aspect of women empowerment and finds a mixed impact. Most respondents in both treatment and control households reported that they had an influence on different household-level decisions, with very little to no changes from baseline to endline. In the follow-up survey, the respondents were also asked additional questions on their influence on several everyday purchasing decisions. On these questions, significantly fewer women

across all groups responded in the affirmative, with no statistically significant difference between treatment and control. The apparent anomalous results can be attributed to the subjective interpretation of the questions and the difficulty of measuring employment.

Concluding Remarks

Overall, the redesigned UPG programme is effective in substantially improving the lives of the programme participants in Group 2 and Group 3 through significant improvements in participants' employment rate, working hours, and income, resulting in a large increase in per capita income and simultaneous reduction in extreme poverty. The impact on most other important outcomes, with a few exceptions, is also positive and significant.

What is more important, the programme seems to have increased the resilience of the participating households against external shocks like COVID-19, by creating more secure and productive sources of employment, higher savings, and greater access to formal financial markets. Their resilience could be a reason why no impact of UPG was found on accessing government assistance during the pandemic despite the programme's effort to connect the participants with these services.

One important takeaway is the persistently greater impacts on Group 3, relatively better-off households, compared to the impacts on Group 2. These findings reinforce previous findings on the notion of threshold asset endowment level, below which it becomes difficult for a household to escape poverty. The programme should consider bringing further variations of assets/loans depending on the initial asset base of the participants, which could not only significantly increase programme impact but also address the potential increase in intergroup inequality (between Group 2 and Group 3) caused by the programme.

Finally, the anomalous results on women's empowerment highlight the illusive nature of these indicators and the importance of developing more sophisticated tools for measuring these important outcomes. It also highlights the tenuous relationship between women's economic and social empowerment. It inspires the question of what should be the balance between the programme efforts for economic and social empowerment, how to improve the latter, and how to measure it well.

1. Introduction

Globally, over half a billion people were extreme poor as of 2019 (World Bank, 2022). In Bangladesh, an estimated 10.5% of the people live in extreme poverty, and the rate is anticipated to have risen substantially due to COVID-19[1]. These estimates are based on the global extreme poverty line, which is drawn at 1.9 dollars a day per person (updated to 2.15 dollars in 2022 to adjust for inflation).

The nature of poverty varies widely. And often the extreme poor are trapped in the most complex, unique, and interlocking challenges, making it difficult for them to escape poverty by using existing opportunities. Most often their economic vulnerabilities are inextricable from their socio-political marginalization.

A major goal of government policies and development programmes in the developing world is reducing poverty. Microfinance, for instance, has equipped many poor people with opportunities to develop enterprises and generate income for their households (Banerjee, Karlan, & Zinman, 2015; Habib & Jubb, 2015). As of 2018, about 139.9 million people were active microcredit clients (Convergences, 2019). However, mainstream development initiatives have not been very successful in addressing extreme poverty because of its unique challenges.

Realizing the need for a targeted, integrated approach to support the extreme- or ultra-poor people to escape poverty, BRAC came up with the Challenging the Frontiers of Poverty Reduction: Targeting the Ultra Poor (CFPR-TUP) programme, which was first piloted in Bangladesh in 2002. Later renamed the Ultra-Poor Graduation (UPG), the highly successful programme is now being implemented in about 50 countries, reaching 14 million people in 3.1 million households through partnerships with 100+ non-profits, governments, foundations, and donors. In the Graduation approach, the poorest beneficiaries are selected through a multi-staged process and are offered a multifaceted support package—asset transfer, matched savings, entrepreneurship training, and health and social awareness, coupled with coaching and mentoring for 18–24 months.

[1] BRAC: Graduation Programme, [Website], https://www.brac.net/program/ultra-poor-graduation/

In the beginning, the graduation model was purely grant-based—a sizable productive asset was given for free—which has been a distinguishing feature of the programme. The grant-based intervention was introduced based on the understanding that ultra-poor households are less likely to benefit from microcredit (Ahmed, 2009; Morduch, 1998) and that they needed a 'big-push' to get out of poverty.

The grant-based graduation model has been proven effective in improving ultra-poor households' income, food security, and savings (Ara et al., 2017; Asadullah & Ara, 2015; Gallardo et al., 2021; Krishna et al., 2012; Sulaiman, 2018). A large-scale randomized controlled trial (RCT) conducted by Bandiera et al. (2017) on the households receiving the grant-based support package—covering over 21,000 households in 1,309 villages, surveyed four times over seven years—found a 21% increase in income and a 14% lower probability of being below the extreme poverty line among the programme participants compared to their counterparts in control villages. Though the increase in consumption expenditure was modest (11%), the values of their household durables, productive assets, and landholding increased by 57%, 159%, and 139%, respectively. The study found that the impacts after seven years were at least as large as those after four years, indicating that many programme participants were on a sustainable course out of poverty (Bandiera et al., 2017).

However, to adapt to the changing contexts, the UPG programme has gone through several modifications over the years, informed by evidence, programme experience, and observations. In 2007, UPG was customized to address the heterogeneity among the ultra-poor (Matin & Rahman, 2018). Along with the grant-only intervention, BRAC started to implement a hybrid intervention consisting of credit and grants. Ultra-poor households receiving the hybrid intervention were relatively better off compared to those receiving the grant-only intervention (Rahman et al., 2021). The hybrid intervention was also found to be very effective in improving the livelihoods of ultra-poor households (Rahman et al., 2021).

To further customize the programme, in 2017, BRAC divided the ultra-poor people into three distinct groups. Group 1 consists of the elderly population aged over 50 years, and the participants receive support to access appropriate government social safety net schemes and a small asset or business as a grant. Group 2 consists of participants aged 16-50 years, who receive assets and have to return 30-50% of the initial asset value. Group 3 consists of participants who

are in the same age range as Group 2 but slightly better off; they receive loans from BRAC to purchase productive assets and need to repay 80% of the loans. Alongside other services, participants in each group are also provided with necessary training on utilizing the transferred assets efficiently. The redesigned programme also repurposed the consumption stipend, provided in the older design, to offer a savings match facility to encourage savings among the participants. An upublished quasi-experimental study by the BRAC Institute of Governance and Development (BIGD) on the 2017 cohort found signficant positive impact of the newly designed programme.

To further assess the effectiveness of the newly-designed Group 2 and Group 3 programme packages, researchers from the BRAC Institute of Governance and Development (BIGD), Innovations for Poverty Action (IPA), Northwestern University, University of Maryland, and Yale University embarked on an impact evaluation study, which employed a randomized controlled trial (RCT) on the 2019 UPG cohort.

Inspired by the evidence on the positive impact of saving (Duflo et al., 2006; Huberman et al., 2007), the study also attempted to capture the marginal impacts of the savings match and the messaging on encouraging saving. However, due to the challenges posed by COVID-19, these components were dropped from the study.

This report discusses the major findings of the impact evaluation study. The structure of the rest of the report is as follows: Section 2 presents an overview of the UPG programme, including the changes brought to the programme due to COVID-19. Section 3 presents the research design and the changes in the design forced by COVID-19. Section 4 describes the data collection process, and Section 5 discusses the findings. Section 6 consists of the concluding remarks and broad learnings and implications.

2. UPG Overview

2.1 Programme Overview

BRAC's Graduation approach is a comprehensive, time-bound, and sequenced set of interventions that aims to enable ultra-poor households to escape extreme poverty. Like most BRAC programmes, UPG is implemented through BRAC branch offices.

Identifying and targeting the ultra-poor is an important first step in the programme. First, the programme staff identify communities with high concentrations of poverty. Then participatory wealth ranking exercises are conducted in those communities, ranking the households within each community into six wealth groups: destitute, very poor, poor, lower-middle class, middle class, and rich. Households in the bottom three wealth ranks are primarily selected for the programme. Then the programme staff check the eligibility of the primarily selected households. A household must fulfil a set of prerequisites to be eligible for receiving UPG programme support under Group 1, Group 2, or Group 3.

The prerequisites for Group 1 are:

i. Maximum per capita monthly income of BDT 1,900
ii. No household member aged 16–50 years
iii. No current loans/NGO membership
iv. At least one member is physically able to earn a living

The prerequisites for Groups 2 and 3 are as follows:

i. Maximum per capita monthly income of BDT 1,900
ii. At least one household member aged 16–50 years
iii. No current loans/NGO membership

Households that fulfil these prerequisites are further evaluated against a list of selection criteria (Table 2.1). In any group, a pre-selected household must fulfil any two of the three criteria in its relevant group to be finally selected.

Table 2.1: Selection criteria for Groups 1, 2 and 3

Sl	Criteria	Group 1	Group 2	Group 3
1	Income dependency	Mainly depend on irregular earnings	Female member(s) required to work due to extreme poverty	Mainly depend on irregular earnings
2	Maximum value of productive assets	BDT 10,000	BDT 5,000	BDT 10,000
3	Maximum land ownership (including homestead)	30 decimals	10 decimals	30 decimals

UPG interventions for Groups 2 and 3 include:

i. **Enterprise development training:** It is a classroom-based training, spanning over five days. It helps participants learn how to maintain and take proper care of their assets, multiply the given assets, and develop business strategies. It helps them improve their enterprise management skills, confidence, and ability to plan for the future.

ii. **Asset transfer (Group 2) or interest-free loan disbursement (Group 3):** Following the training, the programme provides the asset directly to the participants in Group 2 and interest-free loans to those in Group 3 for purchasing the assets themselves. The participants of Group 2 have to repay 30%–50%[2] of the provided asset's initial value while the participants of Group 3 have to repay 80% of the loan in fortnightly scheduled instalments.

iii. **Hands-on training through group and home visits:** The participants of both groups also receive coaching and mentoring support from BRAC field staff throughout the programme duration of about two years through regular and scheduled group meetings and one-to-one home visits.

iv. **Savings:** Each participant opens a savings account with the programme, where she saves

[2] The exact rate depends on the type and size of the asset provided. For example, those receiving poultry have to return 30% of the asset value while those receiving cows have to return 50%.

as per her ability. To further motivate them to save, the programme also provides a savings match facility—at the end of each month, adding to a participant's account the same amount of money (up to BDT 100) as she saves in that given month. As the programme cycle is 18 months, the total savings reach BDT 3,600 for someone saving BDT 100 per month (1,800 x 2).

v. **Healthcare:** The programme provides healthcare support to the participants and their household members. The support includes preventive care guidance and awareness, linkage with local healthcare providers, and financial assistance for treatment.

vi. **Community mobilization:** A Village Social Solidarity Committee (VSSC) in every programme village is formed to enable community environment and support for programme participants.

2.2 Impact of COVID-19

The COVID-19 pandemic disrupted service delivery globally, and the UPG programme was no exception. During the height of the pandemic, BRAC's primary focus was on preventing the spread of the deadly virus through community engagement, behaviour change, and mass campaigning. Due to the first lockdown, which started on 26 March and lasted until June 2020, UPG had to temporarily halt the activities that needed face-to-face interactions with participants, including hands-on coaching, interest-free loans, savings collection, classroom training, and asset transfers. The programme resumed loan and savings collections on 6 July 2020.

However, UPG supported the programme participants during the pandemic. Nearly all participants received training on COVID-19, a one-time stipend of BDT 1,500, and vegetable seed packs. Vegetable seeds were given to help them set up homestead gardens for improving the food security and nutrition of their families and potentially earning additional income. Many participants also received hygiene products and dry rations from the VSSCs. A few participants also received cash, general medical support, feed and medicine for livestock from UPG.

Lastly, around half of the respondents received government support, which usually came in the form of food items (e.g., rice, lentils, and oil). A small minority also received cash, seed and fertilizer, and livestock inputs from the government.

3. Study Design

3.1 Original Study Design

The researchers conducted an RCT with the 2019 UPG cohort to evaluate the impact of the programme on Group 2 and Group 3. Group 1 was not included in the study. Originally, the study also intended to capture the marginal impact of the savings match alongside the overall impact of the programme. The scope of the study had to be curtailed because of the pandemic, as discussed later in this section.

First, 100 branches were randomly selected from the list of branches BRAC planned to implement the UPG programme in 2019. Then, out of 100 branches, 50 were randomly selected for receiving the regular programme and the rest were assigned to a modified programme (Figure 3.1). The regular programme branches provide the savings match and the modified programme branches provide messages on the importance of savings instead of the match.

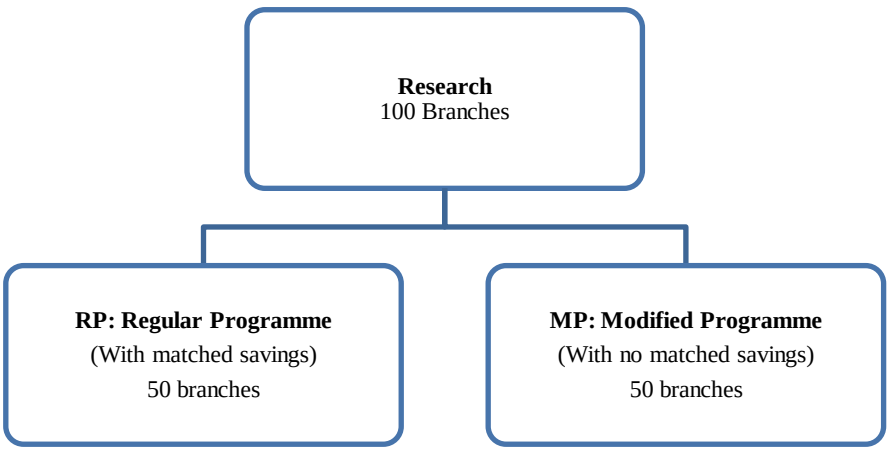


Figure 3.1: Original study design

Regular programme: In the 50 branches selected for the regular programme, 50% of the villages were randomly assigned to the pure control group and the remaining 50% were assigned to receive the programme and served as treatment. In each treatment village, 40% of the eligible households in Groups 2 and 3 were randomly assigned to the spill-over control group, which did not receive the programme. The remaining 60% of households received the regular programme

interventions according to their respective groups (Figure 3.2).

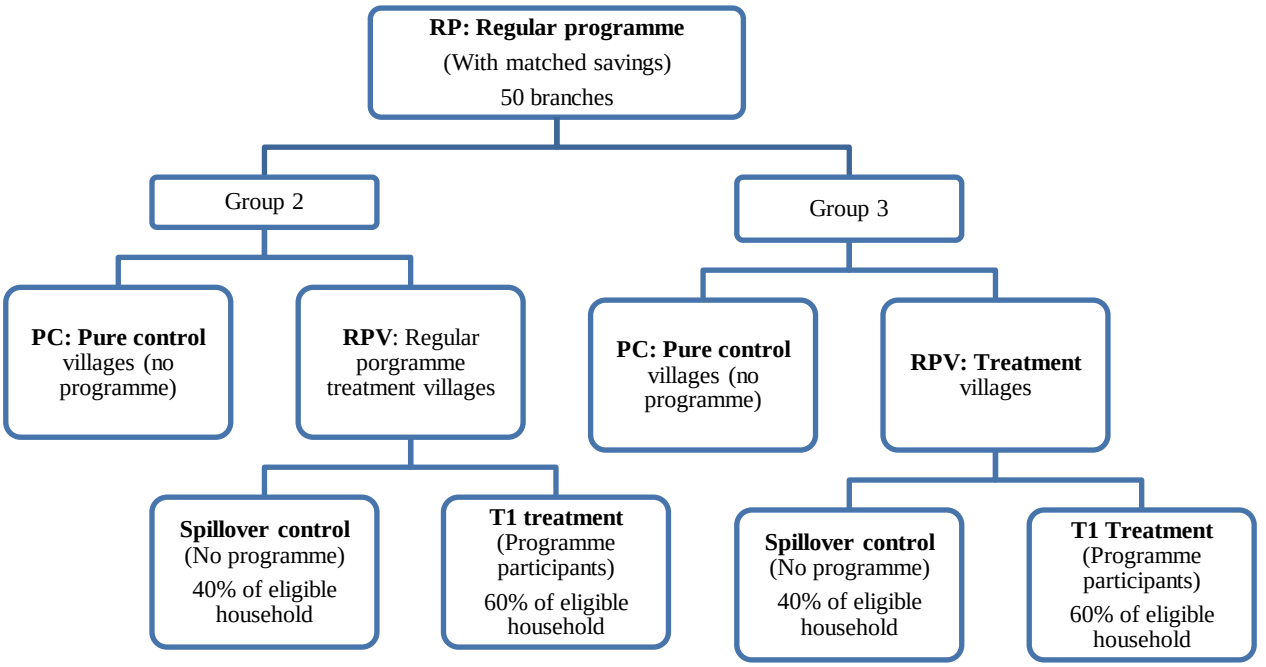


Figure 3.2: Regular programme study design

Modified programme: As mentioned earlier, half of the 100 sample branches were assigned to receive a modified version of the programme (Figure 3.3). In these 50 branches, 50% of the villages were selected as T2 treatment villages and the remaining 50% as T3 villages. None of the modified programme villages got the matched savings intervention. T2 treatment village households were given mobile text messages about why saving is important and how much the household should save. T3 treatment village households also received text messages, but the texts were only about the importance of savings.

Figure 3.3: Modified programme study design

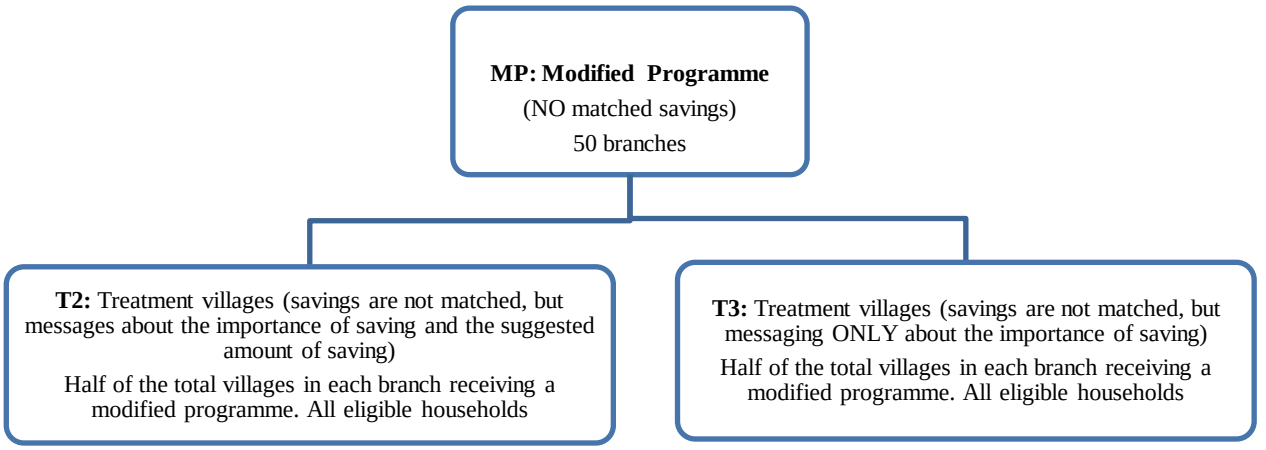


Figure 3.3: Modified programme study design

Originally, the study intended to evaluate the overall impact of the programme by comparing T1 and PC (in Figure 3.2), the marginal impact of the matched savings by comparing T1 (in Figure 3.2) and T3 (in Figure 3.3), the marginal impact of specific savings messaging by comparing T2 and T3 (Figure 3.3), and the spill-over effects of the main intervention by comparing T1 with PC and SC (Figure 3.2).

3.2 Modified Scope of the Study

COVID-19 forced us to curtail our original study design by reducing the power of the study—its ability to detect the impacts on different outcomes. Without the microdata describing COVID-19's impact in treatment and control branches, its differential impact on different locations could not be assessed, adding potentially undetectable variabilities across the study villages and consequently reducing the study's power.

As the marginal impacts of matched savings and savings messaging were expected to be small, these outcomes were low-powered in the study, to begin with, and the disruption caused by COVID-19 did not help. The households that became economically vulnerable during the pandemic resorted to different coping mechanisms including savings depletion (Rahman et al., 2020). Hence, the original design was no more sufficiently powered to detect the impact of the

savings match. Effects of savings messaging are typically even smaller, and most likely the pandemic-induced reduction in households' ability to save further reduced the effect size of the messages. Besides, the lockdown required BRAC to shut down the branch offices and consequently halt savings collection and relevant messaging, causing further disruptions in the study design. Trying to capture these impacts in the new scenario would require adding more branches to the study beyond the core evaluation branches, nearly doubling the cost of the follow-up survey.

Thus, considering the costs and benefits of capturing the marginal effects of saving match and messaging under the new circumstances, the modified branches were not included in the follow-up survey, and these outcomes were removed from the scope of the study.

The spill-over evaluation, on the other hand, was designed with a much higher statistical power, with unit randomized at the household level (for savings match and saving messaging, the randomizations were done at the branch level). However, network data from the baseline study suggested extremely sparse connections between the treatment and spill-over households. In this study sample, on average, each programme household had a connection with less than one spill-over household as co-workers, employers, friends, lenders, borrowers, and charity beneficiaries and benefactors. Clearly, the number of possible spill-over connections between participants and eligible non-participants was very limited. COVID-19 only worsened their social isolation and decreased the likelihood of detecting the spill-over effects on eligible non-participant households. Thus, the follow-up study also excluded the spill-over households.

Consequently, the resulting design for the first follow-up study is a comparison between T1 (regular treatment households) and PC (pure control households), which provides the impact of the graduation model for Group 2 and Group 3.

4. Data Collection

Baseline data was collected between April and August 2019. Data for the first follow-up survey was collected between January and April 2022. All the study villages from the 50 study branches receiving the regular programme were surveyed—276 treatment and 279 pure control villages in total. Based on the power calculations, six households per village were targeted to be surveyed, a total of 3,378 households. However, it was found that several villages did not have the required number of households. So, the geographical stratification was moved to the next level, the BRAC branch, and the number of households for surveying in a branch was equal to six times the number of villages in that branch.

Households for the follow-up survey were selected using a stratification and re-randomization procedure. Using STATA and a random number generator for the seed, all branches were first placed in a random order, and then all households were placed in a random order within each branch and each *stratum*. Separating households into strata ensured that sub-groups of interest were equally represented. In this case, there were four strata of interest: treatment and control households in Group 2 and Group 3.

According to the random seed order, an equal number of households in each stratum was selected in each branch (the total number equal to six times the number of villages in the relevant branch). However, it was possible that an unbalanced sample of treatment and control households would be selected by chance. Thus, the randomization process was repeated a total of 1,000 times. And every time, the balance was evaluated on four key variables between selected treatment and control households in that particular run—household size, age of the respondent, total asset value, and household income—and the *p*-value of the mean difference of the four key variables was calculated. The samples in the randomization with the smallest *p*-value were selected as the final sample. This process made it very unlikely for the treatment and control households to be systematically different. However, before proceeding with the follow-up survey, a thorough balance check was conducted on all the variables that are likely to influence the outcomes of interest (Appendix B).

To mitigate the issue of potential attrition, a list of "backup" households was also prepared,

consisting of the second-best households (in terms of randomization) from the same list. Attrition occurs when the respondent passes away, moves to a different location, or cannot be located.

In the first attempt, 1,678 treatment and 1,680 control households were surveyed, 3,358 in total. Enumerators were sent to survey the treatment households that were missed in the 1st attempt. However, the inclusion of the households surveyed during the 2nd attempt created a discrepancy between treatment and control attrition levels. Hence those observations were dropped from the analysis. Details of this second attempt are provided in the appendix.

5. Study Findings

In this section, the impact of the programme is discussed on the key outcomes of interest for Group 2 and Group 3. Where relevant, the average baseline and follow-up values of the outcomes for treatment and control in Group 2 and Group 3 are provided. Where there is not much interest between Group 2 and Group 3 or between baseline and follow-up, the segregated findings are not shown. The numeric values of the statistical significance of the differences, i.e., the impact, are provided in Appendix C.

5.1 Impact on Children

5.1.1 Participation in School

Children aged between 6 and 12 have been considered school-age children. At baseline, 89% of the Group 2 school-age children were enrolled in school. For Group 3, the rate was 95%. The baseline proportions were similar across treatment and control in both Group 2 and Group 3.

Among Group 2 treatment households, the proportion of school-age children going to school increased by 3.2 percentage points by the follow-up survey whereas, in Group 2 control, the increase was 1.4 percentage points. School enrolment for school-age children decreased for Group 3 households in our sample. However, the decline was 1.0 percentage points in Group 3 control, compared to just 0.1 percentage points in Group 3 treatment (Figure 5.1).

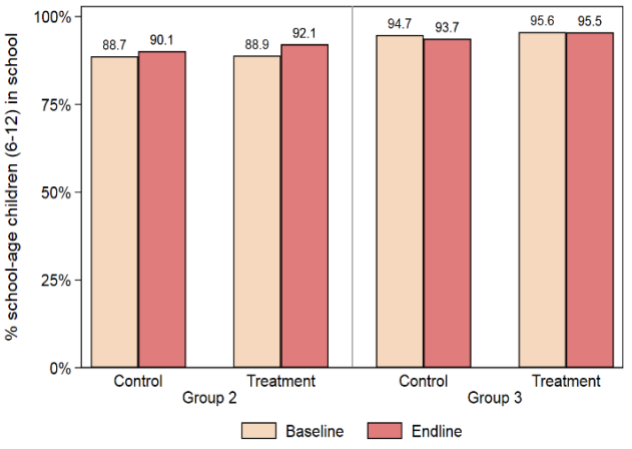


Figure 5.1: Change in % of school-age children (age 6-12) in school

5.1.2 Children's Participation in Income-Generating Activities

At baseline, approximately 5.5% of the children under 15 in both treatment and control households in Group 2 were participating in income-generating activities. The rates were approximately 4% for control and 3% for treatment households in Group 3. By the follow-up survey, their participation in income-generating activities increased across all groups, but the increases were greater in both treatment groups compared to their respective control groups. In Group 2, the rate was 8.5% for control and 10% for treatment households. The rate was about 5.5% in control and 7% in treatment households in Group 3. Figure 5.2 presents the data on children's engagement in economic activities. Similar short-run findings were observed by Sulaiman (2018) where it was found that the UPG programme increased the extent of child labour immediately after asset transfers however, this impact declines two years after the intervention ends.

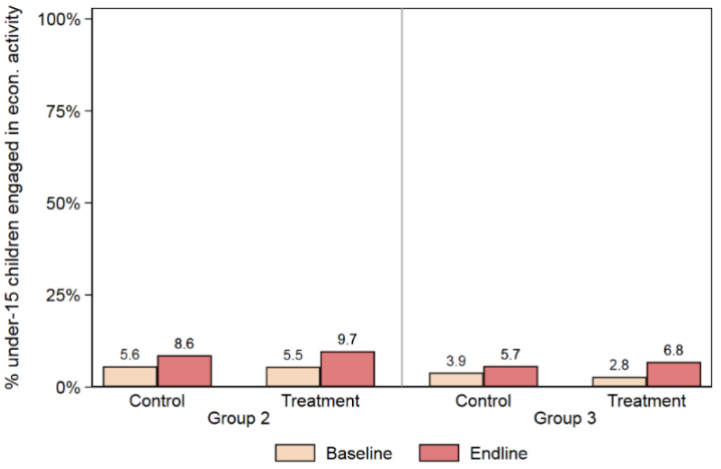


Figure 5.2: Change in % of under-15 children engaged in economic activities

The programme increased the self-employment of the working-age members of the households (Section 5.2.4). The productive opportunities created by the programme may have motivated some households to also engage their children in relevant income-generating activities, particularly in supporting the adults. Indeed, most of these children were found to be supporting other household members in their earning activities, primarily in poultry/livestock rearing and agricultural activities. Given the very small sample sizes of children not going to school and children in income generation, no correlation could be found between the two variables.

5.1.3. Key Takeaway: Impact on Children

From this section, the main finding is that despite increased school enrolment in Group 2 and no change in Group 3, school-going-aged children from UPG households are more likely to participate in income-generating activities, mainly supporting family members. It could be due to increased economic opportunities for the programme households. However, further qualitative work with these children and their families can be useful in shedding light on this apparently anomalous result. Appendix C1.2 provides the regression coefficients of the programme's impact on the children's outcomes.

5.2 Labour Outcomes

5.2.1 Employment Rate of the Respondents

Figure 5.3 depicts the employment rates of the respondents across the groups at baseline and follow-up. The baseline employment rates are similar between treatment and control respondents in both Group 2 and Group 3. But, the baseline employment rates of the control and treatment respondents are more than 20 percentage points higher in Group 2 than the rates in Group 3.

This large difference, however, is not unexpected. In Bangladesh, more women in the poorest households are likely to work compared to the households that are relatively better off. Bangladeshi women, in general, still encounter different types of challenges from societies and families in working, especially working outside the home (Kabeer, N., 2021). Thus, women are more likely to work from dire necessity or, on the other end, when the opportunities are attractive (Kabeer, N., 2018). Both the Bangladesh Labour Force Survey 2016-17 and BIGD's Youth Survey 2018 support these assertions (Bangladesh Bureau of Statistics [BBS], 2018; Matin et al., 2019). These surveys show that women with no formal to primary education, who are also more likely to be the poorest, are much more likely to participate in the labour market compared to those with higher levels of education up to higher secondary, who are more likely to be better off than their counterparts with lower levels of education. The participation rate shoots up for women with tertiary education, who are more likely to be well-off than those with lower levels of education, that too probably due to better job opportunities these women enjoy (Kabeer, N., 2021). Thus, sociocultural norms regarding women's work are a possible explanation for the

large difference between Groups 2 and 3.

Also, Possible employment opportunities for ultra-poor women are usually very low-skilled, like casual labour and maid. Granted that these opportunities too are often not sufficiently available in their communities. But the nature of these opportunities—generally low-paid, physically demanding, performed outside the home, and looked down upon—can discourage many ultra-poor women from taking them up, especially when they are not the poorest. It is yet another probable explanation for the large gap in the baseline employment rates between the two groups.

In Group 2, the employment rate of the treatment participants increased by 13 percentage points while the rate increased only by one percentage point for the control group. In the case of Group 3, large increases are seen in the employment rates for both treatment and control group respondents. But the increase among the treatment respondents in Group 3 is much higher (29 percentage points) compared to the increase among the control respondents (19 percentage points).

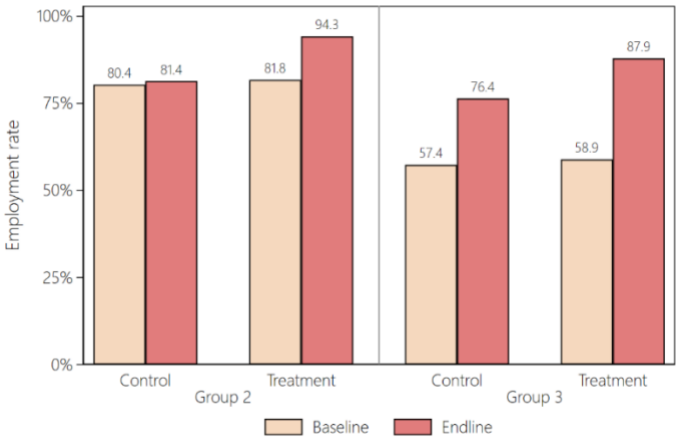


Figure 5.3: Employment rate of the respondents (%)

When productive employment opportunities are presented to these women by UPG, in the form of livestock or other productive assets, it unleashes their untapped productive capacity. Since most of these new opportunities are also home-based, their participation in income generation is further facilitated. That is why a large increase is seen in the treatment groups' women employment rates, particularly in Group 3. The large increase in Group 3 control respondents' employment rate could be due to the pandemic, as discussed later.

5.2.2 Working Hours of the Respondents

Figure 5.4 shows that the hours of work for the treatment participants in both groups increased drastically from baseline to follow-up. The magnitude[3] of impact for Group 2 treatment is 73% while it is 101% for Group 3. For the control groups, the increases are marginal.

The impacts follow a similar logic as in the case of employment. they suggest that the participants, i.e., the main female members of the households had untapped productive labour hours which they could utilize in productive activities after the intervention. Thus, the programme successfully influenced the participants to allocate their productive capacity to work.

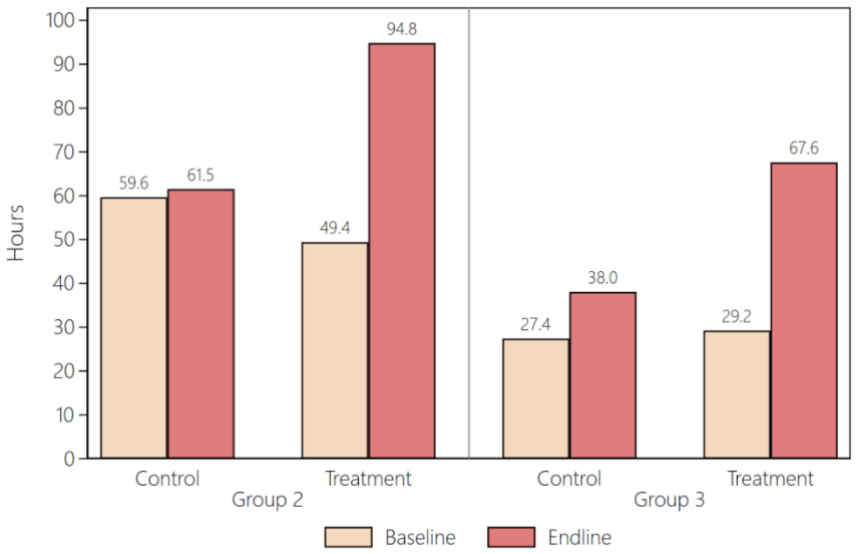


Figure 5.4: Monthly working hours of the respondents

Also, a much larger percentage change is seen in the working hours of treatment women compared to their employment. This also makes sense. The majority of poor people are engaged in some form of work out of necessity. But as these opportunities still could be scarce, they may be forced to work fewer hours. The productive options provided by the programme thus not only

[3] Magnitude is the Difference-in-difference value relative to the baseline control mean. In other words, the difference between the control group's baseline and follow-up is subtracted from the difference between the treatment group's baseline and follow-up means. The subtracted value is the impact and the impact relative to the control group mean at baseline is considered the magnitude.

brought many ultra-poor women previously not working for various reasons but also allowed previously working women to spend more hours at work. This is consistent with the RCT findings by Bandiera, et. al (2017).

5.2.3 Earnings of the Respondents

As described previously, for Group 2 control respondents, employment rate and working hours remained stagnant between baseline and follow-up. Hence, it was reasonable to expect that their income too would remain the same. But the average monthly income of the control respondents in Group 2 actually decreased in the follow-up survey. The economic shock of COVID-19 could be a reason for this decrease. On the other hand, the treatment respondents from Group 2 were found to be resilient to COVID-19 shock. Their average monthly income increased by BDT 510 from the baseline. Figure 5.5 shows the earning statistics for the respondents.

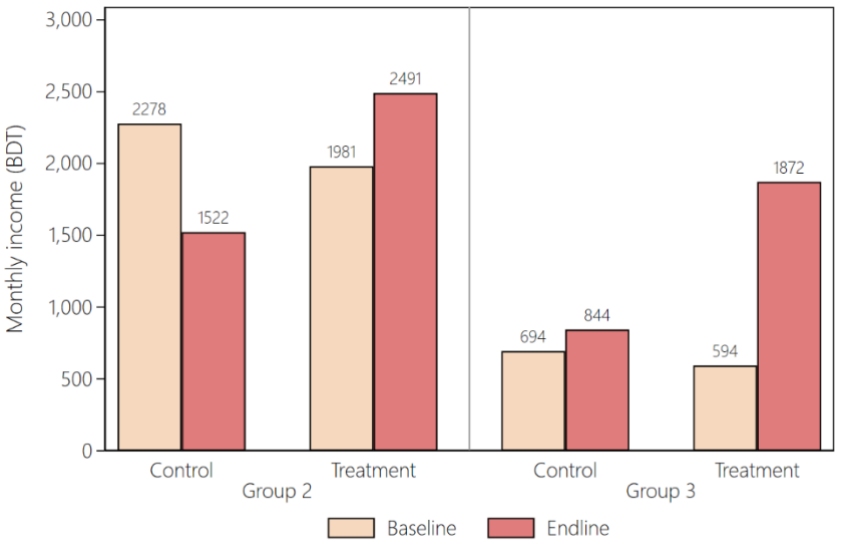


Figure 5.5: Average monthly income of the respondents (BDT)

In Group 3, an increase in income is observed for both treatment and control respondents (Figure 5.5). The income of Group 3 control households increased by 22% on average. It may be reasonable to believe that COVID-19 pushed many Group 3 control women to find some kind of work, not necessarily productive work. Hence their increase in income was meagre compared to the increase in their employment rate. On the other hand, the average monthly income more than tripled for programme participants in Group 3, further strengthening the argument that UPG was

highly successful in not only attracting many of the programme participants to the labour market for the first time but also creating more productive opportunities for all participants.

5.2.4 Self-Employment Rate

One of the UPG interventions was enterprise development training, which is supposed to increase self-employment among the participants. Figure 5.6 shows that the self-employment rate of both treatment groups increased significantly from baseline to follow-up. But the rates remained almost unchanged for both of the control groups. These findings suggest that the intervention has been successful in generating self-employment among the ultra-poor participants through a combination of asset transfer and enterprise development training.

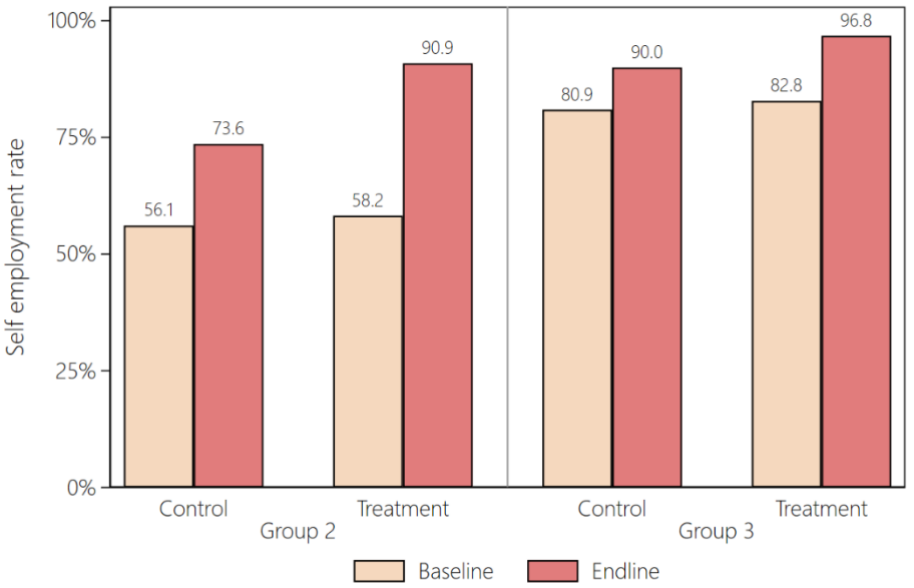


Figure 5.6: Self-employment rate of the respondents (%)

5.2.5 Household Income

As the UPG programme included asset transfer or interest-free loans to buy assets and since the employment rate, income, and hours worked increased for the programme participant, it is expected that the programme would increase total household income.

Since the baseline survey, Group 2 control households' monthly income decreased by BDT 1,766, whereas it increased by BDT 995 for treatment households. In the case of Group 3, the monthly income of both treatment and control households increased since the baseline survey.

But again, this increase was much more prominent in the treatment households. On average, Group 3 treatment households' income increased by BDT 6,150, which increased by just BDT 306 for the control households. Figure 5.7 provides detailed information about household monthly incomes.

These statistics further strengthen the explanations for the results for the individual respondents, particularly for Group 3—many control women may have been forced to take any job due to COVID-19 (hence their individual and household incomes did not increase much) whereas many treatment women and their families benefit from the productive opportunities provided by the programme.

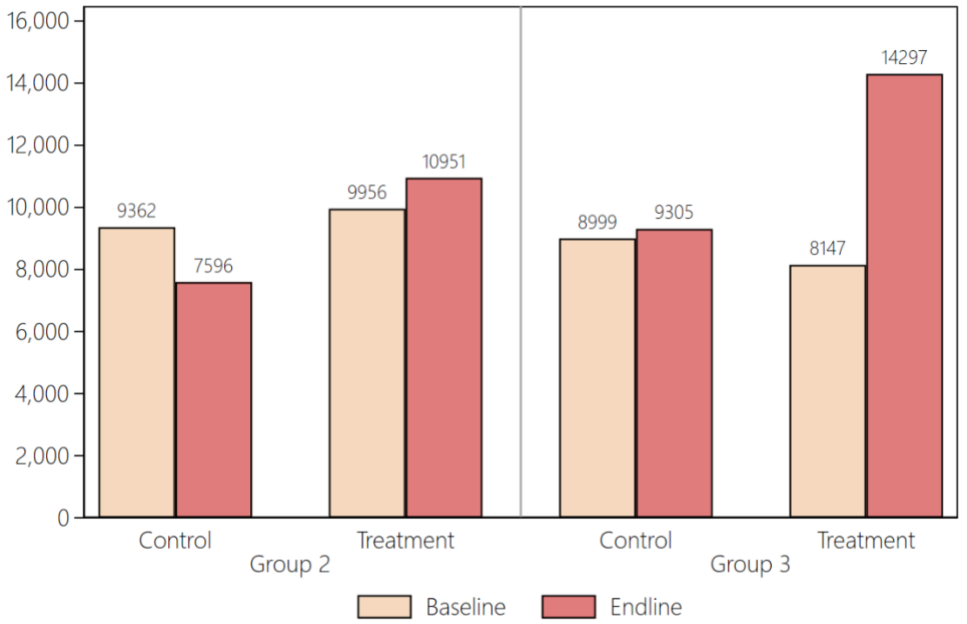


Figure 5.7: Monthly household income (BDT)

5.2.6 Per Capita Monthly Income

For both Groups 2 and 3 control households, per capita income decreased from baseline to the follow-up survey, by BDT 864 for the former and BDT 40 for the latter. Meanwhile, monthly per capita income increased for treatment households for both groups, suggesting a significant positive impact of the programme on this outcome. The magnitude of the increase is 37% for Group 2 and 60% for Group 3. These increases are greater than the increases found in the quasi-experimental study on the 2017 programme cohort—27% and 19% respectively. Figure 5.8

provides detailed information on the monthly per capita income of the households.

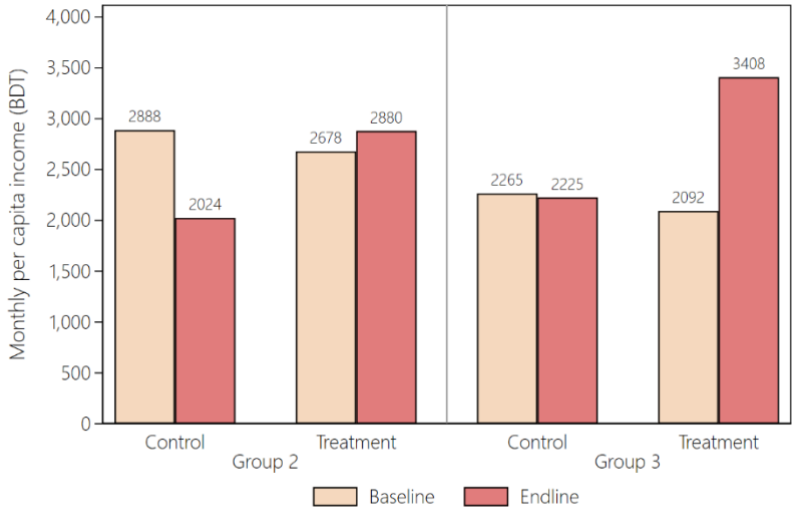


Figure 5.8: Per capita monthly income (BDT)

5.2.7 Poverty

Because of significant increases in household and per capita incomes, UPG households were less likely to be under the poverty line during the follow-up survey (Figure 5.9). At baseline, approximately 61% of Group 2 and 52% of Group 3 treatment households were below the international poverty line of USD 1.9 per person per day.[4]

In the follow-up survey, the percentage of control households living under the poverty line dropped by 5.7 percentage points. These results suggest that the programme reduced poverty by 20.1 percentage points for Group 2, and 24.4 percentage points for Group 3 respectively.

4 The selection criteria for the study assumed that all households would live below the poverty line, which contradicts the finding that some households exceeded this threshold. The reason for this difference is mainly due to how BIGD and BRAC collected data on income.
BRAC employed a categorization system of occupations that divided them into 20 broad categories. The questionnaire did not include the number of working hours, and respondents self-reported their gross income. While this approach provides a basic understanding of household income, it may not capture all sources of income or accurately reflect the range of occupations within a household.
On the other hand, BIGD implemented a more structured and comprehensive measurement of income, using a detailed module on employment and income in their baseline survey. They asked every household member about their occupations in the previous year and categorized them into 54 types. BIGD collected information on how much the respondent earned from each of their declared occupations separately, along with the amount of time they spent in each occupation. This helped ensure that all sources of income were accounted for, and the net income was calculated accurately. By capturing both minor and major earnings, this approach elicited a more precise measure of household income.

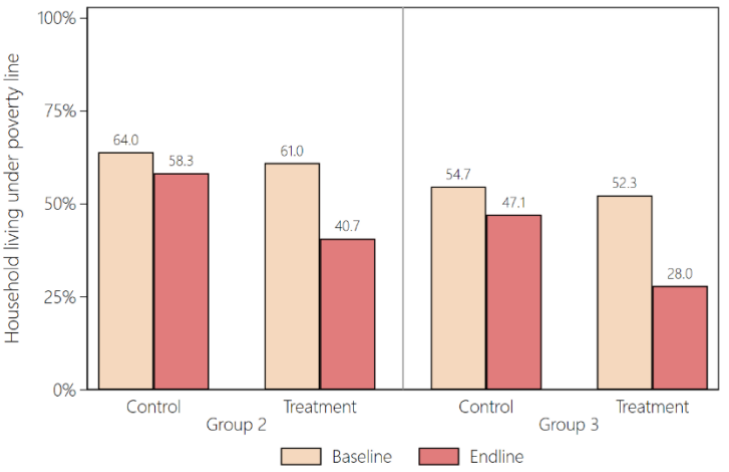


Figure 5.9: Households living under the poverty line (%)

5.2.8 Key Takeaway: Impact on Labour Outcome

The findings from the section suggest that the UPG programme significantly improves the participants' employment rate and their working hours, income, and self-employment rate. The programme also significantly increases their household and per capita incomes. Consequently, UPG households are much less likely to live under the extreme poverty line. Overall, these results indicate that the programme is very effective in improving the labour market and relevant economic outcomes for the programme households.

More significantly, the programme was able to make UPG households resilient to the economic crisis created by COVID-19, one of the greatest shocks of the 21st century. It is reasonable to assume that both treatment and control households faced similar economic shocks during the pandemic. But the productive opportunities provided by the programme helped the treatment households not just to recover or prevent COVID-19's impact but also significantly increase their household and per capita incomes from the baseline, none of which was the case for the control households.

A key takeaway from these results is that the impacts are much more prominent for Group 3 households. This larger effect on Group 3 can be attributed to the threshold argument given by Balboni et. al. (2021). They observed that the UPG participants from the 2007 cohort who had sufficient initial endowment to pass a certain asset threshold with the help of the programme

transfers experienced stronger programme impacts and were more likely to escape poverty compared to those with a smaller initial endowment.

Appendix C1.3 shows the regression coefficients on labour outcomes.

5.3 Financial, Productive, and Non-Productive Assets

5.3.1 Savings

The share of treatment respondents having any savings (57%) is much higher than the share of the control group (40%). This indicates an overall increased financial market participation of the programme participants (Figure 5.10).

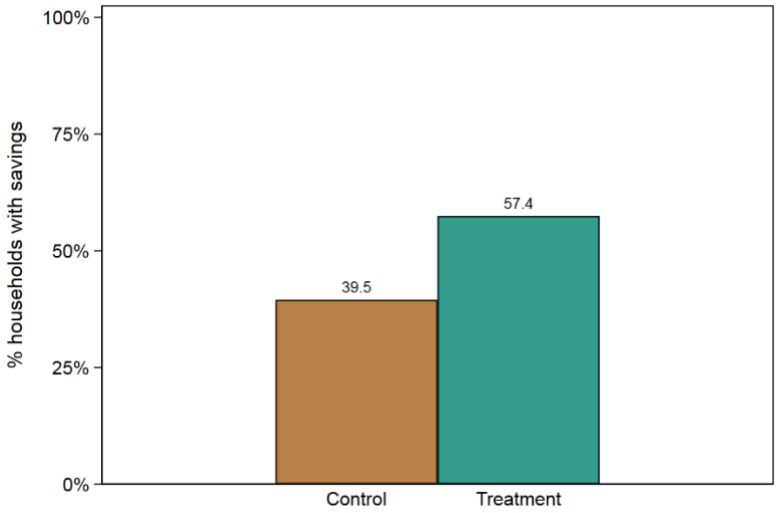


Figure 5.10: Share of respondents with any savings at follow-up (%)

The average amount of savings was also higher for the treatment group (Figure 5.11). For the pooled sample, treatment households had an average of BDT 5,391 in savings, while control households` average savings was BDT 2,418 during follow-up.

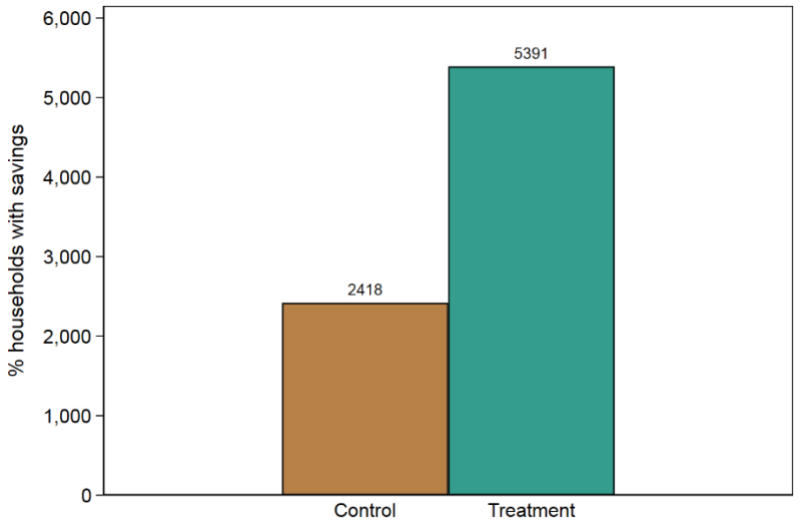


Figure 5.11: Total amount of savings (BDT) at follow-up

Further analysis shows that treatment households used more diverse saving locations. Since they do not have access to financial institutions such as banks, they tend to save with NGOs including BRAC. They also save more at home and with money-guards, i.e., individuals they trust. This overall positive impact on savings is an indication of increased ability of the treatment households to withstand shocks to income or assets, i.e., improved financial resilience[5].

5.3.2 Loans

The proportion of households with outstanding loans increased for both treatment and control groups from the baseline to the first follow-up survey (Figure 5.12). These increases were slightly larger for treatment groups compared to control, and the increase was the largest for Group 3 treatment.

[5] Financial Resilience is defined as the ability to withstand life events that impact one's income or assets.

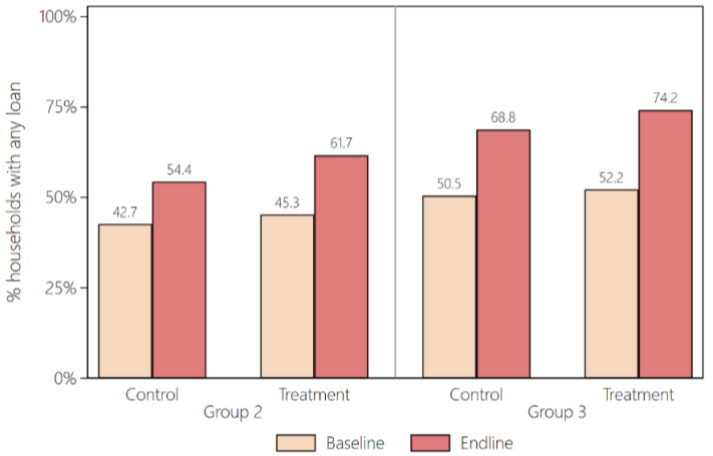


Figure 5.12: Proportions of households with any loan (%)

As expected, this difference can be attributed to the treatment households' participation in the BRAC Microfinance programme (Figure 5.13). At baseline, almost no household held a BRAC loan. The proportion of treatment households with BRAC loans (excluding the UPG asset/credit transfer) increased by 20% percentage points for Group 2 and 23 percentage points for Group 3; a small proportion of control households also had BRAC loans.

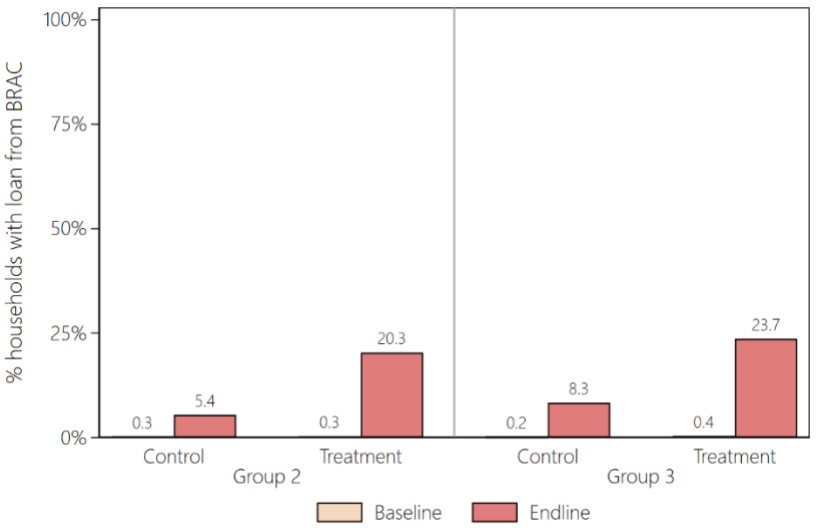


Figure 5.13: Households with any BRAC loan (%)

However, when looking at those with loans from BRAC, the loan amounts were comparable between treatment and control (Figure 5.14). It implies that the UPG participants are definitely

more likely to receive loans from BRAC than the control group but not more likely to receive larger loans.

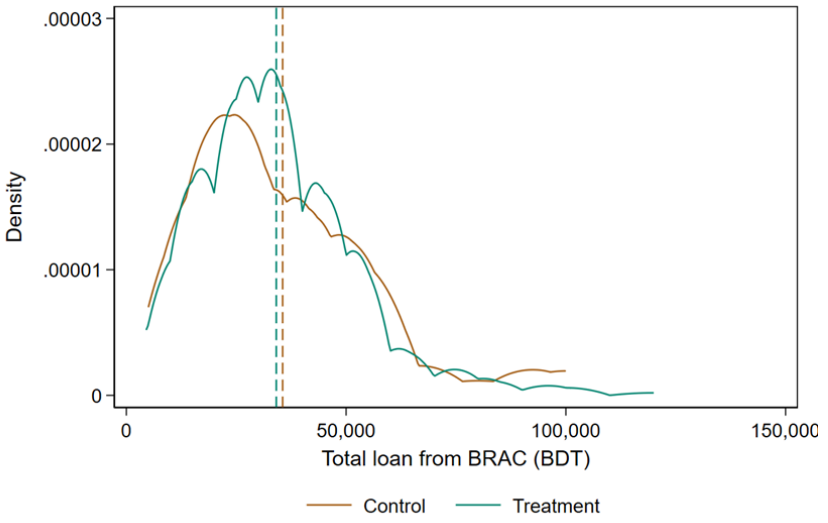


Figure 5.14: Distribution of loan amounts from BRAC (considering households with BRAC loans only)

The pattern is similar for the total amount of loans, which increased significantly for both treatment and control households from baseline to the follow-up (Figure 5.15). Again, this increase was slightly larger for treatment households in both programme groups, and Group 3 had a much greater increase than Group 2 households. The differences in the increments of loan amount since the baseline between the treatments and their respective control are statistically insignificant.

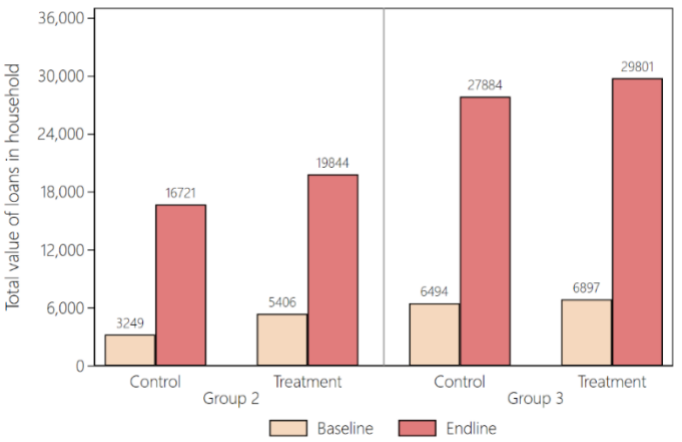


Figure 5.15: Total value of the outstanding loan (BDT)

However, the real difference can be seen in the composition of the loans. While the loan amounts significantly increased across treatment and control households, UPG households rely more on loans from formal sources such as Banks, or NGOs (Figure 5.16). The increase in the average formal loan amounts were significantly higher for treatment households compared to those of control households. On the other hand, control households appeared to rely more on informal loans (Figure 5.17).

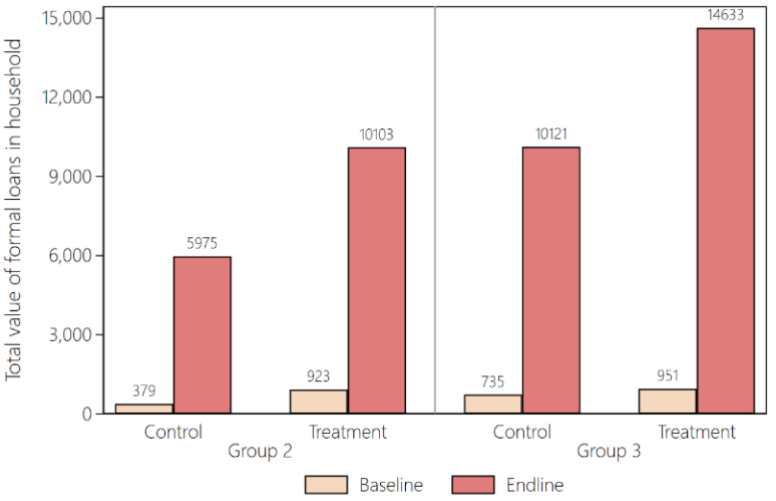


Figure 5.16: Total formal loan value (BDT)

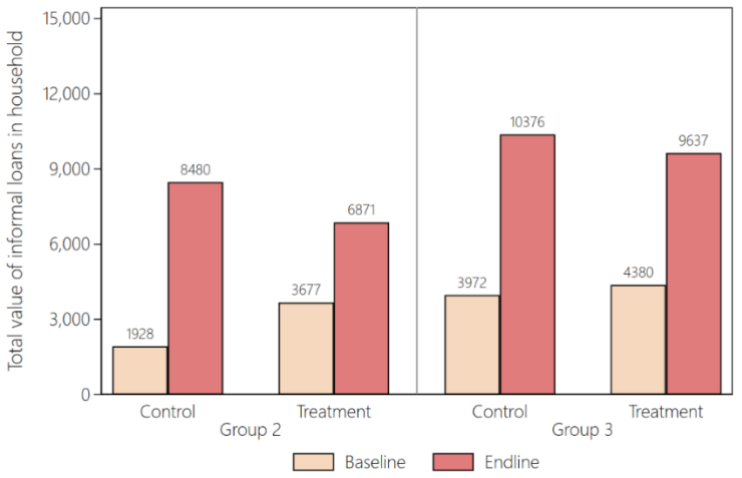


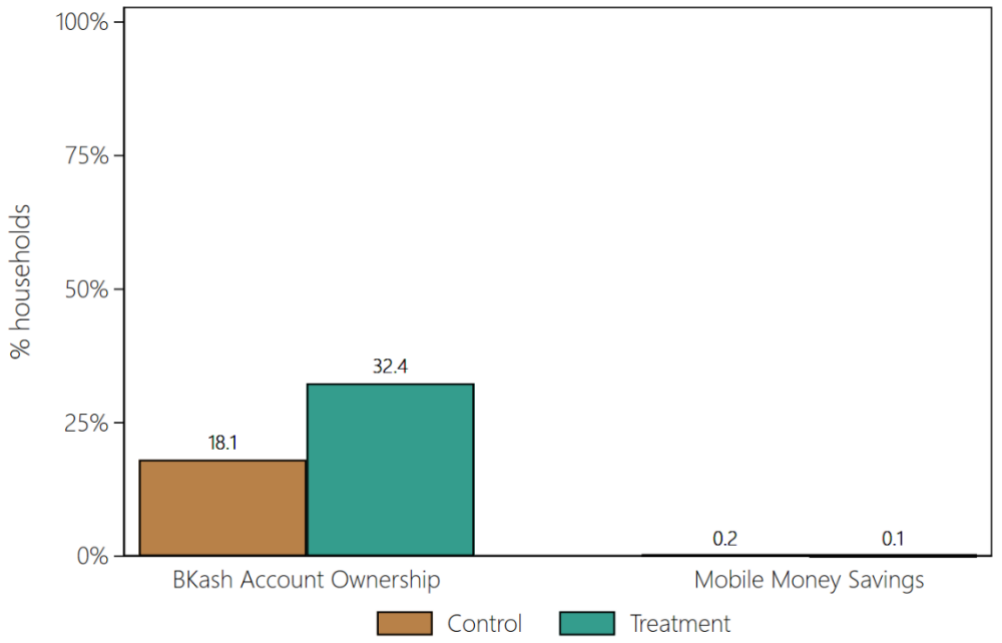
Figure 5.17: Total informal loan value (BDT)

The increase in loan amounts for both treatment and control households is consistent with the studies on the impact of the pandemic on economically vulnerable households, notably the

BIGD-PPRC panel survey on rural and urban slum households (Rahman et al., 2021). The study shows a significant accumulation of outstanding loans among these households. But our data also shows that the programme has been successful in creating access to the formal financial market, i.e., microfinance, for the participants, thereby reducing their dependence on informal finance and potentially their exposure to high-interest rates some of these informal sources may entail.

5.3.3 Access to Digital Financial Services

The study looked into the access to digital financial services (DFS), and the usage of DFS as a space to keep savings in. The research does not look into the usage of DFS for making payments or other forms of cash transfers.



Participants are found to have higher access to Digital Financial Services (DFS) such as Bkash. However, having access to an account does not necessarily mean that it is being used. From Figure 5.18, it can be seen that even though the treatment groups had higher shares of households with at least one DFS account, the share of households with any savings in DFS accounts is close to zero for both treatment and control households.

Figure 5.18: Account ownership and savings in DFS (%)

5.3.4 Productive and Non-Productive Assets

UPG households are expected to have more assets compared to their control counterparts during follow-up—a combined result of the transferred assets or disbursed partial loans to buy productive assets and the training on how to take care and grow the given assets. In addition, increased income of the treatment group is also likely to have a positive impact on assets.

Since the baseline survey, the treatment households in both Groups 2 and 3 spent significantly higher amounts on buying land compared to the control counterparts (Figure 5.19). Compared to their respective controls, in Group 3, treatment households spent three times as high and in Group 2, they spent more than twice as high on land.

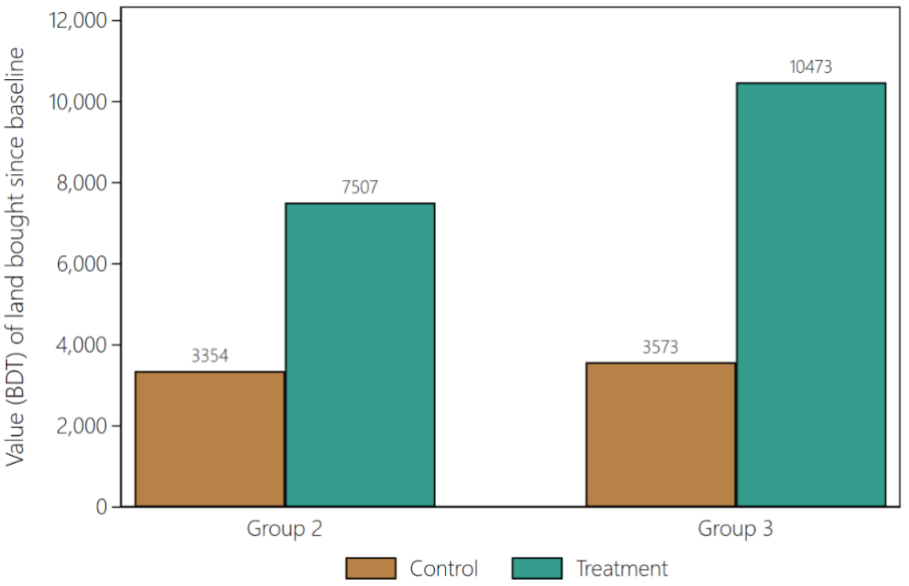


Figure 5.19: Value of the land bought since baseline (BDT)

Treatment households in both Groups 2 and 3 are substantially better off in terms of values of livestock/rear assets and poultry (Figure 5.20). These increases are attributable to the asset transfer or loan from the programme. However, in this case, the impact is larger for Group 2. This is not unexpected. As defined by the targeting criteria, Group 3 households owned more assets than Group 2 households at baseline.

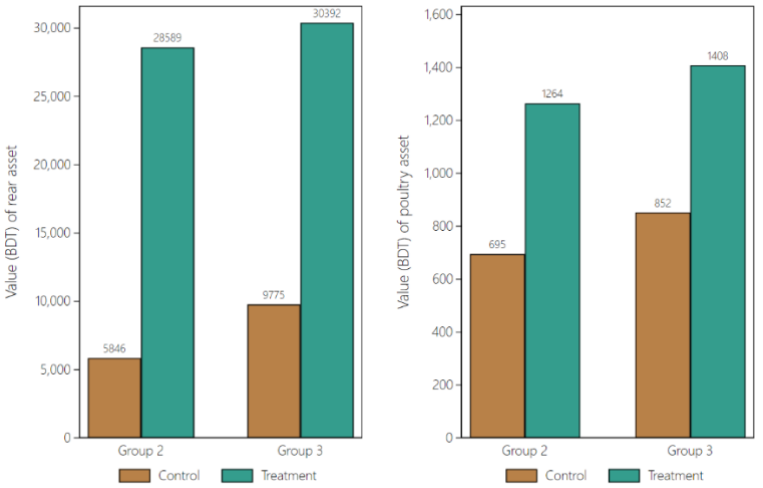


Figure 5.20: Value of livestock and poultry (BDT)

Figure 5.21 shows that both treatment and control households in Group 2 owned similar amounts of assets at baseline though the average asset value of treatment in Group 3 was higher than that of the control. Again, the baseline total asset values were much smaller in Group 2 compared to group 3. In the follow-up survey, the total value of assets increased for all the groups. However, as expected, total assets increased drastically for the treatment groups, primarily due to the asset transfer or loan, particularly for group 3 treatment.

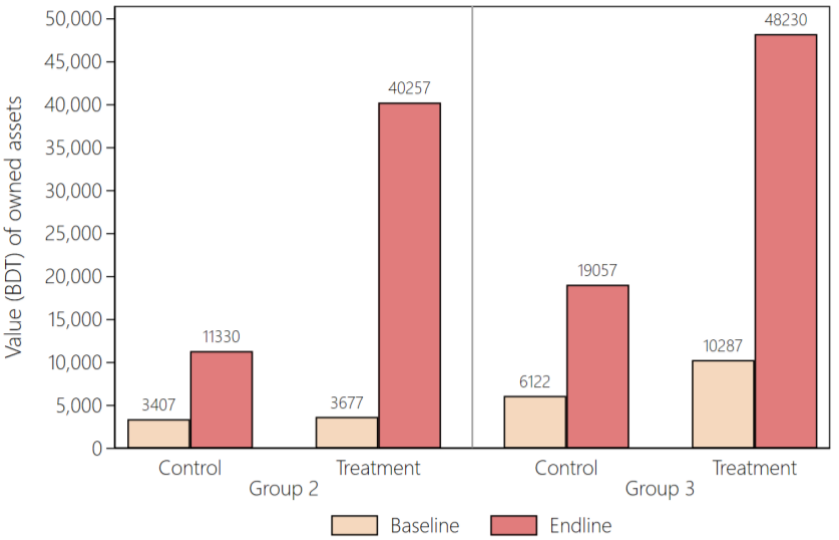


Figure 5.21: Value of total owned assets (BDT)

5.3.5 Key Takeaway: Impact on Financial, Productive, and Non-productive Assets

The UPG programme increases the likelihood of savings and borrowing and the amount of saving for both Group 2 and Group 3 households. What is more significant, UPG was successful in ensuring access to formal financing to the participants, potentially improving their financial resilience and reducing their exposure to risky and unpredictable sources of finance. Furthermore, UPG households are significantly better off in terms of assets owned. As expected, many UPG graduates seem to have integrated with the BRAC's microfinance programme. However, they are not likely to receive larger loans compared to the BRAC loan recipients in the control group.

Finally, even though the magnitudes of the increases in asset values, both total and productive, were greater for Group 2 than for Group 3 treatment, the total values of these assets remain smaller for Group 2 than for Group 3 (Figure 5.20 and 5.21).

Appendix C1.4 provides regression outcomes on financial, productive and non-productive assets.

5.4 Consumption

5.4.1 Business Expenditures

Business expenditures for households in both treatment groups increased significantly because of the productive asset transfer/loan and enterprise training provided by the programme and the increase in incomes. Figure 5.22 reveals significantly higher increases in business expenditures among both treatment groups compared to their respective control counterparts. Again, the absolute increase is much larger for Group 3 treatment than for Group 2 treatment households.

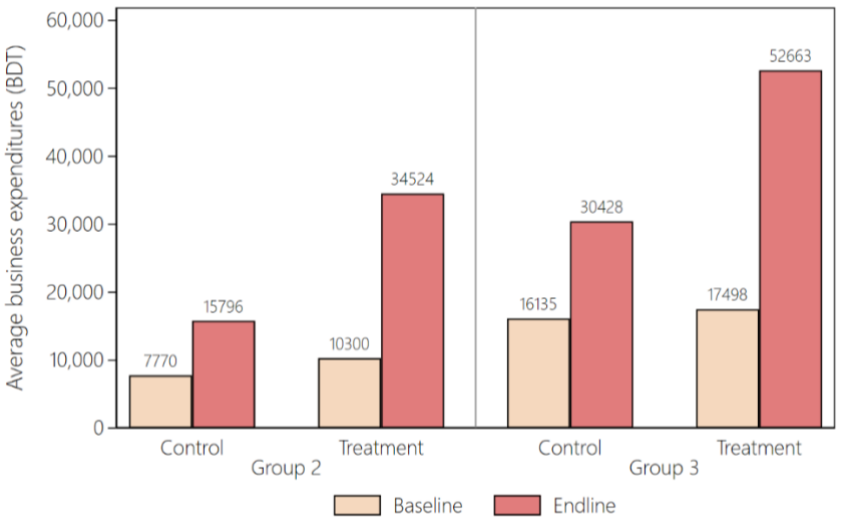


Figure 5.22: Average business expenditures (BDT)

5.4.2 Health Expenditures

Interestingly, average health expenditures decreased for all household types in the follow-up survey (Figure 5.23). This decrease was marginally higher in Group 2 compared to that in Group 3 across treatment and control, but the difference is not significant. This difference can be explained by the decrease in the proportion of households with health crises, which also occurs for all household types (Figure 5.24).

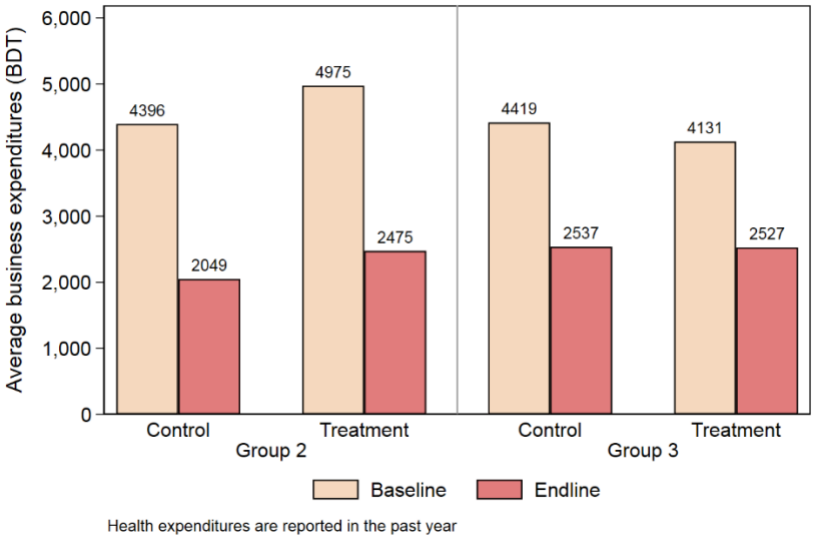


Figure 5.23: Average forced spending due to health crises (BDT)

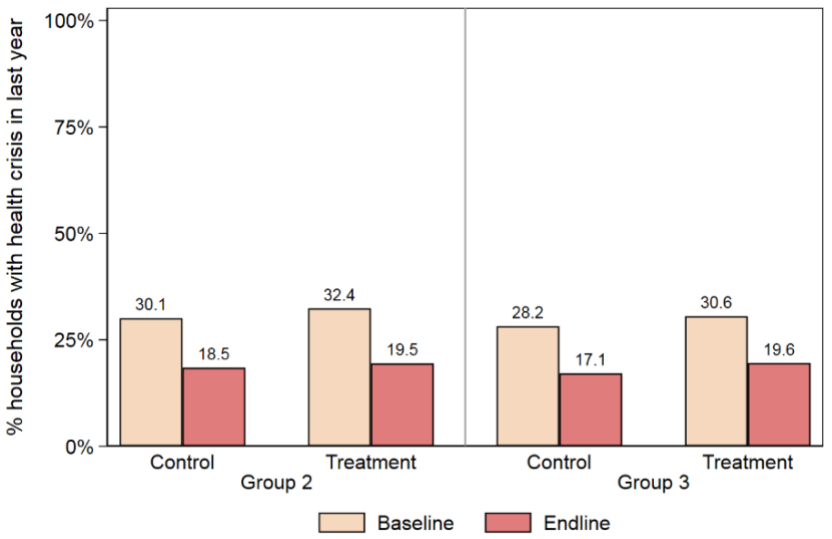


Figure 5.24: Proportion of households with health crises (%)

5.4.3. WASH Access

UPG programme package also includes raising awareness among participants about hygienic latrines—water-sealed or *Pacca* latrines. Figure 5.25 shows that the share of households with access to hygienic latrines is much higher for treatment households than that for the control, demonstrating the programme's success in improving sanitation.

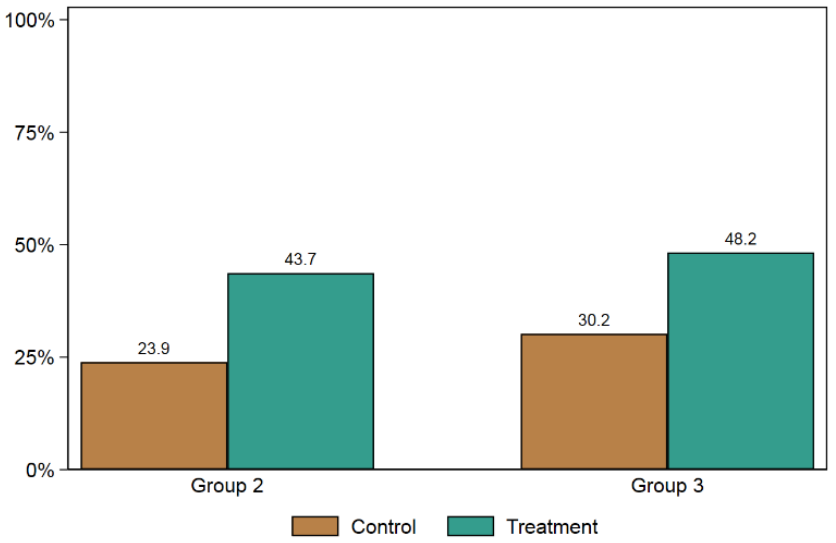


Figure 5.25: Access to water-sealed pacca latrines (%)

5.4.4 Key Takeaway: Impact on Consumption

With increased income and assets, UPG households spend more. They have significantly higher business expenditures compared to those in control. This impact is more prominent for Group 3 households. Moreover, UPG households are more likely to have pacca latrine in both groups. Thus, the awareness intervention of the programme on hygienic latrines seems effective. However, health expenditures for all households have significantly reduced. Group 3 maintains the strongest performance on these outcomes as well.

Appendix C1.5 shows the regression coefficients of business expenditure, health expenditure and owning pacca latrine.

5.5 Crisis-Coping Mechanism

An important element of economic empowerment is the ability to cope with crises or shocks. The shocks faced by the households that are caused by exogenous factors including COVID-19 have been classified in this study into six categories: unexpected change in prices, labour market outcomes, natural disasters, death or illness of a household member, a member joining or leaving the household (excluding childbirth), and loss of income due to others' actions[6]. The respondents were asked about the types of shocks they faced between the baseline and follow-up survey and what mechanisms they used to cope with the shock.

5.5.1 Shock Exposure and Coping Mechanisms

Since these shocks are exogenous, the treatment and control groups should be equally vulnerable to these shocks. From Figure 5.26, it can be observed that it is indeed the case. The proportions of households who faced at least one type of shock in the past two years are very similar across treatment and control in Groups 2 and 3, between 82% and 86%. Most likely the proportions are so high because of COVID-19.

[6] COVID-19 was not included as a separate area but its impact is most likely to be included in the six categories.

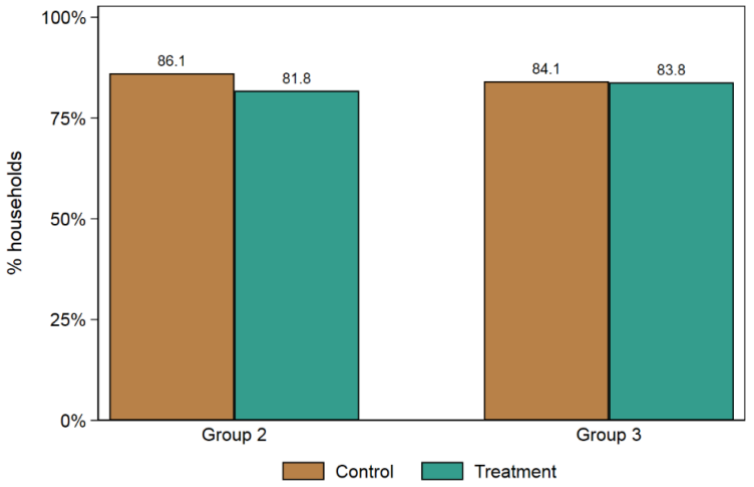


Figure 5.26: Faced shock(s) at least once in the past two years (%)

Though most households faced some kind of shocks in the two years between baseline and follow-up, there was little variation in their use of coping mechanisms in response to shocks across the four groups. For example, the differences in the share of respondents who used savings to cope with shocks, as depicted in Figure 5.27, are not statistically significant. The same could be observed for other coping mechanisms i.e., taking a loan, sending a household member to a different household temporarily, forcing children to work, begging, and reducing consumption.

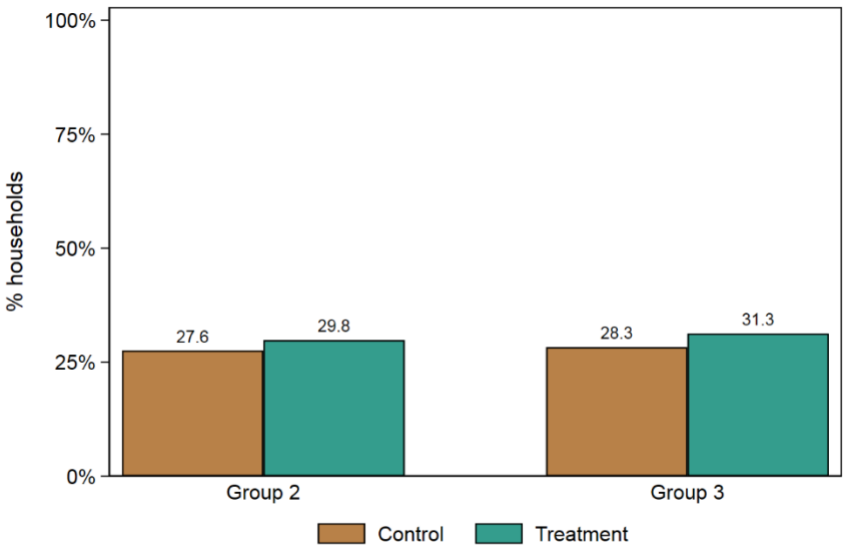


Figure 5.27: Used savings to cope with shocks in the past two years (%)

5.5.2 Key Takeaways: Crisis Coping

The previous sections show that the incomes, assets, proportion of households with savings, and average savings are significantly higher in treatment than in control households in follow-up. While these increases have most likely improved their shock resilience, the outcome of the coping mechanism is unable to capture the impact of these improvements. However, as argued in the previous section, the treatment households are more likely to overcome the economic shock of COVID-19 as opposed to the control households.

5.6 Access to Government Support

One of the UPG interventions is to help the participants get government support such as Vulnerable group development (VGD)/vulnerable group feeding (VGF) cards, old age allowance, widow allowance etc.

5.6.1 Government Support

At baseline, approximately 58% of Group 2 households and 51% of Group 3 households accessed at least one type of government support the year before the baseline. It is likely that because of COVID-19's impact on people's livelihood, a larger number of households applied for government support. Hence, in the follow-up survey, access to government support increased significantly across all households—70% of Group 2 households and 61% of Group 3 households received at least one type of government support (Figure 5.28).

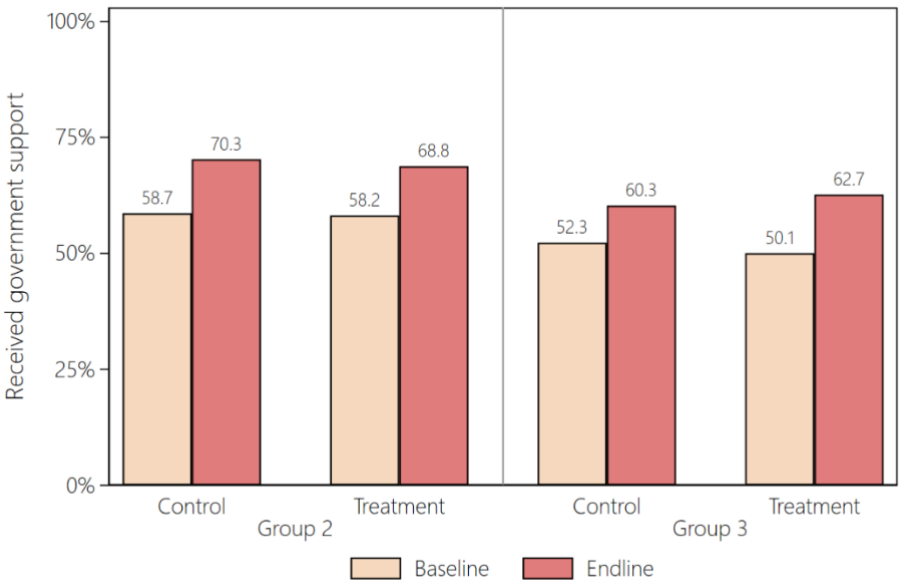


Figure 5.28: Households that received government support (%)

With the increases in access to government support, the average amount received in a year also increased significantly. At baseline, on average Group 2 treatment household received BDT 1,735 whereas Group 3 treatment household received BDT 1,320 in a year as government support. These amounts were similar between treatment and control households in both groups. Figure 5.29 shows the amount of support the household received in a year.

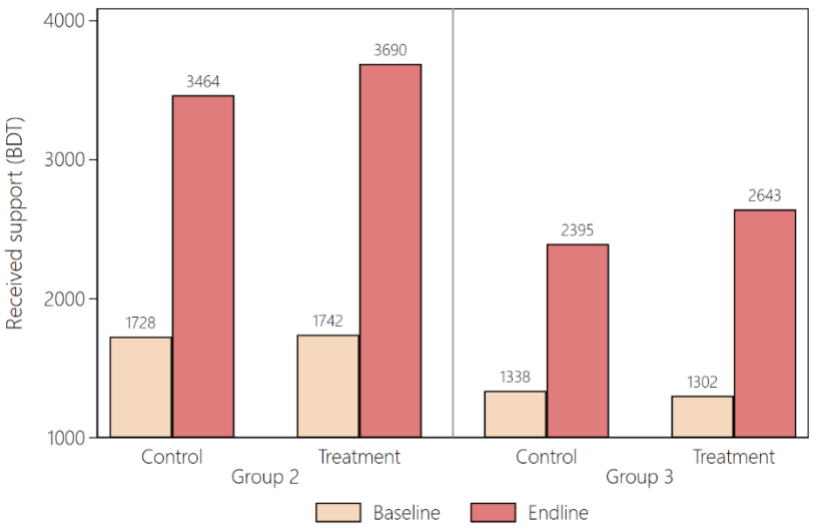


Figure 5.29: Amount of government support received by households in a year (BDT)

In the follow-up survey, the control household in Group 2 received BDT 3,464, on average, as government support in the last year, significantly higher than the baseline amount. Similarly, Group 3 control households received BDT 2,395, close to double the baseline amount. Although both Group 2 and Group 3 treatment households received more than their respective controls during follow-up, these differences were insignificant.

5.6.2 Key Takeaway: Government Support

As COVID-19 affected poor households severely across all groups, a larger-than-usual number of households applied for government support—severely affecting the study's ability to capture the impact of the programme on this outcome.

Since baseline, the number of households getting support and the amount of support increased significantly, with no significant difference between treatment and control households. Since there was a shock in the form of COVID-19 during the intervention, the control groups might have applied for the support more than they naturally would. On the other hand, the treatment groups were not only supported by the programme interventions but also received a special direct cash stipend from the programme. These buffers enjoyed by the treatment households possibly decreased the programme's impact on their access to government support.

5.7 Food Security

Food security is yet another important outcome of improved economic status. Several indicators have been used to assess the impact of the programme on food security outcomes including affording two meals a day, confidence about their food security, ability to afford food generally and during lean seasons, food diversity, etc.

Given that Group 3 households were better off than those in Group 2, to begin with, based on their eligibility criteria, they were also more likely to be food secure compared to the latter group. The results throughout this section reflect this logic.

5.7.1 Impact of UPG on Food Security

In Group 2, approximately 82% of the control households could afford two meals (for the month before the follow-up survey); this rate was higher (86%) in treatment households (Figure 5.30).

Due to the baseline difference in economic status, the proportion of households affording two meals was higher across Group 3 than Group 2. And even though a slightly higher percentage of Group 3 treatment households could afford two meals than the control, the difference (1.5 percentage points) was smaller than the difference in Group 2 (4 percentage points),

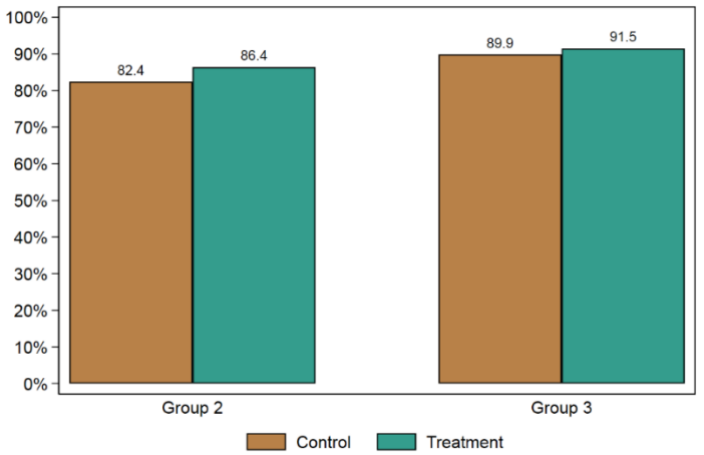


Figure 5.30: Households that could afford two meals per day last month (%)

Respondents were also asked about their opinion on the current food availability status in their households. It is found that four percentage points higher proportions of UPG households in both Group 2 and Group 3 than in their respective control groups were confident about their food availability at the time of the follow-up survey (Figure 5.31).

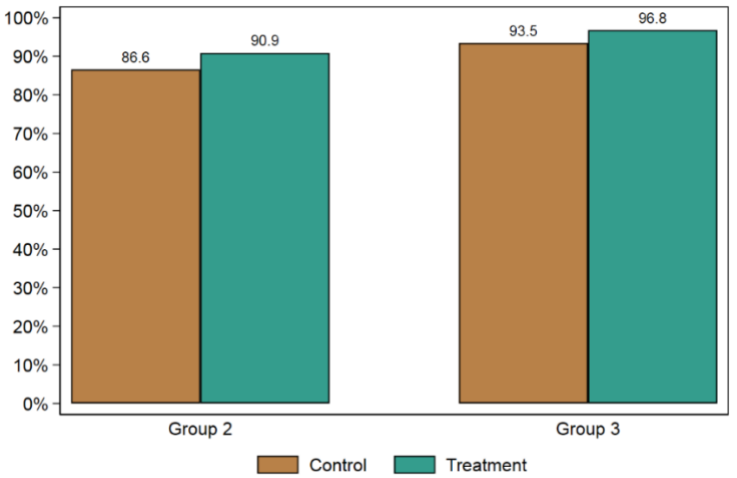


Figure 5.31: Respondents' confidence about household's current food availability (%)

Kartik and Choitro, two months from two different pre-harvest seasons in Bangladesh, are considered lean/dry seasons because, during these times of the year, both food and work are usually in short supply. The respondents were asked whether they could afford food in the last lean/dry seasons, and the differences in treatment and control groups are much more pronounced in this indicator. Only 24% of the control households of Group 2 reported no food deficit in the last lean seasons. Comparted to them, Group 2 treatment households were doing much better—32% reported having enough food in the last lean seasons.

Again, these proportions were higher for both treatment and control in Group 3 than those in group 2. However, on this measure, both treatment groups saw similar improvements, about 7 percentage points higher compared to their respective control groups (Figure 5.32). These findings suggest that UPG was successful in significantly improving the food security of the participating households, especially during the lean/dry seasons.

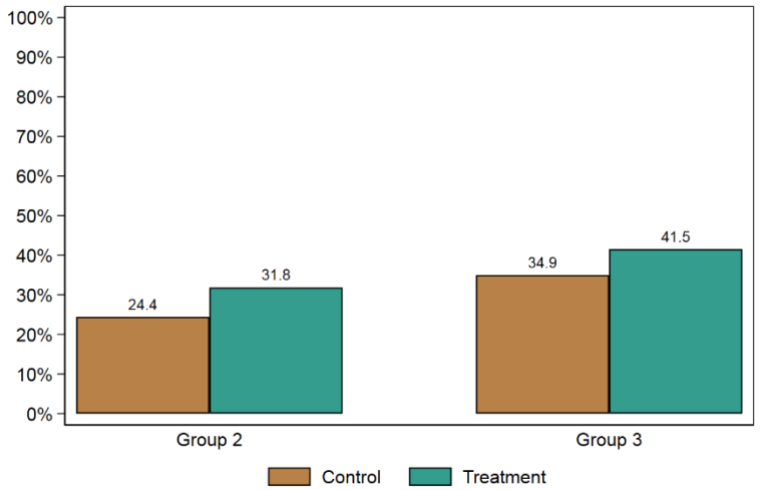


Figure 5.32: Households that could afford enough food in the dry season (%)

Similar patterns can be observed in the likelihood to afford enough food every day for the last month across the groups—overall better situation of Group 3 and substantially higher proportions of households in both treatment groups reporting affordability compared to their respective control groups (Figure 5.33). However, the average increase is higher for Group 2 treatment households (8 percentage points higher than control) compared to the increase in Group 3 (6 percentage points).

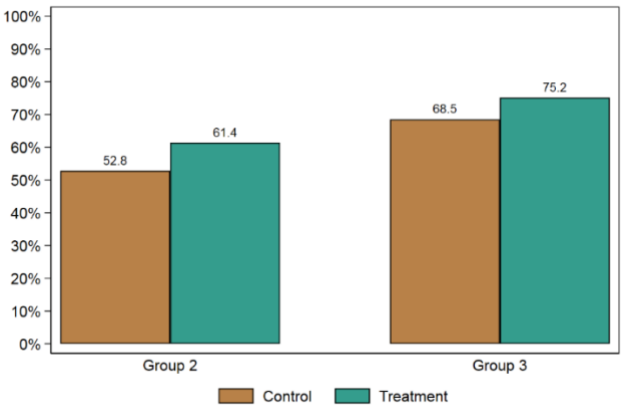


Figure 5.33: Households that could afford enough food each day last month (%)

The respondents were also asked whether any day in the last month their families ate nothing but rice because they could not afford it. The question was used as a measure of a household's dietary diversity. As expected, the results demonstrate that the prevalence of a rice-only diet in a day was lower across Group 3 compared to Group 2 (Figure 5.34). And, in both treatment groups, significantly smaller proportions of treatment respondents reported the incidence of a rice-only diet compared to their respective control groups. However, there is a reversal in the trend on this indicator—unlike the results on the other food security indicators, the decrease (in other words, improvement in dietary diversity) is larger for Group 3 (14 percentage points) compared to Group 2 (9 percentage points).

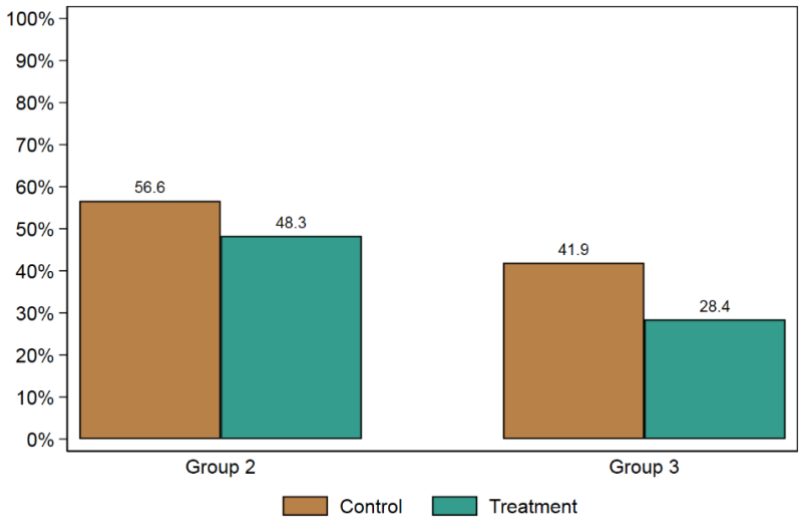


Figure 5.34: Households that ate nothing but rice for at least one day during the last month

5.7.2 Key Takeaway: Impact on Food Security

With the increases in income and assets, UPG households are more food secure compared to the control households. While the differences between treatments and their respective controls are modest on the most basic food security indicator—affording two meals a day—the difference becomes more pronounced in the case of food adequacy, diversity, and notably their resilience to the lean/dry season crisis. The steady economic growth, combined with robust agricultural production, in Bangladesh for the last two decades vastly improved the basic food security situation in the country, with little room for improvement through programmes like UPG. But significant improvements in more advanced food security measures indicate a robust, qualitative impact of the programme on the participating households' food security. Existing evidence suggests that the impact on food security further increases in the long run (Bandiera et al., 2017). Thus, it is reasonable to expect the programme's impact on the food security of the 2019 cohort to be even greater over time.

Another major takeaway from this section is larger improvements for Group 2 in all but the dietary diversity indicator. These results also make sense. With improved income, the poorest of the poor, who are naturally most food deprived, are most likely to prioritize food. What is notable here is that even after the large improvements, the Group 2 treatment could not even reach the level of the Group 3 control.

Appendix C1.6 provides regression outcomes regarding food security.

5.8 Women Empowerment

Women empowerment is one of the primary pillars of the UPG programme. The results on the employment and income outcomes of the respondents, discussed above, indicate that the programme has a significant, positive economic empowerment impact on these women. Women's economic empowerment brought by UPG is also expected to improve their other empowerment outcomes, notably household decision-making.

5.8.1 Participation in Income-Generating Activities

Previously, the economic empowerment outcomes of the respondents were discussed, showing the significant impact of the programme on the female UPG participants. Here, the analysis has been expanded by looking at the income-generating activities for all female working-age (aged 16-64) household members.

Approximately 74% of the Group 2 and 53% of the Group 3 working-age household members including the respondent were employed at the baseline. Similar to the results for the respondents, in the follow-up survey, the employment rate remained stagnant for Group 2 control female household members but increased by 17 percentage points for the Group 3 control. The employment rate for Group 2 treatment households increased by 11 percentage points. For Group 3 treatment, the increase is much higher. From the 54% baseline rate, the employment rate in the follow-up survey increased to 81% for this group. Figure 5.35 shows the employment rate of the female working-age group members of the baseline and follow-up survey.

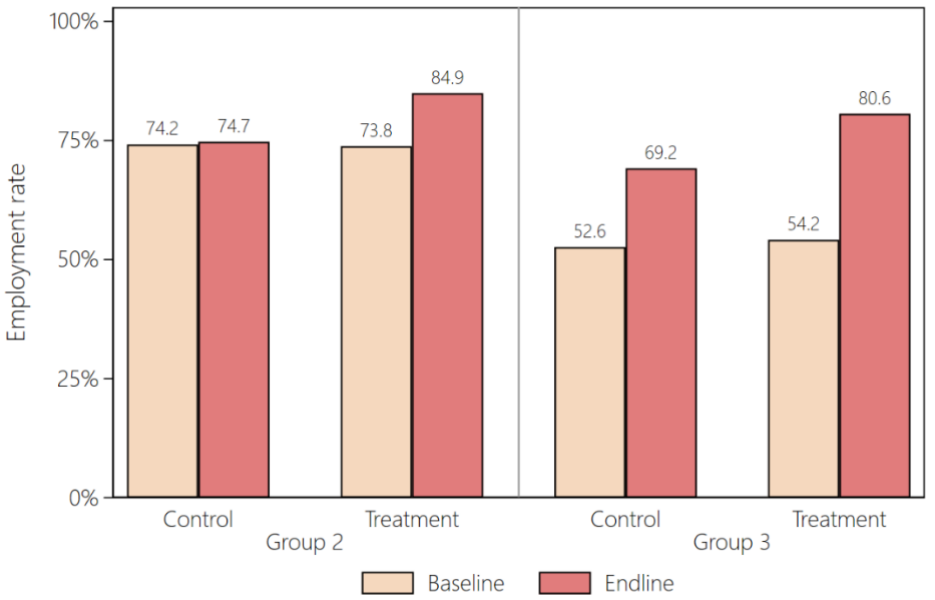


Figure 5.35: Female working-age group member's employment rate

Consistent with the results for the respondents, the average income decreased since the baseline for Group 2 control and increased for the rest. At baseline, the average monthly income of the working-age female members in Group 2 control was BDT 4,418 and, in the follow-up survey,

their income dropped to BDT 2,879. In Group 2 treatment households, the average income of the working-age women increased by BDT 696. The monthly income of both the treatment and control women in Group 3 increased. For control, the income increase was marginal (BDT 193) whereas, for treatment households, the income increased by BDT 2,145. Figure 5.36 shows the monthly income of female working-age household members.

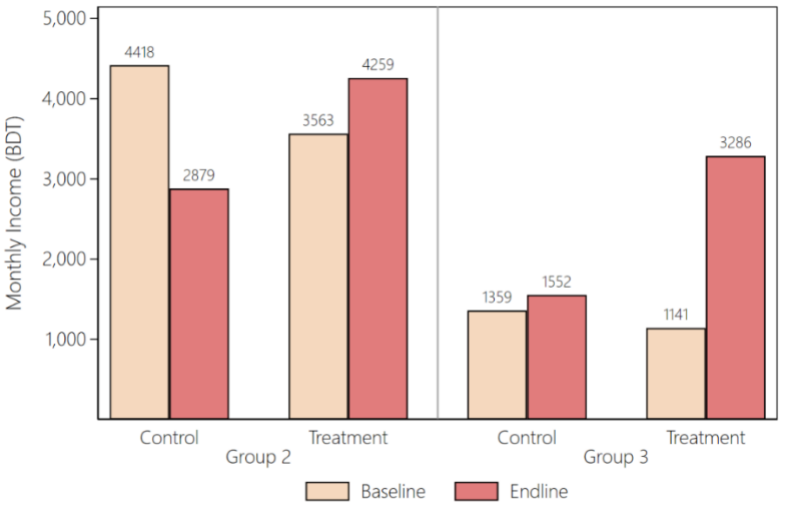


Figure 5.36: Working-age household members' monthly income (BDT)

The trends in the female household members' employment and income outcomes are very similar to the outcomes for the respondents, for example, significantly lower baseline rates of employment in Group 3, a significant increase in employment but a modest increase in income for Group 3 control, and an impressive increase in both employment and income in Group 3 treatment. The probable reasons for these trends are also similar to those for the respondents, as discussed in the relevant sections.

5.8.2 Household Decision

At baseline, the majority of the women in both treatment and control Groups 2 and 3 reported influencing major household decisions. Over 88% of the respondents believed that they influenced decision-making on matters like buying land, repairing the home, selecting where they should take loans from, children's education, etc. In addition, only 91% of the respondents reported that if they wanted to start a new income-generating activity, they would not need to

take permission from their spouses. (Appendix D1).

In the follow-up survey, the respondents' beliefs on taking household decisions remained similar for both control and treatment households. As their responses were overwhelmingly positive at baseline, there was little to no headroom for the programme to increase women's influence on these household-level decisions (Figure 5.36).

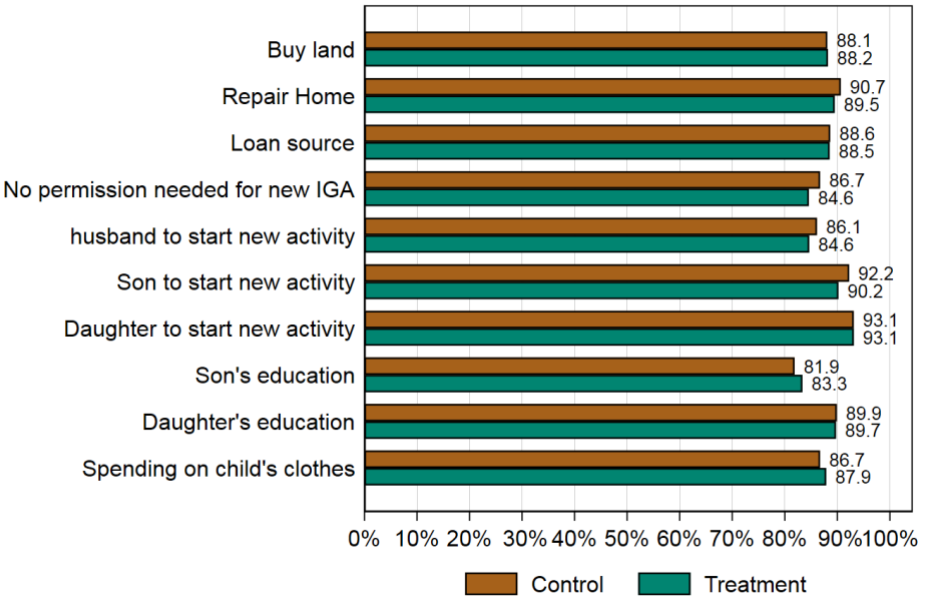


Figure 5.37: Respondents' influence in household decision-making at follow-up (%)

5.8.3 Additional Follow-up Questions on Purchasing Decisions

Some new questions on respondents' ability to purchase something for the household and themselves were added to the follow-up survey. More treatment respondents reported freedom in purchasing clothes, vegetables, personal supplies, or medication without consulting other family members, but the differences between treatment and control are not significant (Figure 5.37).

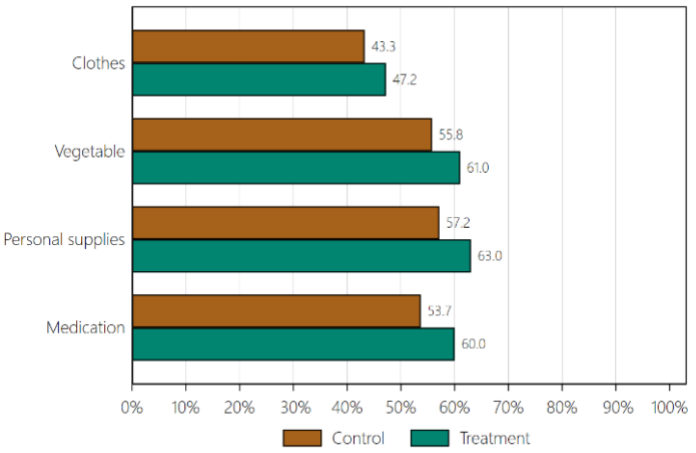


Figure 5.38: Respondents' influence on household purchases (%)

Though overall, the proportions of women reporting their influence on these more minor decisions, e.g., buying personal supplies, are much smaller than the proportions reporting influence in other major household decision-making, e.g, buying land. These anomalous results can stem from the following:

The responses are 'subjective reporting of influences', leaving a large scope of interpretation by the respondents. As such, they may interpret the influence on major decisions as having a 'say'—irrespective of the strength of that say—but may interpret the influence on purchasing as their ability to make the purchase. In that case, the results make sense. As women in rural Bangladesh face steep challenges in physical mobility, many may be unable to make day-to-day purchases themselves even though they may have some level of influence on other major household decisions.

5.7.4 Key Takeaway: Women Empowerment

The main takeaway of this section is that female working-age member of UPG households in both groups are more likely to take part in income-generating activities, but the impact of the programme on other indicators cannot be interpreted in a straight-forward way because of the subjectivity involved in the responses to the indicators. For example, it is well-known that major household decisions, like buying land, repairing the house, and continuing children's education, are primarily taken by the male household members in Bangladesh. So, when an overwhelming majority of women respond in the affirmative when asked whether they influence those decisions

(as they did), what they mean by influencing remains an open question. The data clearly indicates, as discussed above, that their interpretations of household decisions and day-to-day purchasing decisions are probably quite different.

Appendix C1.7 shows the regression outcomes regarding women empowerment.

6. Concluding Remarks

For the last 20 years, BRAC's UPG programme has been successfully lifting people out of extreme poverty in Bangladesh and many other developing countries, meaningfully improving millions of lives. Like any other BRAC programme, UPG has gone through continuous finetuning and several major redesigning phases, based on programme and research learnings and the changes in the socioeconomic context over time, to become more impactful and relevant. The latest major changes to the programme were brought in 2017, in which participating households are divided into three groups to provide more need-based, customized programme packages. And, due to the steady economic improvement of Bangladeshi citizens in recent decades, the consumption support component of the programme became less essential and thus was replaced with a savings match facility.

In the redesigned programme, Group 1 consist of the elderly population (50+), with the primary focus on connecting them with the government social security system. The focus for Groups 2 and 3 is a graduation out of poverty through sustainable, productive employment. This study evaluated the impact of the redesigned UPG programme on Group 2 and Group 3 households, using an RCT on the 2019 programme cohort.

UPG has four fundamental pillars: (1) livelihood enhancement; (2) social protection; (3) financial inclusion; and (4) social empowerment. The study finds a clear programme impact on two pillars, livelihood enhancement and financial inclusion. Compared to their control counterparts, the programme participants experienced significant increases in their employment, working hours, self-employment, and income. Participating households experienced a major increase in their per capita household income—37% for Group 2 and 59% for Group 3 relative to their control counterparts. Consequently, during follow-up, 20 percentage points fewer in Group 2 and 24 percentage points fewer in Group 3 treatment households lived below the extreme poverty line; the corresponding decreases in control groups were small, about 6 percentage points. The study also finds positive impacts of the programme on other outcomes of interest, including business expenditure, access to hygienic latrines, food security, and ownership of productive and non-productive assets.

The study finds significant impacts of the programme on many financial inclusion indicators. During follow-up, larger shares of programme households had savings, and, on average, treatment households had BDT 5,391 in savings and control households had BDT 2,418. The proportions of households with loans and the average amounts of loans per household increased in both treatment and control groups, most likely due to COVID-19. However, the real difference between the treatment and control groups can be seen in the composition of loans: treatment households depended more on formal loans while the control households depended more on informal loans. Finally, the programme significantly increases the chances for participants to receive BRAC loans though it does not increase their likelihood of getting larger loans.

The impacts on social protection and social empowerment are mixed. The study did not find any significant difference between the treatment and control in access to social protection services or the amount received from these services. The lack of impact on these indicators may be attributed to COVID-19: the economic shock created by the pandemic pushed many control households to seek external support while the programme support partly alleviated the needs of the UPG households.

In the case of women empowerment, a core element of the social empowerment pillar, the study does not find any significant impact. Most women across treatment and control groups mentioned having an influence on a range of household decisions, both in baseline and follow-up, with no significant change. On the questions about influence in several purchasing decisions (asked only during follow-up), far fewer women responded in the affirmative, with no significant difference between treatment and control.

The study provides strong evidence of the overall effectiveness of the UPG programme. It also generates several broad learnings and implications, as described below:

Shock resilience: The programme on the 2019 cohort was delivered during the greatest crisis of this century, i.e., the pandemic. As described in the report, it forced the programme to change the implementation plan and disrupted the study design in many ways, not only by reducing the scope of the study but also confounding the results on several indicators. However, it also allowed us to make some comments about the programme's impact on the resilience of the participating households.

As discussed, average per capita income in control households decreases from the baseline, probably due to COVID-19, whereas it increases substantially for treatment households despite COVID-19. Hence, it is not unreasonable to assume that UPG renders greater crisis resilience capacity to the participants. Though no impact could be detected on the questions of crisis coping mechanisms or social security, with higher income, assets, and savings and greater access to formal financing, the treatment households are likely to be more shock resilient.

And, it is also reasonable to believe that the improved resilience could result, at least partly, from the productive employment opportunities for women created by the programme. Group 3 respondents are a case in point. Over 40% of the respondents in this group did not work during baseline. But, the opportunities given by the programme drastically increased the treatment women's employment and income and improved their family's economic outcomes. A large number of control women—though much smaller than Group 3 treatment—also started working during follow-up, possibly due to the pandemic's economic stress, but they did not see similar success.

The large increases in Group 3 participants' labour market outcomes (a significant part of whom were not employed before) also further establish the dire need for creating productive, respectable, and feasible (e.g., home-based) opportunities for unleashing women's economic power.

Asset threshold, poverty trap, and inequality: Significantly better performance of Group 3 participants compared to Group 2 in almost all economic employment indicators, including escaping extreme poverty, provide strong support for the poverty threshold argument presented by Bolboni et. al. (2021)—that a household needs to reach a certain asset threshold (in this case, with the programme support) to escape poverty. Consequently, this study also adds convincing evidence to the idea of the 'poverty trap' and the case for 'big-push' policies for breaking the trap.

For the programme, the question is whether to further differentiate the amount of asset transfer/loan based on the baseline income and asset levels of the participants, i.e., increasing the value of the asset for Group 2 so that they can reach the threshold level of asset. Such a policy would increase the programme cost but may substantially increase impact by further reducing poverty in Group 2, justifying the cost increases.

Finally, there is possible concern about increased intergroup inequality. As group 3 was already better off at baseline than Group 2, a stronger impact on Group 3 might increase the inequality between the two groups. What's more notable is that despite significant improvements in all economic indicators for Group 2, albeit smaller than Group 3, Group 2's economic indicators remained worse than even the Group 3 control. Thus, the study suggests an increased inequality between Group 2 and 3 programme households. Possible modifications in the programme, as suggested above, can also help alleviate this concern.

Women empowerment, economic and social: On the question of women's empowerment, predictably, measuring their economic empowerment was relatively easier—the programme substantially increased female household members' labour market outcomes—than measuring their social empowerment. The lack of detectable impact and the seemingly anomalous results across different relevant indicators reconfirm the well-established challenges of social empowerment. First, whether and to what extent the economic empowerment of women results in their social empowerment. There is limited evidence of this happening. Then the question for the programme is how greater social empowerment of women can be achieved. Second, the results also re-establish the illusive nature of the measures of social empowerment and the need for investing in developing methods and measurements for better capturing these outcomes.

Finally, the need for further follow-up: As seen in previous studies, the size and nature of the Graduation type programme impact change over time, in some cases, they diminish (e.g., income) and in some cases, it increases (e.g., assets and consumption). As the design of the new programme is considerably different from the previously studied versions, it is imperative to check how these impacts change over time, in other words, the sustainability of the programme. Besides, as COVID-19 has confounded the programme's impact in many ways, the longer-term evaluation of the same programme cohort may allow a clearer understanding of the programme's impact.

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Appendix A: Second Survey Attempts

Data collection during the first attempt of the follow-up survey revealed that around 20% of treatment households did not receive the intended treatment. Respondents indicated that they refused the treatment for a variety of reasons, including not having enough space to raise a cow, concern about the ability to pay the requested loan amount back to BRAC, and dissatisfaction with the level of financial support that BRAC would provide.

Due to concerns about the study being underpowered, it was elected to survey a further five treatment households per branch. This "second attempt" occurred from March 2022 to April 2022. Unfortunately, the additional responses caused the attrition rate between treatment and control households to become very different (see the Appendix for more details). This presents a threat to the validity of the study since it is possible (even likely) that attrited households are systematically different from those that did not attrit. This would bias the estimates of the UPG programme. Accordingly, it was decided to include only "first attempt" households in this report.

Ultimately, 1,678 treatment households and 1,680 control households were successfully reached during the first attempt. These are the households evaluated in this report.

Appendix B: Balance at Baseline

Households in the evaluation subsample are well-balanced for key household, respondent, access, and wealth attributes (Table A1). It can be said with confidence that treatment and control households are similar. This removes systematic differences between treatment and control households as sources of bias.

The following two sections report balance at baseline by treatment Group and gender of the household head. Section 6 provided heterogeneity in outcomes according to these two factors. The differences reported below provide context for those results.

Baseline Differences by Treatment Group

Households from different treatment groups are known to be systematically different. At the time of enrolment in UPG, Group 3 households were expected to be in a better economic situation than Group 2 households. Balance statistics (Table A2) indicate this is true, as Group 3 households held significantly more financial assets and land at baseline.

Group 2 respondents were also older, less likely to be literate, and more mobile at baseline. This is not surprising. Group 2 households mainly rely on the main female member's earnings, often because the respondent is widowed, divorced, or separated.

Baseline Differences by Gender of the Household Head

Households headed by women are also systematically different from those headed by men. At the time of enrolment, the respondents in female-headed households were much more likely to be widowed, divorced, or separated (Table A4). In this sample, 16.8% of households are headed by women and the remaining 83.2% by men.

Because many of these respondents were widowed at baseline, they also tend to be much older (Table A3). Female-headed households' respondents were also less likely to be literate, and more mobile, but less empowered at baseline. Annual household income is also significantly lower, in part because fewer people live in the household.

Table A1: Balance Table—Control vs Treatment

Variable	(1) Control Mean (SE)	(2) Treatment Mean (SE)	T-test p-value (1)-(2)
Demographics			
People in household	4.011	4.013	0.960
	(0.033)	(0.034)	
Number of children	1.783	1.795	0.766
	(0.027)	(0.028)	
Respondent Characteristics			
Respondent age	32.532	32.714	0.560
	(0.218)	(0.224)	
Can read and write a letter	0.440	0.444	0.832
	(0.012)	(0.012)	
Mobility index	0.133	0.127	0.258
	(0.004)	(0.004)	
Empowerment index	0.779	0.786	0.405
	(0.005)	(0.005)	
Access			
Has electricity connection	0.846	0.861	0.218
	(0.009)	(0.008)	
Has access to shared or private latrine	0.949	0.956	0.327
	(0.005)	(0.005)	
Assets			
Total asset value (BDT)	4844.887	7138.147	0.342
	(265.270)	(2397.125)	
Annual household income (BDT)	84042.850	87153.418	0.219
	(1757.375)	(1823.830)	
Total savings (BDT)	1125.525	987.219	0.558
	(199.466)	(126.341)	
Total outstanding loans (BDT)	5780.145	5957.869	0.798
	(494.294)	(488.132)	
Total land ownership (decimals)	1.634	1.566	0.806
	(0.157)	(0.230)	
N	1678	1680	

Notes: Mobility index is the proportion of different locations that the respondent can visit without permission. Empowerment index is the proportion of household decisions that the respondent has influence over.

Table A2: Balance Table—Group 2 vs Group 3

Variable	(1) Group 2 Mean (SE)	(2) Group 3 Mean (SE)	Mean Difference (2)-(1)
Demographics			
People in household	3.839	4.168	0.330***
	(0.037)	(0.029)	
Number of children	1.777	1.800	0.023
	(0.030)	(0.025)	
Respondent Characteristics			
Respondent age	35.210	30.290	-4.919***
	(0.226)	(0.200)	
Can read and write a letter	0.324	0.549	0.225***
	(0.012)	(0.012)	
Mobility index	0.158	0.105	-0.054***
	(0.004)	(0.003)	
Empowerment index	0.760	0.803	0.044***
	(0.006)	(0.004)	
Access			
Has electricity connection	0.799	0.902	0.103***
	(0.010)	(0.007)	
Has access to shared or private latrine	0.939	0.964	0.025***
	(0.006)	(0.004)	
Assets			
Total asset value (BDT)	3545.783	8197.578	4651.795*
	(256.851)	(2281.568)	
Annual household income (BDT)	74914.595	95230.809	20316.214***
	(1546.072)	(1935.896)	
Total savings (BDT)	652.769	1420.131	767.362***
	(103.867)	(203.579)	
Total outstanding loans (BDT)	4181.553	7390.300	3208.747***
	(324.150)	(589.968)	
Total land ownership (decimals)	1.253	1.913	0.660**
	(0.215)	(0.181)	
N	1592	1766	

Notes: Mobility index is the proportion of different locations that the respondent can visit without permission. Empowerment index is the proportion of household decisions that the respondent has influence over. ***, **, and * indicate significance at the 1, 5, and 10 percent t-test critical level.

Table A3: Balance Table—Female Head vs Male Head

Variable	(1) Female Mean (SE)	(2) Male Mean (SE)	Mean Difference (2)-(1)
Demographics			
People in household	3.012	4.214	1.201***
	(0.058)	(0.024)	
Number of children	1.449	1.858	0.409***
	(0.047)	(0.021)	
Respondent Characteristics			
Respondent age	38.647	31.407	-7.241***
	(0.363)	(0.164)	
Can read and write a letter	0.278	0.475	0.197***
	(0.019)	(0.009)	
Mobility index	0.233	0.109	-0.124***
	(0.008)	(0.003)	
Empowerment index	0.715	0.796	0.081***
	(0.013)	(0.003)	
Access			
Has electricity connection	0.807	0.863	0.056***
	(0.017)	(0.007)	
Has access to shared or private latrine	0.947	0.953	0.007
	(0.009)	(0.004)	
Assets			
Total asset value (BDT)	3269.986	6541.709	3271.724
	(380.809)	(1447.906)	
Annual household income (BDT)	58994.530	90969.481	31974.951***
	(2598.131)	(1407.448)	
Total savings (BDT)	1171.544	1033.074	-138.471
	(304.770)	(127.821)	
Total outstanding loans (BDT)	4916.982	6061.247	1144.265
	(1047.494)	(359.873)	
Total land ownership (decimals)	1.512	1.618	0.106
	(0.321)	(0.155)	
N	564	2794	

Notes: Mobility index is the proportion of different locations that the respondent can visit without permission. Empowerment index is the proportion of household decisions that the respondent has influence over. ***, **, and * indicate significance at the 1, 5, and 10 percent t-test critical level.

Table A4: Marital Status, by Gender of the Household Head

	(1) Female Head	(2) Male Head
Divorced	7.09	0.32
Separated/deserted	21.63	0.68
Widowed	49.82	0.75
Married, living with spouse	21.45	98.25
Observations	3358	

Proportions reported in percentages.

Appendix B: Attrition

Differential attrition occurs when respondents from treatment and control groups are lost to follow-up at different rates. This presents a threat to validity because it is likely that respondents who cannot be located for a follow-up survey are systematically different from those who can.

As discussed in Section 4, the survey proceeded in two "attempts." Attempt 1 surveyed the intended number of households based on pre-follow-up power calculations. Attempt 2 was conducted after 20% of treatment households were found to be non-compliant. These households rejected the UPG programme for a variety of reasons, including finding the loan terms unfavourable or not having enough space for the cow. Attempt 2 only sought to survey treatment households.

Attrition was well-balanced by treatment status for Attempt 1 surveys. Around 25% of households attrited for both treatment and control households (Table B1). It can be said with confidence that estimates of UPG's impact are not biased due to differential attrition when based on Attempt 1 surveys only.

When further separated into programme groups, attrition remains fairly balanced. Group 3

households appear slightly less likely to be lost to follow-up compared to Group 2 households, but the difference is not large (Table B2). Similarly, attrition is fairly balanced by the gender of the household head. Female-headed households are slightly more likely to be lost to follow-up compared to male-headed households, but the difference is also not large (Table B3).

On the other hand, when both Attempt 1 and Attempt 2 surveys are included, attrition becomes unbalanced by treatment status. Control households have a 25.75% attrition rate, while treatment households have an attrition rate of 15.93%. During Attempt 2, enumerators visited treatment households that were not reachable during Attempt 1. This drove down the overall attrition rate for treatment households. As the Group of treatment households who could only be reached on Attempt 2 may be systematically different, all Attempt 2 respondents have been excluded from our analysis. All results in this report are based on Attempt 1 responses only.

Table B1: Attrition for Attempt 1 Only, by Treatment Status

	Control N (%)	Treatment N (%)	Total
Available	1678 (74.25)	1680 (74.80)	3358
Not available (attrition)	582 (25.75)	566 (25.20)	1148
Survey attempts	2260	2246	

Table B2: Attrition for Attempt 1 Only, by Treatment Group

	Control		Treatment		Total
	Group 2	Group 3	Group 2	Group 3	
Available	791 (72.64%)	887 (75.75%)	801 (74.03%)	879 (75.52%)	3358
Not available (attrition)	298 (27.37%)	284 (24.25%)	281 (25.97%)	285 (24.48%)	1148
Survey attempts	1089	1171	1082	1164	4506

Table B3: Attrition for Attempt 1 Only, by Gender of the Household Head

	Control		Treatment		Total
	Female Head	Male Head	Female Head	Male Head	
Available	279 (72.47%)	1399 (74.61%)	285 (73.07%)	1395 (75.16%)	3358
Not available (attrition)	106 (27.53%)	476 (25.39%)	105 (26.93%)	461 (24.84%)	1148
Survey attempts	385	1875	390	1856	4506

Table B4: Attrition for Both Attempts, by Treatment Status

	Control	Treatment	Total
Available	1678 (74.25%)	2105 (84.07%)	3783
Not available (attrition)	582 (25.75%)	399 (15.93%)	981
Survey attempts	2260	2504	4764

Appendix C: Regression Model and Output

C1.1. Models

The pooled model estimates the overall effect of the treatment and is specified:

$$Y^1{}_{ib} = \beta_0 + \beta_1 UPG + Y^0{}_{ib} + X_{ib} + \epsilon_{ib}$$

Where, $Y^1{}_{ib}$ represents the outcome of interest for individual i in BRAC branch b; X_{ib} is a vector of baseline covariates expected to influence the outcomes; and ϵ_{ib} is an error term clustered at the BRAC branch level. The baseline value of the outcome $Y^0{}_{ib}$ is also controlled for. The coefficient of interest is β_1, the impact of the UPG programme on the outcome of interest.

When applicable, heterogeneous effects by treatment Group and gender of the household head have also been reported. The specification of the model is separated by treatment Group:

$$Y^1{}_{ib} = \beta_0 + \beta_{G2} UPG \times Group2 + \beta_{G3} UPG \times Group3 + Group3_{ib} + Y^0{}_{ib} + X_{ib} + \epsilon_{ib}$$

Where, $Y^1{}_{ib}$, $Y^0{}_{ib}$, X_{ib}, and ϵ_{ib} are as defined above. The coefficients of interest are β_{G2}, the impact of UPG on Group 2 households, and β_{G3}, the impact of UPG on Group 3 households.

Similarly, the specification of the model is separated by the gender of the household head:

$$Y^1{}_{ib} = \beta_0 + \beta_{MH} UPG \times Male\ Head + \beta_{G3} UPG \times Female\ Head + Female\ Head_{ib} + Y^0{}_{ib} + X_{ib} + \epsilon_{ib}$$

Here, the coefficients of interest are β_{MH}, the impact of UPG on households with male heads, and β_{FH}, the impact of UPG on female heads.

The control variables X_{ib} are the baseline variables likely to influence the UPG outcomes of interest. They are as presented in Table C1.

Table C1: Control Variables

Household attributes	
Size	Total number of people in respondent's household
Children	People under age 15 in respondent's household
Electricity access	Household has electricity connection (binary variable)
Latrine access	Household has access to shared or private latrine (binary variable)
Respondent attributes	
Age	Age of respondent
Mobility index	Proportion of different locations that respondent can visit without permission
Empowerment index	Proportion of household decisions that respondent has influence over
Literacy	Respondent can read and write a letter (bnary variable)
Total savings	Total savings held by the respondent (BDT)
Wealth indicators	
Total income	Total household earnings from all business activities in the past year (BDT)
Total asset value	Total value of all assets owned by the household (BDT)
Total land	Total land owned by the household (decimals)
Total outstanding loans	Total value of all loans held by the respondent and spouse (BDT)

C1.2. Impact on Children

It is expected that the UPG programme should impact children by and education. Improvement in

economic conditions allows treatment households to keep children in school and avoid working full-time. The effect of treatment on (1) whether households have a child out of school and (2) whether households have a child working in an income-generating activity has been estimated.

Children are defined as those under the age of 15. Estimation of these two outcomes is restricted to only households with at least one child. Of the 3,358 total households in our sample, 2,647 (78.8%) have children in the household.

Treatment households with children have a 1.7% lower probability of having a child out of school (Table C2). But this effect is more pronounced for Group 2 households (3.0% lower) and female-headed households (6.1% lower).

Interestingly, treatment is associated with a 3.2% higher probability of having a child engaged in economic activity (Table C2). Effect sizes are similar by treatment Group and gender of the household head. However, most children are not working long hours. Working children in control households work, on average, 559 hours and in treatment households, 577 hours (Table C3). This is around 10–11 hours per week. Thus, it may be that the enterprise training provided by UPG encourages some treatment households to engage their children in income-generating activities.

Table C2: Treatment Effects on Children's Work and Schooling

	(1) Pooled	(2) Group 2	(3) Group 3	(4) Female Head	(5) Male Head
Child out of school	-0.0174*	-0.0301*	-0.00792	-0.0605**	-0.0116
	(-1.95)	(-1.95)	(-0.84)	(-2.15)	(-1.25)
Child in econ. activity	0.0321**	0.0319	0.0322**	0.0423	0.0307**
	(2.58)	(1.57)	(2.13)	(1.39)	(2.37)
Observations			2647		

t-statistics in parentheses

*** p<0.01; ** p<0.05; * p<0.10.

Model based on households with at least one child.

Table C3: Child Working Hours, by Treatment

	(1) Control	(2) Treatment
Proportion of working children	0.0696	0.0802
Part-time and above	0.0118	0.0138
Full-time and above	0.0063	0.0053
Average yearly work hours	558.60	577.24

Proportions reported in percentages. Part-time is at least 1,040 hours/year. Full-time is at least 2,080 hours/year.

C1.3. Impact on Labour Outcomes

UPG aims to increase the employment rate, working hours, and earnings of UPG respondents and their total household income. With the increased household income, it is also expected that more treatment households should move below the national poverty line.

C1.3.1. Employment rate of the respondent

The employment rate for UPG respondents is 11.8% higher than the employment rate for control households (Table C4). This impact is larger for Group 2 respondents. There is also a significant difference in impact by gender of the household head. Among female-headed households, treatment respondents have a 57% higher probability of participating in income-generating activities. This impact is negligible for respondents in male-headed households.

C1.3.2. Working hours of the respondent

With the increase in employment rate, significant increases in working hours are also expected. Respondents in UPG households work an average of 31.62 hours more in a month (Table C4). Again, this impact is larger for respondents in Group 2 households and female-headed households. In female-headed households, respondents work an average of 72.29 more hours per month. This impact is also significant for respondents in male-headed households, who work an average of

28.52 more hours per year.

C1.3.3. Earning of the respondent

UPG respondents earn a significantly higher monthly income than control respondents, on average (difference of BDT 997). The effect size is similar for the treatment groups. UPG respondents from female- and male-headed households earn significantly more (Table C4). Again, the effect size for respondents in female-headed households is significantly higher at BDT 1,684, compared to BDT 1,110 in male-headed households.

C1.3.4. Self-employment rate

UPG also increased the self-employment rate. The self-employment rate is 17.8% higher for treatment respondents in Group 2. This difference is slightly lower for Group 3 (6.38%). However, the self-employment rate for Group 3 households was already higher at baseline compared to Group 2; so, there was less room for improvement.

For both male- and female-headed households, the self-employment rate of UPG respondents is significantly higher, though, again, this effect is more pronounced for respondents in female-headed households (Table C4).

C1.3.5. Household income

Given the increase in the employment rate, there is also a significant increase in household monthly income. On average, UPG households earn BDT 4,024 more. UPG households of Group 2 earn BDT 3,195 more in a month compared to their control counterparts. This effect size is much larger for Group 3. Treatment households of Group 3 earn BDT 4,805 more than control households.

For both male- and female-headed households, household income is significantly higher. Male-headed UPG households earn BDT 3,629 more in a year compared to the Control Group. Female-headed UPG households earn BDT 5,614 more (Table C4).

C1.3.6. Per Capita Monthly Income

UPG intervention increased households' per capita income. Intervention impact is significant for both groups. On average UPG households' per capita monthly income is BDT 987 (Table C4) higher than control households. This impact size is much larger for Group 3.

The impact is significant for both male- and female-headed households but is larger for female-headed households.

C1.3.7. Poverty

UPG households from both groups are less likely to live under the poverty line. UPG households are 17.1% less likely to be under the poverty line (Table C4). This impact is more pronounced for Group 3 households (17.8% lower).

Table C4: Treatment Effect on Respondents' Labour Outcomes

	(1) Pooled	(2) Group 2	(3) Group 3	(4) Female Head	(5) Male Head
Employment	0.118***	0.124***	0.113***	0.571***	0.00684*
	(9.59)	(8.22)	(6.61)	(23.79)	(1.93)
Monthly working hour	31.62***	33.18***	29.79***	72.29***	28.52***
	(10.80)	(7.57)	(10.36)	(12.20)	(8.64)
Monthly Income	997.2***	972.7**	1011.3***	1684.8**	1110.3***
	(5.44)	(2.75)	(8.11)	(2.70)	(9.17)
Respondent is self employed	0.127***	0.178***	0.0638**	0.192***	0.108***
	(7.44)	(7.56)	(3.42)	(5.11)	(6.08)
Monthly income of the household	4024.3***	3195.4**	4805.8***	5614.9*	3623.2***
	(4.87)	(3.01)	(4.21)	(1.77)	(4.31)
Per capita income	987.4***	819.0**	1147.1***	1373.2*	908.9***
	(4.98)	(2.87)	(4.48)	(1.81)	(4.75)
Household under poverty	-0.171***	-0.166***	-0.178***	-0.126***	-0.172***
	(-10.03)	(-6.26)	(-7.26)	(-3.67)	(-8.84)
Observations			3358		

t-statistics in parentheses
*** p<0.01; ** p<0.05; * p<0.10.

C1.4. Financial, Productive, and Non-productive Assets

This section focuses on UPG's impacts on financial market participation and behaviour. To be specific, aspects regarding savings and loans in this section are discussed.

C1.4.1. Savings

UPG encourages participants to save through savings matching, encouragement to save, and access to BRAC's financial instruments. With such strong signals, it is expected that a significantly higher share of UPG households will have savings. It is also expected that the savings will be higher for UPG households compared to their control Group counterparts. Treatment respondents are also expected to have different motivations for savings than control respondents. The descriptive statistics in Section 5.3 discuss some findings along the lines of the expectations. Here, further discussion with a focus on the statistical significance of the impact is made.

Impact on Savings

Expectedly, from the results of our impact analysis in Table C5, it can be observed that a significant impact on the share of respondents with savings, the total amount of savings, and the amounts saved at home, with moneyguards, and BRAC. UPG households in total save around BDT 2,970 more than control households. An interesting finding here is the fact that Group 3 households save more with banks, while Group 2 households do with moneyguards and other NGOs. Group 3 households save around BDT 971 more than their control Group counterparts at banks, while Group 2 households save BDT 706 more with moneyguards and BDT 391 more with other NGOs, compared to their control Group. This can be attributed to the fact that Group 3 households are better off compared to Group 2 and hence may have access to banks. On the other hand, for Group 2, given their lower access to banks, the amount gets distributed across moneyguards and other NGOs.

Table C5: UPG's Impact on Savings

	(1) Pooled	(2) Group 2	(3) Group 3	(4) Female Head	(5) Male Head
Has Savings (%)	0.176***	0.195***	0.161***	0.223***	0.168***
	(8.27)	(7.31)	(5.27)	(4.98)	(7.43)
Total Savings Amount (BDT)	2970.7***	2637.7***	3281.5***	2219.8	3119.0***
	(5.08)	(3.68)	(5.23)	(1.07)	(5.41)
Home (BDT)	431.2**	324.1**	528.5**	128.6	492.8**
	(3.27)	(2.44)	(2.87)	(0.55)	(3.27)
Moneyguard (BDT)	563.5**	706.8*	426.8	358.8	605.3**
	(2.39)	(1.83)	(1.66)	(0.62)	(2.64)
Bank/Post-office (BDT)	343.0	-348.2	971.9*	-101.8	423.2*
	(1.18)	(-1.12)	(2.01)	(-0.07)	(1.80)
BRAC (BDT)	1519.4***	1569.9***	1475.5***	1031.5***	1624.7***
	(6.42)	(3.88)	(6.81)	(5.62)	(5.93)
Ohter NGO (BDT)	79.45	391.1*	-192.0	790.4	-64.90
	(0.46)	(1.69)	(-1.02)	(1.35)	(-0.44)
MFS (BDT)	2.170	-0.738	4.942	-1.589	2.982
	(0.62)	(-0.88)	(0.74)	(-0.65)	(0.72)
Observations			3357		

t-statistics in parentheses

*** p<0.01; ** p<0.05; * p<0.10.

Impact on Savings Motivation

Since the intervention is aimed to provide the respondents with economic empowerment, UPG beneficiaries' are expected to face a change in savings motivations from subsistence needs to more long-term needs. There is weak evidence of such a pattern. Significantly fewer treatment Group participants save with the motivation to buy poultry or livestock compared to the Control Group, whereas a significantly higher share of treatment Group participants saves to buy or rent land (Table C6). The difference is around 4 percentage points for buying livestock and 3.3 percentage points for buying or renting land. However, this should be taken with a pinch of salt as the treatment Group was directly or indirectly provided with livestock or poultry. This intervention would naturally mitigate their need for livestock and directly enable a shift in motivations.

Looking at the heterogeneity of impact across Groups 2 and 3, it can be observed that the substitution is significant for Group 3 members. Again, this hints at the fact that the Group 3

respondents who are slightly better off face the impact more than the Group 2 members, as argued by Balboni et al. (2021) in the threshold argument.

Table C6: Saving Motivation

	(1) Pooled	(2) Group 2	(3) Group 3	(4) Female Head	(5) Male Head
School Fees	-0.00264	-0.00179	-0.00247	-0.00804	-0.00150
	(-0.17)	(-0.13)	(-0.11)	(-0.42)	(-0.08)
Build/repair House	-0.00103	0.0153	-0.0156	0.0424	-0.00964
	(-0.09)	(0.81)	(-1.02)	(1.52)	(-0.82)
Buy Livestock	-0.0411**	-0.0317	-0.0495**	-0.0381	-0.0412**
	(-2.36)	(-1.39)	(-2.79)	(-1.41)	(-2.17)
Buy/rent Land	0.0326**	0.0269	0.0374*	0.00411	0.0385**
	(2.48)	(1.57)	(2.01)	(0.15)	(2.61)
For Emergencies	0.00826	0.0101	0.00665	0.0138	0.00719
	(0.87)	(0.78)	(0.42)	(0.48)	(0.72)
Debt Payment	-0.00256	0.00102	-0.00574	-0.00372	-0.00224
	(-0.75)	(0.30)	(-1.31)	(-1.06)	(-0.56)
Start New Enterprise	-0.00357	-0.00453	-0.00267	-0.0128	-0.00179
	(-0.73)	(-0.65)	(-0.40)	(-1.33)	(-0.33)
Dowry	0.00484	0.00874*	0.00116	-0.00375	0.00660
	(1.53)	(1.84)	(0.30)	(-0.50)	(1.66)
Observations			3357		

All variables are binary
t-statistics in parentheses
*** p<0.01; ** p<0.05; * p<0.10.

C1.4.2. Loans

UPG is expected to shift loan holdings towards BRAC for treatment households and towards other microfinance institutions (MFIs) for control households. UPG is expected to increase the amount of loans that households take from formal sources (e.g., banks and MFIs) to support additional business activities as their economic welfare improves. Given the programme's connection to a well-established MFI, it is reasonable to expect that households' reliance on informal loans will also decrease.

Effects on Outstanding Loans

UPG households have a 5.7% higher probability of holding any loan (Table C7). As expected, they are more likely to hold BRAC loans (14.9% higher probability) and relatively less likely to hold a loan from another MFI (4.4% lower probability). UPG does not affect ownership of bank or informal (from friends, neighbours, relatives, or shopkeepers) loans.

There are no heterogeneous effects on loan holdings by treatment Group. On the other hand, the treatment impact on BRAC loan holding is marginally less for female-headed households than for male-headed.

Effects on Loan Amounts

Although UPG is associated with a higher total loan amount (BDT 1,898), this effect is not significant (Table C8). The higher average loan amounts from BRAC are offset by lower average loan amounts from other MFIs. UPG is also associated with a slightly lower informal loan amount, but this difference is not significant.

In fact, there is no significant difference in total loans from BRAC once households with no BRAC loan are removed (Figure C1). This is an unexpected result. UPG graduates typically proceed to BRAC's Microfinance programme. Yet this result suggests that BRAC is making no distinction between the creditworthiness of UPG participants and control households.

Similarly, the distribution of formal and informal loan amounts is nearly identical once households without such loans are removed (Figure C2). Thus, while there is evidence that UPG increases the probability of *getting* a formal loan, it does not change the *amount* loaned.

Table C7: Treatment Effects on Outstanding Loan Holding

	(1) Pooled	(2) Group 2	(3) Group 3	(4) Female Head	(5) Male Head
Any loan	0.0572**	0.0722**	0.0456**	0.0759	0.0541**
	(3.41)	(2.83)	(2.42)	(1.60)	(3.40)
BRAC	0.149***	0.149***	0.149***	0.110***	0.157***
	(9.48)	(7.23)	(7.65)	(4.79)	(9.07)
Other MFI	-0.0437**	-0.0440**	-0.0425**	-0.0192	-0.0482**
	(-3.43)	(-3.43)	(-2.38)	(-1.06)	(-3.31)
Bank	0.00307	0.00522	0.00118	0.00879	0.00192
	(1.09)	(1.35)	(0.29)	(1.28)	(0.62)
Formal	0.0951***	0.0954***	0.0959***	0.0946***	0.0959***
	(5.70)	(4.44)	(4.22)	(3.68)	(5.23)
Informal	0.0193	0.0269	0.0134	0.0370	0.0161
	(0.95)	(1.06)	(0.56)	(0.75)	(0.82)
Observations			3358		

t-statistics in parentheses

*** p<0.01; ** p<0.05; * p<0.10.

Table C8: Treatment Effects on Loan Amounts

	(1) Pooled	(2) Group 2	(3) Group 3	(4) Female Head	(5) Male Head
All loans	1897.7	2397.1	1607.5	3061.4	1714.9
	(1.21)	(1.40)	(0.70)	(1.02)	(1.02)
BRAC	4927.5***	4737.2***	5116.2***	3323.1***	5267.1***
	(7.21)	(5.52)	(6.03)	(4.05)	(6.94)
Other MFI	-1250.4**	-1008.4**	-1428.2*	-227.8	-1438.9**
	(-2.71)	(-2.04)	(-1.97)	(-0.34)	(-2.74)
Formal	4024.9***	3922.4***	4182.0**	3344.9**	4197.1***
	(4.69)	(4.52)	(2.81)	(2.44)	(4.66)
Informal	-1365.3	-2025.9	-756.2	-550.3	-1518.3
	(-1.25)	(-1.38)	(-0.53)	(-0.25)	(-1.26)
Observations			3358		

t-statistics in parentheses

*** p<0.01; ** p<0.05; * p<0.10.

C1.4.3. Access to Banking and Financial Services

Financial inclusion, including access to financial institutions, is one of the UPG graduation pillars. As the programme includes a savings account and matched savings, it is natural that treatment households will have significantly higher rates of savings with BRAC.

Respondents were not asked directly about access to different financial accounts; instead, savings has been used as a measure of financial access. As discussed previously, the proportion of treatment households with any savings is 17.7% higher. This difference is largely due to the difference in savings with BRAC accounts. The proportion of treatment households with such savings is 24.4% higher (Table C10). As expected, control households substitute by saving with other NGOs, including Grameen, Association for Social Advancement (ASA), Thengamara Mohila Sabuj Sangha (TMSS), Rangpur Dinajpur Rural Service (RDRS), Proshika, Buro Bangladesh, Padakhep, and Swanirvar.

The treatment effect for any savings and BRAC savings is slightly larger for Group 2 households. As Group 3 households are generally better off, even households who did not receive treatment may seek financial instruments to support their higher level of economic activity. Also, the treatment effect for any bank savings is slightly larger for Group 3 households. Although overall usage of bank or post office accounts is very low, it may be that the UPG programme allows certain Group 3 households to begin engaging with traditional financial services.

Table C9: Savings as a Measure of Financial Access

	(1) Control	(2) Treatment
Any savings	0.395	0.574
BRAC	0.071	0.315
Other NGO	0.296	0.232
Bank/Post office	0.020	0.035
Observations	3358	

Table C10: Treatment Effects on Access to Banking Services

	(1) Pooled	(2) Group 2	(3) Group 3	(4) Female Head	(5) Male Head
Any savings	0.177***	0.196***	0.161***	0.225***	0.168***
	(8.34)	(7.31)	(5.28)	(4.97)	(7.53)
BRAC	0.244***	0.252***	0.236***	0.203***	0.252***
	(11.79)	(8.86)	(10.65)	(6.04)	(12.43)
Other NGO	-0.0667***	-0.0388*	-0.0901***	-0.00878	-0.0775***
	(-3.92)	(-1.75)	(-3.77)	(-0.28)	(-4.19)
Bank/Post office	0.0150**	0.00142	0.0273***	0.000211	0.0178**
	(2.58)	(0.16)	(3.57)	(0.01)	(3.19)
Mobile money	-0.000602	-0.00130	0.0000752	-0.00345	-0.0000221
	(-0.45)	(-0.98)	(0.03)	(-0.93)	(-0.02)
Observations			3358		

t-statistics in parentheses

*** p<0.01; ** p<0.05; * p<0.10.

and Mobile Money Accounts

Given bKash's connection with the UPG programme, it is also anticipated that treatment households will be much more likely to use mobile money accounts. Unlike other financial instruments, respondents *were* asked directly about bKash account ownership.

As expected, treatment households are significantly more likely to have a bKash account (Table C11). However, having access to an account does not necessarily mean that it is being used. The higher number of treatment households with bKash accounts does not lead to savings in these accounts. Less than 0.2% of respondents overall have any savings in mobile money accounts.

Table C11: bKash Account and Savings

	(1) Control	(2) Treatment
Has bKash account	0.181	0.324
Has mobile money savings	0.002	0.001
Observations	3358	

C1.4.4. Household Assets

UPG households have purchased significantly more land since baseline (Table C12). Both Group 2 (0.369 decimal) and Group 3 (0.320 decimal) UPG households are significantly more likely to buy land. This impact is more prominent among male-headed households.

UPG households are also more likely to have greater reared assets. UPG respondents are also likely to have BDT 21,551 worth more reared assets compared to control. The impact is similar for both treatment groups and both male- and female-headed households (Table C12).

UPG respondents own an average of BDT 533 more in poultry assets. This impact is similar for both treatment groups. The impact is negligible for female-headed households (Table C12).

UPG respondents own significantly more value in assets. This is inclusive of reared, poultry, and other assets, like boats, fishing nets, and trees. Treatment households own an average of BDT 29,103 more in total assets compared to control. The impact is similar for both treatment groups and for both male- and female-headed households (Table C12).

Table C12: UPG's Impact on Household Assets

	(1) Pooled	(2) Group 2	(3) Group 3	(4) Female Head	(5) Male Head
Land bought (decimal))	0.344***	0.369**	0.320***	0.175*	0.378***
	(4.48)	(2.79)	(3.71)	(1.83)	(4.35)
Land bought value (BDT)	5501.4***	4091.2*	6779.3***	4583.4	5691.0***
	(3.79)	(1.96)	(3.57)	(1.42)	(3.53)
Cow/Goat value (BDT)	21551.5***	22452.0***	20776.6***	19754.0***	21942.1***
	(12.42)	(11.11)	(9.86)	(8.23)	(11.43)
chicken/duck value (BDT)	533.5***	550.9***	519.5***	382.6	562.1***
	(7.02)	(5.81)	(5.55)	(1.68)	(7.30)
Total asset value (BDT)	27759.5***	28580.7***	27098.8***	24308.6***	28498.0***
	(13.14)	(12.25)	(9.80)	(7.55)	(11.81)
Observations			3358		

t-statistics in parentheses

*** p<0.01; ** p<0.05; * p<0.10.

C1.5. Impact on Consumption

C1.5.1. Business Expenditures

Since the UPG programme includes enterprise development training, UPG is expected to increase business expenditures. Expenditures will be estimated by summing out-of-pocket expenses on all business activities that anyone in the household did in the past year.

UPG households spend, on average BDT 18,827 more on business activities than control households (Table C13). These differences are concentrated among agricultural activities (distinguished from day labour in that the household owns the field) and rearing livestock. The treatment effect is slightly greater for Group 3 households, which spend much more on business activities in general. UPG households also spend much more on their private employment activities (BDT 8,980).

Table C13: Treatment Effects on Business Expenditures

	(1) Pooled	(2) Group 2	(3) Group 3	(4) Female Head	(5) Male Head
All	18826.7***	16881.8***	20790.6***	26159.7	17362.5***
	(4.43)	(3.71)	(3.52)	(1.55)	(5.12)
Agriculture (own field)	2585.7***	2178.8***	3013.1***	1253.4**	2866.2***
	(5.15)	(4.66)	(4.00)	(2.37)	(4.89)
Agricultural day labor	-44.13	-44.87	-44.70	68.09	-64.91
	(-0.64)	(-0.38)	(-0.53)	(0.94)	(-0.85)
Non-agricultural day labor	8.360	-610.4**	569.1	-364.0	85.08
	(0.03)	(-2.32)	(1.18)	(-0.70)	(0.30)
Rearing	6640.9***	6484.7***	6815.8***	4362.1***	7113.4***
	(8.94)	(8.43)	(7.68)	(3.80)	(8.36)
Housework	217.1**	189.4*	240.5*	264.7	206.3*
	(2.06)	(1.70)	(1.87)	(0.91)	(1.75)
Private employment	8980.6**	8610.5**	9416.9	20492.4	6645.4**
	(2.24)	(2.11)	(1.64)	(1.22)	(2.37)
Observations			3358		

t-statistics in parentheses
*** p<0.01; ** p<0.05; * p<0.10.

C1.5.2. Health Expenditures

Illness and injury can occur due to poor nutrition or stress. While the improvement in economic conditions delivered by UPG may decrease these risk factors, UPG has only had a small impact on the *occurrence* of health-related crises. The time elapsed since the programme is likely not long enough to override the impact of genetics and accumulated health-related decisions. However, it is more likely that UPG provides economic insurance against the financial impact of health crises by preventing the loss of assets or income brought about by the illness or death of a household member.

In fact, health crises occurred in a slightly higher proportion of treatment households, though the overall prevalence is less than 20% (Table C14). Treatment households also experienced a higher average number of health crises. These differences are likely random; there is not enough evidence to suggest that this is due to anything systematically different about treatment households (Table C16). The most likely type of health crisis for both treatment and control households is an illness or injury to a non-income-earning member (Table C15).

UPG is also not associated with any difference in impacts resulting from health crises. There is no significant difference in the proportion of households that lost an asset, lost income, or were forced to increase spending as a result of the injury, illness, or death of a household member (Table C16). This may be explained by COVID-19's impact on many VSSC activities during the course of the 2019 cohort. During the height of the pandemic, VSSCs were not able to offer their usual referrals to health clinics and support regarding severe health crises.

When health crises force households to spend money, most spend less than BDT 10,000 (Figure C3).

Table C14: Health Crises, by Treatment

	(1) Control	(2) Treatment
Any serious illness, injury, or death	0.178	0.195
Number of health crises	0.319	0.343
Observations	3358	

Table C15: Health Crises Types, by Treatment

	(1) Control	(2) Treatment
Illness/injury, income-earning	0.393	0.402
Illness/injury, non-income-earning	0.557	0.530
Death, income-earning	0.037	0.037
Death, non-income-earning	0.067	0.098
Observations	626	

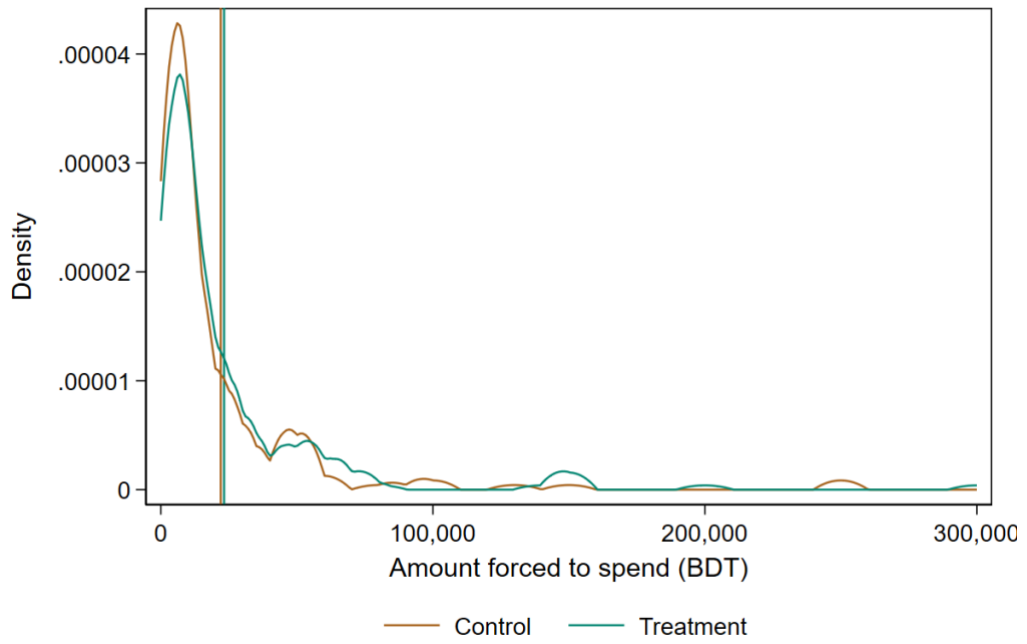
Table C16: Treatment Effects on Health Crises

	(1) Pooled	(2) Group 2	(3) Group 3	(4) Female Head	(5) Male Head
Lost asset	0.00772	0.0100	0.00553	0.00574	0.00818
	(1.45)	(1.25)	(0.89)	(0.68)	(1.39)
Lost income	0.00618	-0.00876	0.0194	-0.0224	0.0120
	(0.54)	(-0.47)	(1.63)	(-0.76)	(0.99)
Forced to increase spending	0.00265	0.00142	0.00371	-0.0338	0.0101
	(0.24)	(0.07)	(0.30)	(-1.28)	(0.80)
Total lost income	126.6	-203.8	427.7	-445.7	250.4
	(0.31)	(-0.33)	(0.74)	(-1.21)	(0.51)
Total forced to spend	178.1	380.5	-0.347	184.2	185.0
	(0.39)	(0.52)	(-0.00)	(0.33)	(0.35)
Observations			3358		

t-statistics in parentheses

*** p<0.01; ** p<0.05; * p<0.10.

Figure C3: Amount Forced to Spend Due to Health Crisis, by Treatment (BDT)



WASH Access

BRAC has a dedicated programme focused on access to water, sanitation, and hygiene (WASH), which goes to show the importance of hygienic latrines to BRAC. The UPG programme also has hygienic latrines as one of the graduation criteria. The objective is to ensure that the households use hygienic latrines that they either own or share with other households. In this section, this has been looked into.

Based on latrine usage data in our survey, more UPG households use their latrines, and fewer use *Kacha* latrines and Pacca latrines (not water sealed), as can be seen from Table C17. The usage of hygienic latrines, which is the Pacca Latrine (water sealed), is also significantly higher for both the treatment groups. These findings suggest improved sanitation hygiene in treatment households.

Table C17: UPG's Impact on WASH

	(1) Pooled	(2) Group 2	(3) Group 3	(4) Female Head	(5) Male Head
HH uses shared latrine	-0.0844***	-0.0937***	-0.0762***	-0.0754	-0.0863***
	(-4.64)	(-3.92)	(-3.57)	(-1.67)	(-4.21)
HH uses owned latrine	0.0860***	0.0908***	0.0820***	0.0600	0.0914***
	(4.83)	(3.87)	(4.08)	(1.54)	(4.60)
Open field defecation	-0.0164**	-0.0236**	-0.0101**	-0.0188**	-0.0159**
	(-2.50)	(-2.22)	(-2.43)	(-2.33)	(-2.21)
Pacca Latrine Water Sealed	0.187***	0.199***	0.177***	0.135**	0.198***
	(7.96)	(6.36)	(7.10)	(2.84)	(7.96)
Pacca Latrine Not Water Sealed	-0.0751**	-0.104**	-0.0499**	-0.0608	-0.0779**
	(-3.21)	(-3.07)	(-2.09)	(-1.11)	(-3.30)
Kacha Latrine	-0.0946***	-0.0669**	-0.120***	-0.0595	-0.102***
	(-4.96)	(-2.77)	(-4.86)	(-1.63)	(-4.98)
Observations			3358		

All variables are binary
t-statistics in parentheses
*** p<0.01; ** p<0.05; * p<0.10.

C1.6. Food Security

With the increase in income, a significant increase in food security among UPG respondents is expected. In Group 2, UPG respondents are 3.93% more likely to have at least two meals per day. However, this impact is insignificant for Group 3 respondents. Female-headed UPG households are significantly more likely to have two meals per day (8%), but this impact is insignificant for male-headed households (Table C18).

Respondents were asked about their perception of the current food security status of their household. UPG households from both treatment groups are more confident (3.8%) about their food security status. This impact is more prominent in female-headed households (Table C18).

Kartik and Choitro months are considered the dry season in Bangladesh. During these months, food scarcity is especially severe in poor households. UPG respondents are more likely (7.17%) to be food secure in the dry season compared to their control counterparts. This impact is more prominent in female-headed households (Table C18).

Compared to control households, UPG households are significantly more (8.84%) likely to report that they had enough food to eat in the last month. This impact is similar for both groups. Interestingly, female-headed UPG households are significantly less likely to have enough food in the last one month than male-headed households.

UPG respondents are significantly less likely to have eaten nothing but rice in the last one month. Group 2 UPG households are 8% less likely to eat nothing but rice. This impact is larger among Group 3 respondents (13.7%). The UPG programme has a significant impact in this measure for both male- and female-headed households, but it is larger for male-headed households (Table C18).

Table C18: UPG's Impact on Food Security

	(1) Pooled	(2) Group 2	(3) Group 3	(4) Female Head	(5) Male Head
Two meal per day (%)	0.0267*	0.0393**	0.0161	0.0803**	0.0161
	(1.81)	(2.14)	(0.90)	(2.63)	(1.08)
Currently food secured (%)	0.0377**	0.0420**	0.0344**	0.0818**	0.0291**
	(3.36)	(2.37)	(3.28)	(2.89)	(2.54)
Food secured in dry season (%)	0.0717***	0.0766**	0.0675**	0.0971**	0.0666**
	(3.94)	(3.42)	(2.75)	(2.33)	(3.33)
Had enough food in last month (%)	0.0784***	0.0888***	0.0693**	0.0389	0.0865***
	(4.56)	(4.25)	(3.17)	(0.89)	(4.53)
Ate nothing but rice (%)	-0.109***	-0.0792**	-0.137***	-0.0651*	-0.118***
	(-5.53)	(-3.34)	(-5.47)	(-1.81)	(-5.70)
Observations			3358		

t-statistics in parentheses
*** p<0.01; ** p<0.05; * p<0.10.

C1.7. Women's Empowerment

Empowerment of women is one of the primary pillars of the UPG programme. Based on the discussion of financial outcomes above, this has been successful in the economic sense. As shown in earlier sections, UPG increased women's employment and income, the likelihood of having any kind of savings, and the tendency to invest in high-value assets such as land and real estate.

However, when it comes to their ability to influence important household decisions, no major transformation in women's ability to influence important household decisions has been observed.

However, there is some positive impact in elements where women's domain of control is more immediate.

Given our interventions were directed at enterprise development, asset management, and savings, and only two years have elapsed since baseline, this outcome is not altogether unexpected.

The respondents were given several scenarios, such as buying land, borrowing, and children's education, and asked whether they think they can influence the outcome. If they can, they are considered to be empowered in the household decision-making process.

C1.7.1. Household decision

Women's empowerment in the household decision-making process was expected to be more pronounced within the treatment Group but, as can be seen in Table C19, the treatment effect was not significant for most of these household decision-making scenarios. However, what stands out here is the fact that respondents needing permission to start any new business activity significantly decreased in male-headed households. This is a very important finding because it highlights the potential of economic empowerment in giving women the agency to make economic household decisions themselves and direct the male-female dynamic within the household towards a more women-friendly environment.

Respondents' ability to influence their sons to start any new business activity fell across all groups but it particularly, and significantly, fell for Group 2 households.

Table C19: Treatment Effects on the Ability to Influence Household Decisions

	(1) Pooled	(2) Group 2	(3) Group 3	(4) Female Head	(5) Male Head
Buy land	0.00270	0.00223	0.00310	0.00122	0.00257
	(0.20)	(0.16)	(0.15)	(0.05)	(0.17)
Repair Home	-0.0105	-0.0140	-0.00780	-0.0121	-0.0105
	(-0.95)	(-1.02)	(-0.47)	(-0.49)	(-0.80)
Loan Source	0.00140	-0.00680	0.00820	0.0118	-0.000595
	(0.11)	(-0.44)	(0.46)	(0.44)	(-0.04)
Need permission to start new activity	-0.0193	-0.00872	-0.0274*	0.0633	-0.0323**
	(-1.47)	(-0.40)	(-1.90)	(1.49)	(-2.62)
Influence husband to start new acitivity	-0.0159	-0.0212	-0.0130	0.0192	-0.0170
	(-1.12)	(-0.97)	(-0.71)	(0.31)	(-1.19)
Influence son to start new acitivity	-0.0197	-0.0397**	-0.00327	-0.0288	-0.0182
	(-1.46)	(-2.36)	(-0.16)	(-1.08)	(-1.21)
Influence daughter to start new acitivity	-0.00287	-0.0112	0.00392	-0.0113	-0.00136
	(-0.17)	(-0.53)	(0.21)	(-0.35)	(-0.08)
Son's education	0.0205	0.00674	0.0320*	0.00102	0.0249
	(1.34)	(0.29)	(1.74)	(0.03)	(1.65)
Daughter's education	-0.00451	-0.0121	0.00138	-0.0667*	0.00396
	(-0.28)	(-0.61)	(0.08)	(-1.70)	(0.23)
Spending on children's clothes	0.0113	0.0112	0.0112	0.103	0.00828
	(0.51)	(0.42)	(0.43)	(1.45)	(0.36)
Observations			3263		

t-statistics in parentheses

*** p<0.01; ** p<0.05; * p<0.10.

C1.7.2. Purchasing decisions of the household

This is a new addition to the first follow-up survey and, as a result, there is no baseline data to analyze. The intention was to see whether respondents in treatment households fared any better than the control households regarding their ability to purchase everyday items such as clothes, vegetables, and fruits, and personal supplies such as sanitary napkins and medication. Respondents were considered to be empowered in terms of everyday purchasing decisions when they said they could purchase items both for themselves and other household members.

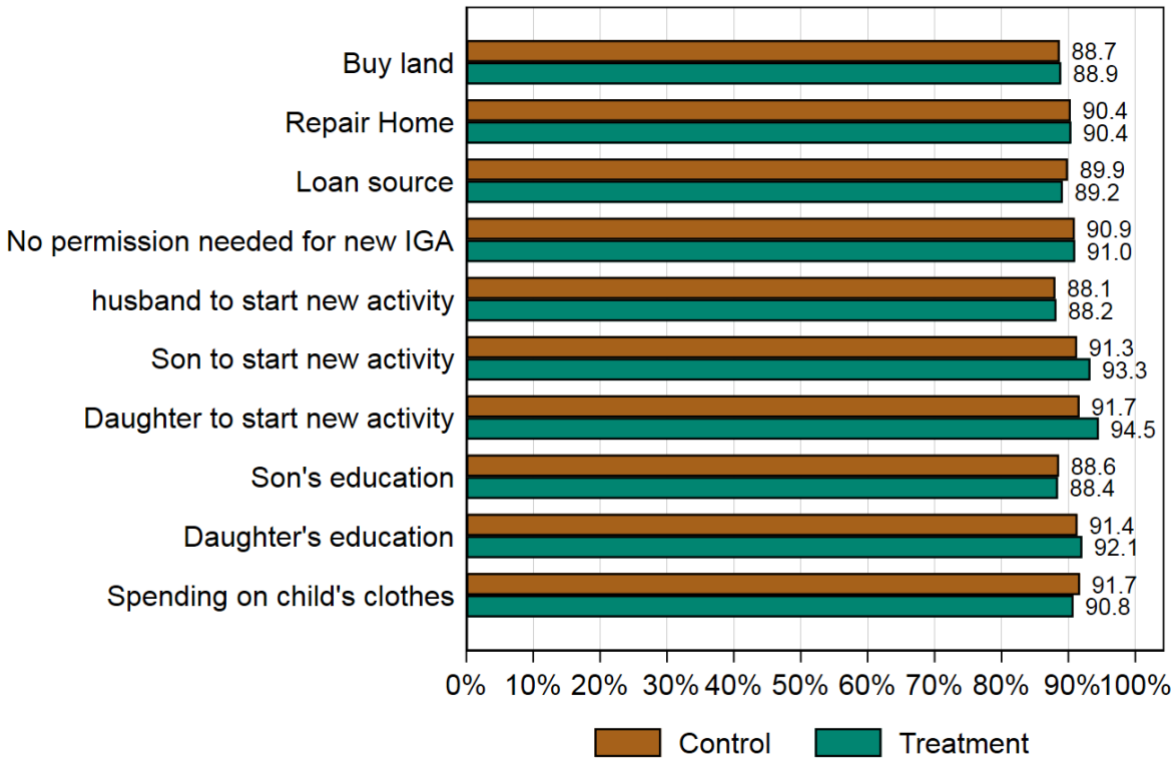
Table C20: Purchasing Decisions, by Treatment

	(1) Control 1	(2) Treatment 2
Clothes	0.433	0.472
Vegetables and fruits	0.558	0.610
Personal supplies	0.572	0.630
Medication	0.537	0.600
Observations	3358	

Table C20 above shows that treatment households performed consistently better than control households across all items. Respondents had the least liberty when it comes to purchasing clothes, which is expected since clothes are not exactly essential goods compared to the rest of the items they were asked about. The finding is also in line with the UPG programme's positive impact on aspects where women's domain of control is more immediate within households.

Appendix D: Household decision making

Figure D1: Respondents' Influence in Household Decision-Making at baseline (%)


Buy land
88.7
88.9
Repair Home
90.4
90.4
Loan source
89.9
89.2
No permission needed for new IGA
90.9
91.0
husband to start new activity
88.1
88.2
Son to start new activity
91.3
93.3
Daughter to start new activity
91.7
94.5
Son's education
88.6
88.4
Daughter's education
91.4
92.1
Spending on child's clothes
91.7
90.8
0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%
Control
Treatment

Appendix E: Labour Outcome

Labour Outcome Disaggregated by the Coastal Area

Figure E1: Respondents' Employment Status, by Coastal Area

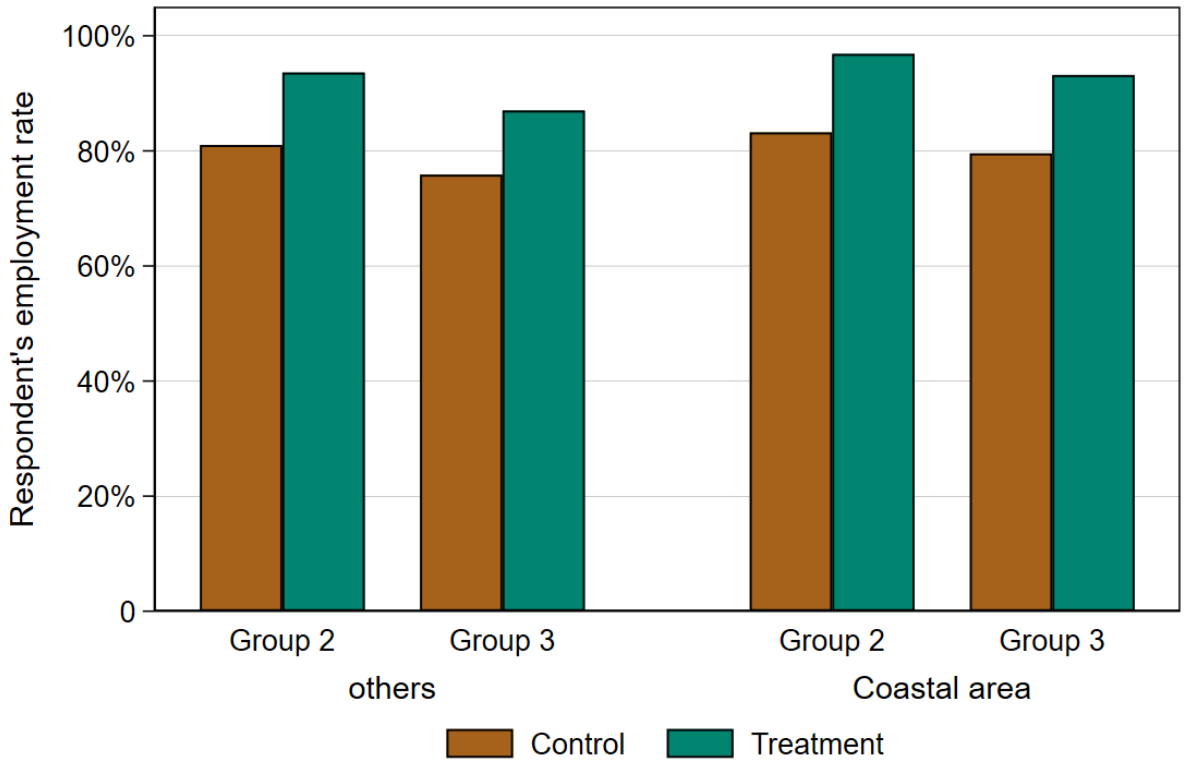


Figure E2: Respondents' Yearly Income (BDT), by Coastal Area

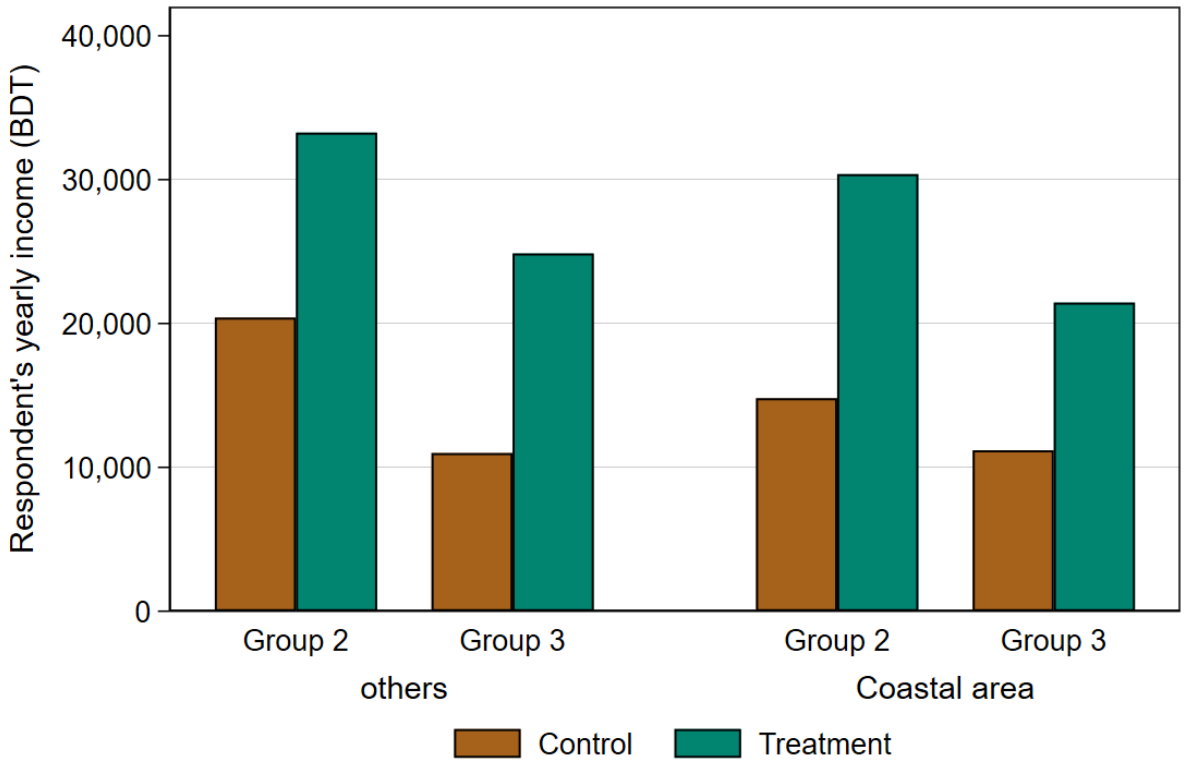


Figure E3: Respondents' Self-Employment Status, by Coastal Area

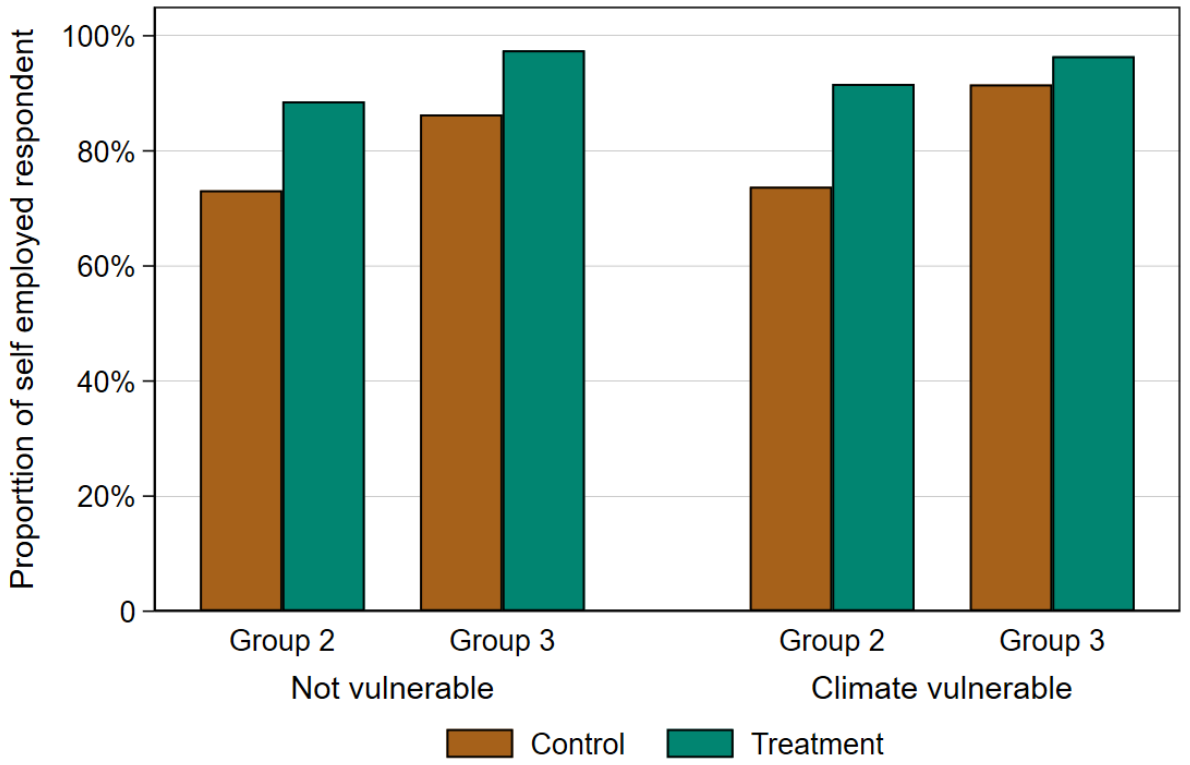
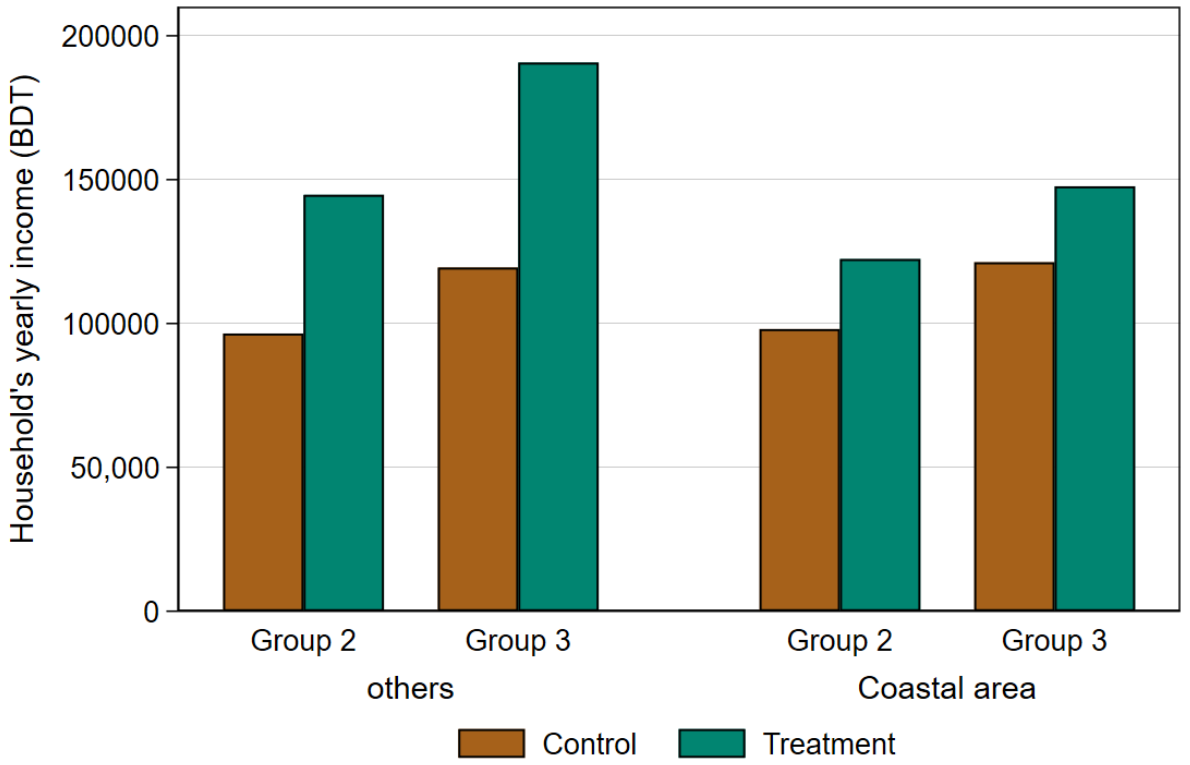


Figure E4: Respondents' Household Income (BDT), by Coastal Area



Labour Outcome Disaggregated by Climate Vulnerability

Figure E5: Respondents' Employment Status, by Climate Vulnerable Area

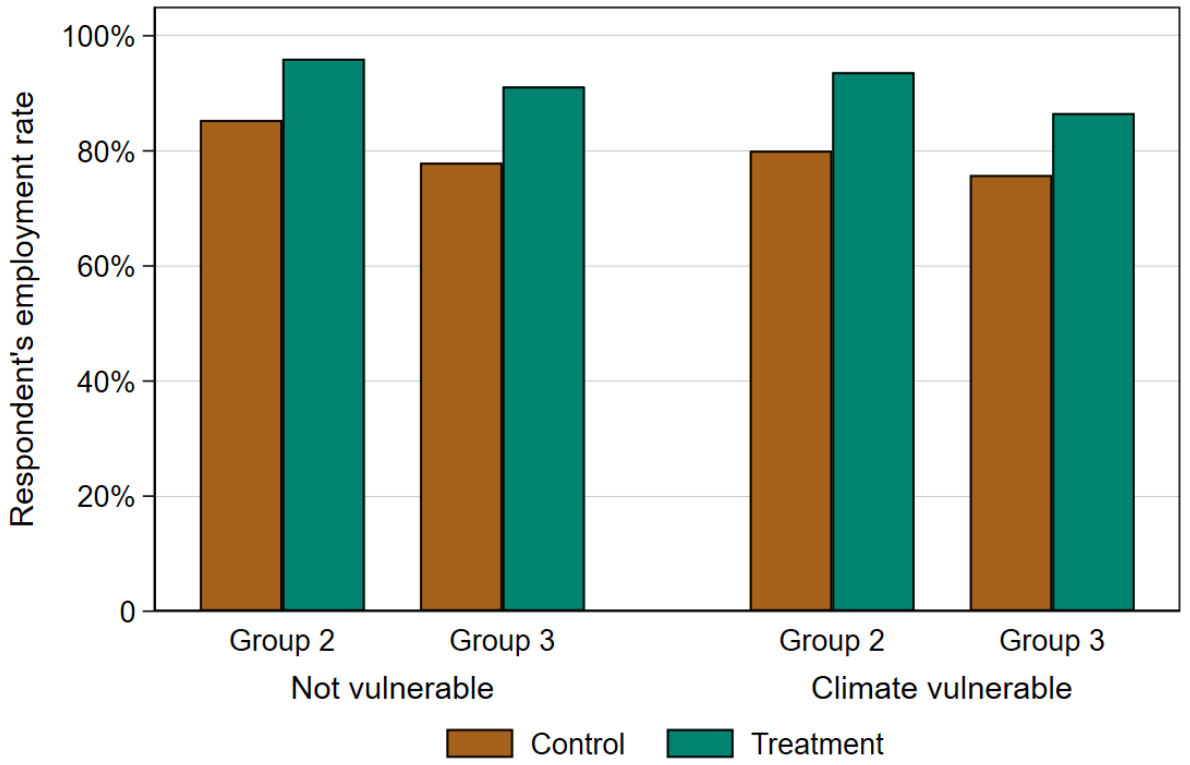


Figure E6: Respondents' Yearly Income (BDT), by Climate Vulnerable Area

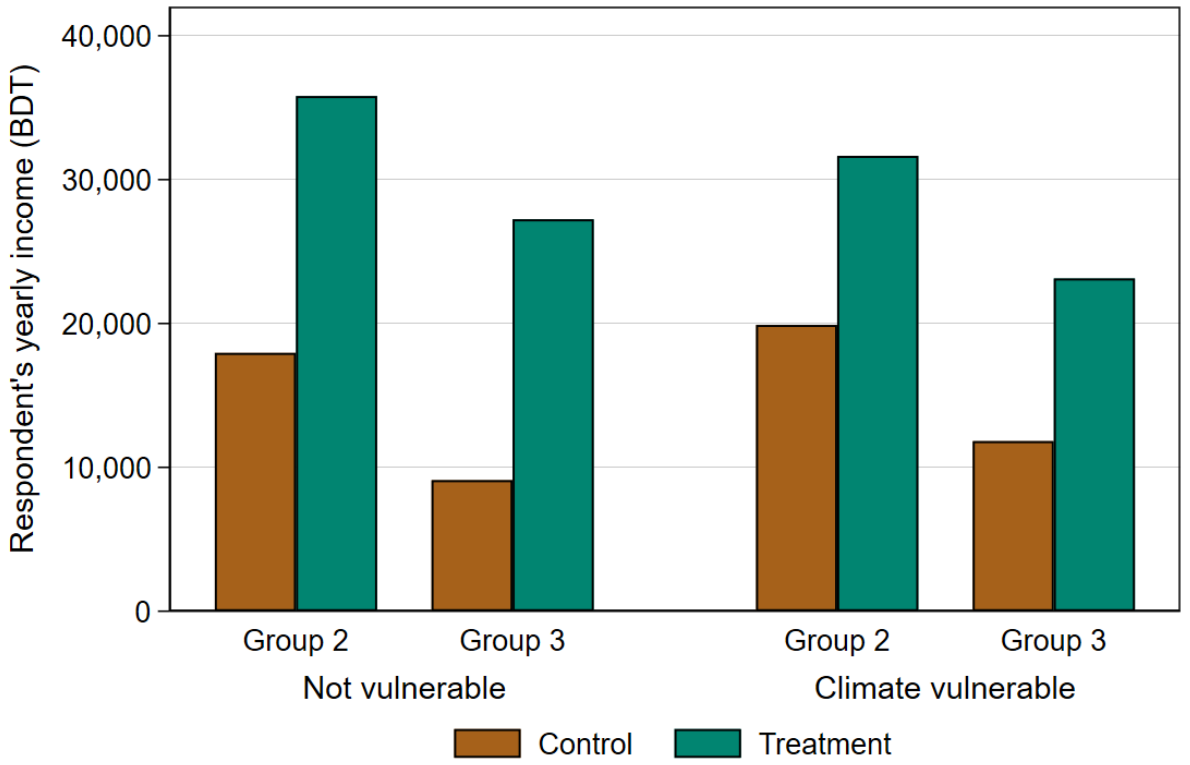


Figure E7: Respondents' Self-Employment Rate, by Climate Vulnerable Area

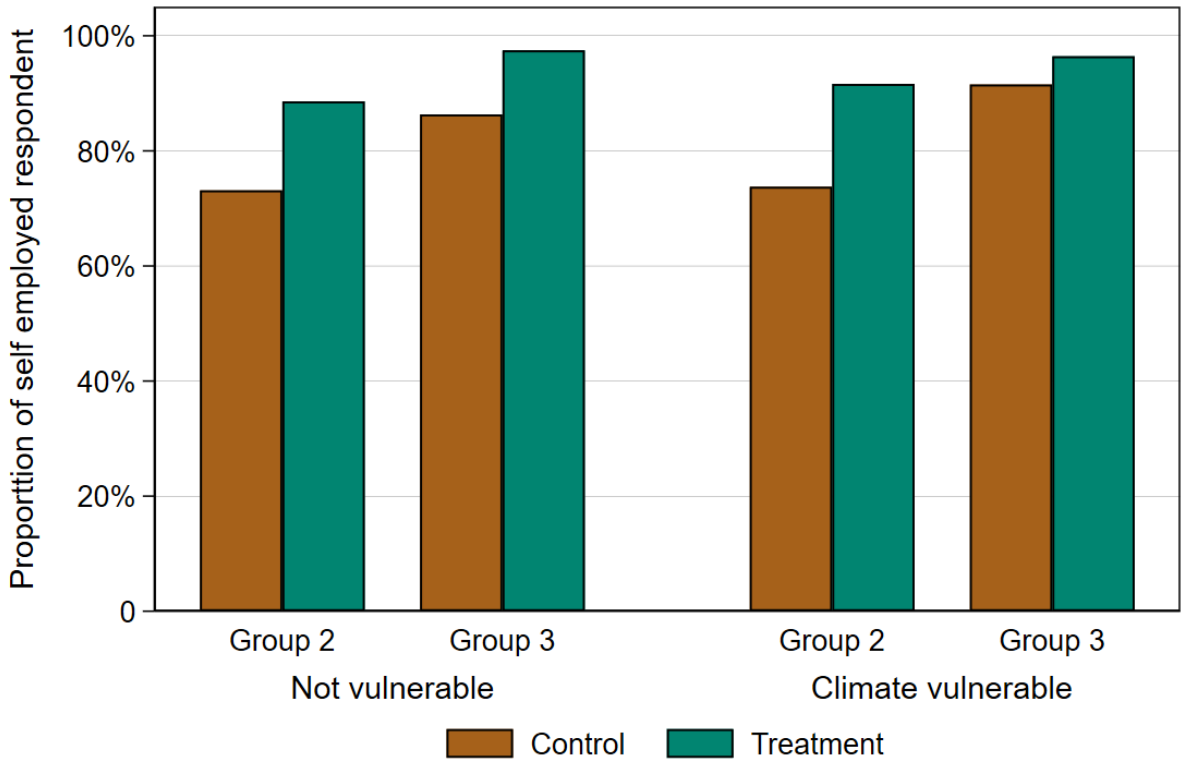
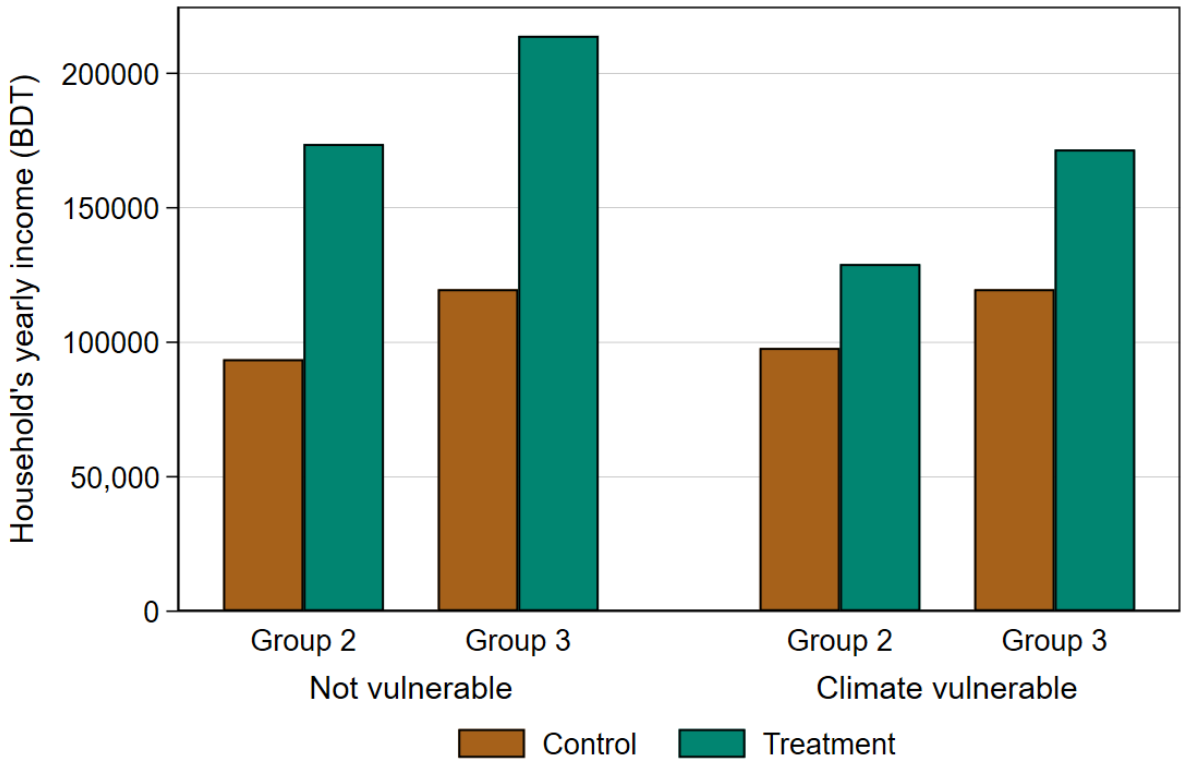


Figure E8: Households' Yearly Income (BDT), by Climate Vulnerable Area



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