

# Pathways out of Poverty

FINDINGS FROM A QUASI-EXPERIMENTAL  
EVALUATION OF TRICKLE UP'S GRADUATION  
PROGRAM IN INDIA

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The “Pathways out of Poverty for India’s Ultra Poor” project and this evaluation of its impact were funded by the Ford Foundation, and have been catalytic for shifting Trickle Up’s (TU) thinking on livelihood development from the household level to the national level. As a result of this support, we and our partner organizations have arrived at a transformational moment. Four years ago, we were planning for incremental increases in the number of participants with whom we could integrate into our programs to increase financial and social capital. Now, we are planning for partnerships with government agencies that will enable us to reach 140,000 households over the next five years. Throughout the course of this grant, TU and partners have formed a network of community-based NGOs in some of the poorest districts of Jharkhand and West Bengal. We have deepened our last-mile expertise and become leaders in the design and implementation of programs that economically and socially empower extremely poor and vulnerable groups. These achievements have gained attention from India’s poverty alleviation and social protection programs, in particular the National Rural Livelihood Mission’s state branches in Jharkhand and Odisha. Partnerships with these government entities will enable us to dramatically scale our programs, and to influence the design of very large social protection programs to be more inclusive of people living in extreme poverty.

We approach these new partnerships with the knowledge that the results of TU projects reinforce existing data on the positive impact of the Graduation Approach. We are very happy to present data from a quasi-experimental evaluation with participants and a comparison group in West Bengal, as well as data from participants in Jharkhand. These outcomes suggest important and significant increases in economic and social empowerment for our participants. The support of the Ford Foundation has been invaluable in achieving these outcomes, and we wish to express our deep and sincere gratitude. Special thanks to Ford Program Officer, Ajit Kantikar, who provided us with the encouragement and vision to initiate this project.

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## Executive Summary

Trickle Up was founded in 1979 and works in India, Central America and West Africa to support the most vulnerable populations to create a sustainable pathway out of extreme poverty through livelihood development programming rooted in the Graduation Approach. Trickle Up also provides technical assistance to other organizations to integrate the Graduation Approach into their programs and policies, often to reach a poorer population.

With support from the Ford Foundation, Trickle Up worked in collaboration with partner agencies Jamgoria Sevabrata in West Bengal and Network for Enterprise Enhancement and Development Support in Jharkhand to conduct a Graduation project with 900 women and their families between the years 2012 and 2015. The “Pathways out of Poverty for India’s Ultra Poor” project sought to enable women participants and their households to develop the skills, resources and connections to grow and sustain livelihoods that move and keep them out of extreme poverty. The project consisted of a carefully sequenced combination of consumption support, financial services for saving and credit, livelihood planning and training, seed capital transfer, and regular coaching and monitoring, and monthly visits by health workers.

This report presents findings from a quasi-experimental evaluation that aimed to estimate the impact and outcomes of our Trickle Up’s Graduation program. While a variety of evaluation sources have been used, our emphasis is on the differences we found between participants in West Bengal and a comparison group in the same communities. We use evidence from project participants in Jharkhand to further explore changes; however, the evaluation does not include data on a comparison group in Jharkhand. We utilized difference-in-difference to assess changes in outcomes between the participant and comparison groups over the three-year project, and drew on monitoring data and a qualitative assessment. Our analysis suggests that participants were able to achieve a wide range of outcomes that are indicative of being on a sustainable pathway out of poverty. Furthermore, despite considerable intra-community spillover effects and contextual factors that may have led to increases in the comparison groups’ wellbeing, in most areas, the gains made by participants in West Bengal were significantly greater than those of a comparison group.

- Participant households diversified their livelihood activities by an average of 1.5 extra distinct occupations; an estimated average increase of 0.8 occupations can be attributed to the program. Participants also reduced reliance on daily wage labor from 66% at baseline to 3%; an estimated decrease of 35 percentage points can be attributed to the program.
- Participant households increased their total annual income by an average of Rs. 29,000 (\$527), an estimated Rs. 11,300 (\$205) of which can be attributed to the program.
- Participant households increased the total average value of household, land, and livestock assets by Rs. 34,000 (\$618), an estimated Rs. 14,000 (\$254) of which can be attributed to the program.
- Participant households significantly reduced migration by any family member, from 90% of households at baseline to 22%. An estimated decrease of 55 percentage points can be attributed to the program.
- The number of participant households with savings increased significantly, from 10% at baseline to 99%. An estimated increase of 45 percentage points can be attributed to the program. We are unable to estimate the project’s impact on savings quantities.
- Participant households significantly reduced their reliance on moneylenders for loans, from 20% of households at baseline to nearly zero. An estimated decrease of 24 percentage points can be attributed to the program.
- Participant households significantly reduced the frequency of food insecurity, from 45% at baseline to 1%. An estimated decrease of 22 percentage points can be attributed to the program. We also found a considerable reduction in the reported number of months of food scarcity; however, this change was not significantly different between the two groups.
- Participants significantly increased their involvement in household decision-making. An estimated increase of .24 points (out of 1) on an “empowerment” index can be attributed to the program.
- Participants significantly increased their engagement in collective action, up from 1% at baseline to 92%. An estimated increase of 49 percentage points can be attributed to the program. No significant increase was found in Panchayat participation (India’s lowest level of government).

- Participant households significantly reduced their reliance on informal rural health practitioners as a primary point of treatment, from 10% at baseline to 4%, and shifted in favor of using formal health services. The comparison group increased use of rural practitioners, resulting in an estimated decrease of 16 percentage points that can be attributed to the program.

These findings are largely consistent with the positive results from a series of randomized control trials on six Graduation pilots presented by Banerjee et al.<sup>1</sup>

This project was instrumental in helping Trickle Up to launch partnerships with the Jharkhand and Odisha state branches of the Indian government's National Rural Livelihood Mission. The integration of Graduation into large scale social assistance and poverty alleviation programs is critical in order to have a significant impact on extreme poverty, and with this new phase comes further questions and challenges. As we prepare for these scale opportunities, Trickle Up has identified a number of key lessons from our evaluation and experiences to date that will inform our government partnerships and influence our research agenda. These include:

- Promoting strategic linkages to government programs during the livelihood planning process.
- Capitalize on the role of self-help groups as a foundation for development.
- Strengthen the enabling environment for the poorest through broader community engagement.
- Enhance the cost-effectiveness and scalability of the program.

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<sup>1</sup> A multifaceted program causes lasting progress for the very poor: Evidence from six countries  
Abhijit Banerjee, Esther Duflo, Nathanael Goldberg, Dean Karlan, Robert Osei, William Parienté, Jeremy Shapiro, Bram Thuysbaert, and Christopher Udry, *Science* 15 May 2015: 348 (6236), 1260799 [DOI:10.1126/science.1260799]

## Acronyms

CGAP	Consultative Group to Assist the Poor
FGD	Focus group discussion
JS	Jamgoria Sevabrata
MGNREGA	Mahatma Gandhi National Rural Employment Guarantee Act
NEEDS	Network for Enterprise Enhancement and Development Support
NGO	Non-government organization
PAT	Poverty assessment tool
RCT	Randomized controlled trial
SHG	Self-help group
TU	Trickle Up

## Organizational Background

**Trickle Up (TU)** was founded in 1979 to bring livelihood opportunities to people living in extreme poverty and has since reached a million people worldwide. TU's founders were inspired by the belief that investing in individuals at the grassroots level is the most effective way to overcome extreme poverty and exclusion, and developed a simple model of livelihood development based on seed funding and basic business training, later enhanced to include savings groups. In 2007, TU participated in the CGAP-Ford Foundation Graduation project by implementing one of the first Graduation pilot projects in India. This experience enabled TU to deepen its poverty targeting to more deliberately reach and meet the needs of people living in "ultrapoverty," those who are among the poorest of the extreme poor, and resulting in a more holistic program design.

TU has since become a global expert in the Graduation Approach, an economic development methodology proven to successfully provide a pathway out of extreme poverty for the most vulnerable. TU has also deepened its focus on marginalized populations, developing significant expertise to empower those that live in extreme poverty and face multiple levels of exclusion due to gender, ethnicity, religion and disability. TU has helped write hundreds of thousands of success stories, and in the past three years has helped empower over 25,000 households in Central America, Africa and India. TU also provides technical assistance to other organizations, including the United Nations High Commissioner for Refugees, to integrate the Graduation Approach into their programs and policies.

**The Network for Enterprise Enhancement and Development Support (NEEDS)** is a community-based NGO that has been working in Jharkhand, India since 1998. NEEDS works in food security and sustainable livelihood promotion with people living in poverty, particularly in tribal communities. They also work towards the holistic wellbeing of the community through reproductive health and child protection projects. As a result of their partnership with TU, the inclusion of extremely poor and vulnerable populations has become a primary focus, particularly in NEEDS' livelihoods work.

**Jamgoria Sevabrata (JS)** is a rural development organization that was established in India in 1986. Since its founding, JS has promoted sustainable livelihood development for poor and marginalized communities, including Scheduled Castes, Scheduled Tribes and Other Backward Castes, through land and water management support, credit linkages with banks, and the promotion of income generating activities. JS has partnered with TU since 1999.

## Introduction

More than one fifth of the world's population lives in extreme poverty, surviving on less than US \$1.90<sup>2</sup> a day. There is growing international consensus that this number can and must be reduced to zero by 2030.<sup>3</sup> This is substantiated by the UN General Assembly's adoption of the Sustainable Development Goals, which call for the collaborative efforts of all sectors, private and public alike, to achieve this goal. There is also widespread acknowledgement that many individuals, households and communities have largely been excluded from the benefits of economic growth and development programs. These excluded segments are disproportionately the poorest, and their circumstances make them challenging to serve. They often live in geographically isolated areas with substandard or no infrastructure and weak markets, and are characterized by insecure livelihoods and few productive assets. Building sustainable livelihood options for these "last mile" families – those most difficult to reach and at greatest risk of being left behind – is a critical component in the effort to eradicate extreme poverty.

In response to the need to reach and serve households living in extreme poverty, the international development organization, BRAC, developed a holistic and promising approach in Bangladesh. The "Targeting the Ultra-Poor" program consisted of a carefully sequenced combination of activities, each designed to address specific constraints facing households living in extreme poverty: consumption support, financial services<sup>4</sup>, planning and livelihood support, asset transfer, and regular coaching and monitoring. This approach later became known as the Graduation Approach, because it was designed to provide a pathway for the most vulnerable households to 'graduate' out of extreme poverty.

In 2007, the Ford Foundation and Consultative Group to Assist the Poor (CGAP) led efforts to pilot the BRAC approach in contexts beyond Bangladesh; Trickle Up (TU) led one of these pilots in India. Six of the 10 Graduation pilots involved randomized control trials (RCTs). In June 2015, the findings from these RCTs were published in *Science*<sup>5</sup> and provide compelling evidence that this approach could help extremely poor households make significant improvements in a range of economic and social indicators<sup>6</sup> that demonstrated movement out of extreme poverty. The findings also indicated that these changes were sustained one year after the program ended.

Bolstered by early learning from the TU pilot, the Ford Foundation supported TU and partners in 2012 to conduct a three-year Graduation project with 900 of some of the poorest households in the Indian states of West Bengal and Jharkhand. While the RCTs of other Graduation pilots were still underway, TU was eager to deepen its evidence base for Graduation and contribute to the ongoing discussion on how best to serve the most vulnerable in India (as well as in West Africa and Latin America, where we also work). We constructed a small comparison group in West Bengal, and tracked their outcomes over three years to allow us to estimate our causal impact more thoroughly than we could from observational data alone.

We have situated the findings from our evaluation within those of the RCT results of the Graduation pilots, where possible, and have found a high degree of consistency in most types of changes experienced by participants<sup>7</sup>: they have made significant improvements in income, assets, financial inclusion, food security, and personal and social empowerment. In addition they have also been successfully integrated into self-help groups, which can form enduring support networks. TU's experiences supporting the poorest of the poor through an approach that is rooted in a strong evidence base has led to partnerships with two state governments in India to integrate the Graduation Approach into their large scale poverty alleviation programs. As we undertake these scale opportunities, we will continue to draw on lessons learned from other

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<sup>2</sup> At purchasing power parity

<sup>3</sup> World Bank, "The World Bank Annual Report 2013" (Washington, D.C., 2013).

<sup>4</sup> Including savings and training to increase financial literacy. In some cases it involves access to credit at a later stage.

<sup>5</sup> A multifaceted program causes lasting progress for the very poor: Evidence from six countries

Abhijit Banerjee, Esther Duflo, Nathanael Goldberg, Dean Karlan, Robert Osei, William Parienté, Jeremy Shapiro, Bram Thuysbaert, and Christopher Udry, *Science* 15 May 2015: 348 (6236), 1260799 [DOI:10.1126/science.1260799]

<sup>6</sup> Economic: food security, income, consumption, savings, assets. Social: political involvement, mental health.

<sup>7</sup> Understanding the significant variations in results and contexts between the pilots themselves.

livelihood practitioners and will share our own learnings in an effort to contribute to the growing evidence base on Graduation. To that end, in this report we present the findings from our Graduation program in West Bengal and Jharkhand, and presents areas for further investigation.

## Project Background

With support from the Ford Foundation, TU worked in collaboration with partner agencies Jamgoria Sevabrata (JS) and Network for Enterprise Enhancement and Development Support (NEEDS) to implement a Graduation project with 900 women and their families between the years 2012-2015. The average project cost per participant was Rs. 18,600 (\$338), 75% of which goes directly to the participant in the form of a grant and consumption support. The remaining 25% covers our implementing partners' administrative and personnel expenses (i.e. staff, travel, training, office supplies, etc.).

Table 1. *Pathways Out of Poverty Project Overview*

<b>Partner Agency</b>	JS	NEEDS
<b>Location</b>	Purulia, West Bengal	Pakur, Jharkhand
<b>Number of Participants</b>	600 women	300 women

The “Pathways out of Poverty for India’s Ultra Poor” project was designed to address the various vulnerabilities of extreme poverty, from food insecurity and income instability to social isolation and lack of access to services. Our goal was to enable women participants and their households to develop the skills, resources and connections to grow and sustain livelihoods that move and keep them out of extreme poverty. TU’s “Definitions of Success” encompass the changes we seek to catalyze.

### Definitions of Success

1. Participants are less vulnerable to shocks and trends<sup>8</sup>, and more resilient to the hungry season;
2. Their livelihood activities are dignified, diversified, productive and sustainable;
3. They have a fair and effective means to save and access credit;
4. They have improved access to available basic social services;
5. They and their families enjoy a better quality of life, including improved food security;
6. They have made significant progress toward economic and social empowerment.

### Project Activities

Rooted in the Graduation Approach, the project was a carefully sequenced intervention designed to address the various vulnerabilities of extreme poverty.

**Poverty targeting & participant selection:** TU utilized Indian government records to identify the poorest districts and villages for project inclusion. Within those villages, we employed a participatory wealth ranking (PWR) exercise that engaged community members to identify the poorest households in their community, as defined by local standards. Program participants are drawn from the poorest two categories, following verification of poverty level using a simple household-level verification tool – a custom built poverty assessment tool (PAT), which provided a score based on a number of criteria. This selection process ensured that the intended beneficiaries participated in the project, and also served to ensure community buy-in.

**Self-help group formation:** TU promoted participant savings, access to credit and financial literacy education through Self Help Groups (SHGs). SHGs are community savings and lending groups, consisting of 15-20 women project participants. They meet weekly to pool savings contributions and distribute small loans. SHGs also enable women to access formal

<sup>8</sup> Such as unexpected death of livestock, family illness, or impacts of climate change that could place families at risk for forced migration or liquidation of productive assets.

credit for livelihood expansion by establishing relationships with banks. SHG formation and training happened almost simultaneously with participant selection, and enabled women to build social capital. It also served as a platform for linking women to existing social services.

**Consumption support:** TU provided consumption allowance for two months<sup>9</sup> in the first lean period of the project (September-October to protect against the liquidation of productive assets and reduce the need to migrate. We also provided a pregnancy allowance to expecting mothers during the first year of the project.

**Grant transfer:** After project staff and participants jointly analyzed local markets and household resources to identify sustainable, profitable livelihoods activities (such as livestock, agriculture, or small vending), TU provided seed funding of Rs. 11,280 (\$205)<sup>10</sup> to jumpstart these activities.

**Skills training:** TU and partners provided participants training in the areas related to their selected livelihood activities, SHG governance, and personal finance. Participants were also trained on health and social issues, and were provided information on relevant government schemes and programs that would contribute to the sustainability of their livelihood activities.

**Regular coaching:** TU and partners provided participants one-on-one coaching (also called “handholding sessions”) to reinforce project trainings, assist participants in continuous livelihood planning and adjustment, and to assist participants in overcoming specific barriers they faced in their homes or communities. During these visits, coaches collected participant financial data, monitored livelihood activities, and reviewed and revised livelihood plans, as necessary, to ensure success. They also assisted with and built participant capacity to access appropriate government services. The frequency of household visits varied from weekly to twice per month, with greater coaching intensity during the first year of the project. Coaching also occurred at the group level through SHG meetings. Lower-performing SHGs and participants received additional visits.

**Health promotion:** Monthly visits by health workers to provide preventative health information and encouragement to access public health services.

Please see Appendix A for a timeline of project activities.

## Evaluation Methodology

The purpose of the evaluation was to explore the outcomes and estimated impact of TU’s graduation program in two sites in India. This report draws on a variety of data sources, including quasi-experimental data to assess outcomes for participants in West Bengal relative to a comparison group in the same communities, and pre-post participant outcomes in Jharkhand. We also draw on program monitoring data, focus group discussions (FGDs) conducted in West Bengal and Jharkhand, and in some cases, a previous mixed-method internal evaluation in West Bengal when it helped to explain program dynamics that we believe can be generalizable across cohorts. In all cases, our analysis of results has been informed by consultations with local partners and participants themselves.

### *Comparison Group*

The comparison group was selected (in West Bengal only) from within the same communities as participants themselves by drawing on data from the participant selection process. The selection process commences with a facilitated PWR

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<sup>9</sup> This is a shorter period of consumption support than most Graduation pilots employed, as it was reduced after a needs assessment following our pilot program.

<sup>10</sup> Throughout the report, we used the average exchange rate between the Rupee and US Dollar between the years 2012 and 2015 – Rs. 55: USD 1

exercise where community members categorize all households into five different wealth categories. Program participants are drawn from the poorest two categories, following verification of poverty level using a simple household-level verification tool – a custom built poverty assessment tool (PAT) which provided a score based on a number of criteria.<sup>11</sup> The comparison group was selected from those who fell into the two poorest categories, but were disqualified from program participation according to the PAT assessment.<sup>12</sup> The majority of exclusions were due to households having assets worth more than Rs. 6000 (\$109) or owning more than one acre of land. Some households with higher PAT scores were also deemed ineligible due to demographic factors, such as not having a woman between the ages of 18-45 to be the primary point of contact.

The number of potential comparison group members differed widely between villages, from zero to 39. This was predominantly a function of the size of the village, but these figures were not always proportionate to the number of participants selected and so the sampling process attempted to weigh the selection of comparison group members accordingly.

### *Evaluation Design*

The ideal method of determining project impact is to compare project participants to a control group after randomly assigning some households to receive the project, and others to not receive the project. This was the approach taken in the six pilots included in the Banerjee et al. article, mentioned above. Although this particular project was unable to utilize randomized program assignment, the method of selection of the comparison group allows for compelling causal inference with few assumptions. Whenever potential project participants are ranked in some way, and that rank is used to determine eligibility for the project, a discontinuity is created at whatever level of the rank is used as a cutoff. In this case, households with PAT scores below 5 were not eligible for the project. The logic of regression discontinuity is that potential participants just above and just below the cutoff are very similar in most respects. If this assumption holds, then a comparison of these two groups at the end of the program should give an estimate of the causal effect of the program. For this project, there is another consideration, which is that the logic of extreme poverty implies that poorer households are going to do worse than less poor households over time, and even if their plight improves, on average it will improve less than less poor households. Thus we can credibly assume that most of the outcomes we are interested in will naturally tend to improve more for households in the comparison group, who are slightly less poor than the project participants. We can exploit this fact by using a difference-in-difference design to compare changes in outcomes over time for the project participants and the comparison group. Combining these two methods, we arrive at a powerful design which allows for convincing causal inference even without a randomized control group.

### *Selection of Evaluation Sample*

The sample of households used in this evaluation was selected to ensure that the households in the project and comparison groups were as similar as possible, while retaining a sufficient sample size to perform statistical analysis with a reasonable level of power. After weighing these considerations, the sample was defined as follows. The comparison group consisted of all sampled comparison households with a PAT score of 3 or above, and who met the formal requirements of project participation: the primary potential project participant within the household was 45 years old or younger and did not have a disability. Moreover, only households with both baseline and endline data were included in the analysis. This led to a total of 89 comparison households being selected, or 52% of the total number interviewed. Note that some households in the comparison group (total of 25) had a PAT of 5 or above. These were households who were deemed ineligible for the project during the verification process for other reasons determined by the field staff. The

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<sup>11</sup> PAT scores were constructed by summing scores on the following categories: female-headed household (2), household has <6,000 Rs. of productive assets (1), household owns <1 acre of land (1), ratio of income-earning to non-income-earning household members is less than 1:2 (1), type of housing (1-2 room kaccha house) (1), household member has a disability or chronic illness (2), at least one household member migrated for work in the past year (2). A higher score indicates a deeper level of poverty, and the highest possible score was 10.

<sup>12</sup> Specifically, households with a PAT score below 5 were excluded.

sample of project households was chosen in a similar way: only those closest to the PAT cutoff (PAT of 5 or 6), and who met the same formal requirements for project participation. Note that some project participants did not meet the formal eligibility requirements (usually older than 45) but were selected to participate in the project anyway. To ensure comparability, these households were excluded. This left a total of 505 project participants, or 84% of the total number.

### *Analysis*

In addition to descriptive analysis of many variables for all three groups, a formal statistical analysis was conducted on a subset of variables for the West Bengal Project and Comparison Groups. Specifically, two-sided t-tests for equality of means were conducted between the baseline-endline changes for the project and comparison groups. Significance levels were adjusted for the simultaneous testing of multiple hypotheses, as detailed in Appendix C. When a result is noted as statistically significant, it means that the project participants increased (or decreased) more than the comparison group, between the two survey waves. Because the adjustment for multiple comparisons entails a tradeoff in statistical power as more variables are analyzed, only the most important outcomes were selected for statistical testing (total of 17 variables). When a variable is mentioned in the text that is not included in the table in Appendix B, it should be assumed that statistical significance was not tested.

### *Profile of Project and Comparison Groups*

This section provides a descriptive profile of the project and comparison groups in West Bengal, and the project group in Jharkhand. Only households that were selected for the evaluation are included in this section, and to increase comparability, the Jharkhand project group was restricted in the same way as the West Bengal group, described above. Note that in some cases these figures refer to a specific individual in the household, who for project households was the main project participant, and for comparison households was the potential main participant (had the household been selected). We see in Table 2 that the WB comparison group was on average 35 years old, which was three years older on average than the WB project group, and five years older than the JH project group. We also see that everyone in all three groups is illiterate, with the exception of a single individual in Jharkhand. Almost as uniform is marital status, with 96% of comparison and 97% of project participants being married in West Bengal, and a slightly lower number of 91% in Jharkhand. Despite this, and their lower age, JH project participants had the largest number of children, almost one more on average than the WB comparison households. The overall family sizes between the three groups were not appreciably different.

*Table 2. Demographic Profile of Project Participant and Comparison Households*

	<b>WB Comparison</b>	<b>WB Project</b>	<b>JH Project</b>
<b>Age</b>	35.1	32.3	29.7
<b>Illiterate</b>	100%	100%	100%
<b>Married</b>	96%	97%	91%
<b>Family Size</b>	4.2	4.6	4.5
<b>Number of Children</b>	1.4	1.9	2.3

### *Data Sources*

Quantitative surveys: Quantitative household-level surveys were administered before and after program participation with participants and the comparison group members to capture data on livelihood development, household and productive assets, savings and credit, empowerment, political participation and health. Income surveys were collected only with participants in West Bengal and the comparison group.

Qualitative evaluation: TU conducted a qualitative evaluation after the program ended in September of 2015. This included FGDs with participants from two SHGs in Jharkhand (villages of Kukurdoba and Surajbera), four SHGs in West Bengal (Brajarajpur, Petidiri, Buribandh and Borodanga), and FGDs with members of the comparison group in two villages in West Bengal (Brajarajpur and Kultard). The selection of SHGs was based on stratified sampling, to include both moderately well performing and underperforming SHGs, in order to understand both the reasons for and barriers to success.

In addition to FGDs, TU conducted individual interviews with 1-2 participants from each surveyed SHG. Interviewers visited participants' homes and sites of their livelihood activities (e.g. small shops, fields, etc.) in order to verify and deepen understanding of the participants' experiences. They also sought the perspective of spouses and other members of the participants' households during the home visits. The FGDs and interviews were designed to be participatory and promote participants' own identification of the changes and challenges they had experienced during the prior three years, specifically regarding their livelihoods and social empowerment, the reasons for those changes, the significance of those changes to them and their households, and to situate any changes within the broader community context.

Monitoring data: TU and its partners regularly collect household-level monitoring data, which includes savings and credit details, livelihood performance (including income) and diversification, migration trends, and health practices. At the SHG level, monitoring data include attendance rates, collective actions and savings-to-credit ratios. These data were used to triangulate endline survey data, and in limited cases, to add additional information about performance or replace missing evaluation data.

Previous evaluations: TU has conducted numerous internal evaluations of our programs in West Bengal, Jharkhand, and Odisha, involving both qualitative and quantitative data, plus two prior external qualitative evaluations of TU's pilot Graduation program in West Bengal. We have integrated some findings and learnings from these previous evaluations where we believe they contribute to the analysis, particularly drawing from a qualitative evaluation of a previous cohort of participants in the same region of West Bengal as discussed here.

Validation and interpretation process: Most data presented in this report were discussed with local implementing partners during an analysis workshop in August of 2015. This workshop included both program coordinators and field staff, whose close knowledge of the context and participants' lives was crucial for both validating the results and interpreting their meaning.

Please see Appendix A for the data collection timeline.

### *Limitations*

Comparison group selection process: As discussed in the 'Evaluation design' section, having a non-random selection of the comparison group is not optimal. However, having detailed knowledge of the selection criteria, along with the knowledge that trends in most variables should be better for the comparison group (because they deal with less extreme poverty), allows us to be very confident in believing the assumptions underlying the difference-in-difference model. Thus credible causal inference is possible despite the non-randomized selection.

Within-community comparison: A potentially more significant limitation relates to the selection of a comparison group within the same villages as participants. While a within-village comparison has the advantage of ensuring similarity of context, it also complicates the assessment of attribution given the risk of spillover effects. In fact, the similarity of the participant and comparison groups means that they inhabit similar social circles within which spillover effects would be expected. For this reason, a particular emphasis was placed on assessing spillover effects in consultation with community members during the qualitative assessment, periodic monitoring by TU, and data analysis involving partner staff – which revealed considerable impact on the broader community. This has meant that our analysis against a within-village comparison group has not enabled us to assess the attribution of our program with as much precision as hoped, given we cannot put exact figures to the interplay of context and spillover. However, this limitation has also had a silver lining given

that understanding spillover effects is itself of value and we believe our mixed methods approach has enabled us to conclude enough – about both impact and spillover effects – to be worth sharing.

Representativeness of the program: The West Bengal program was not fully representative of TU’s programs. An enhanced ‘gender justice’ component using participatory video was introduced in the third year of the project in Purulia – see the “Empowerment” section. This component has been evaluated separately and we believe that it has increased collective action for participants beyond the norm, and has also engaged other community members in such actions more than the norm (therefore potentially balancing out the measured impact).

Timing of data collection: It was not possible to collect baseline and endline data at the same time of year. Please see Appendix A for specific dates. This has had the biggest impact on savings and food security data, which we have discussed in the finding section below, including implications it may have on the project’s estimated impact.

Contextual changes: Some changes in context have also impacted results, including new government programs following changes in political leadership in West Bengal. The reason for having a comparison group is to take into account such contextual changes when estimating impact, and for the most part, we believe that this served its purpose – see the discussion of Panchayat participation. However, this is also where not having a randomized control group does reveal its limitations, as experience suggests that even slightly better off households are better able to benefit from some community-level investments – see the discussion of agricultural activities.

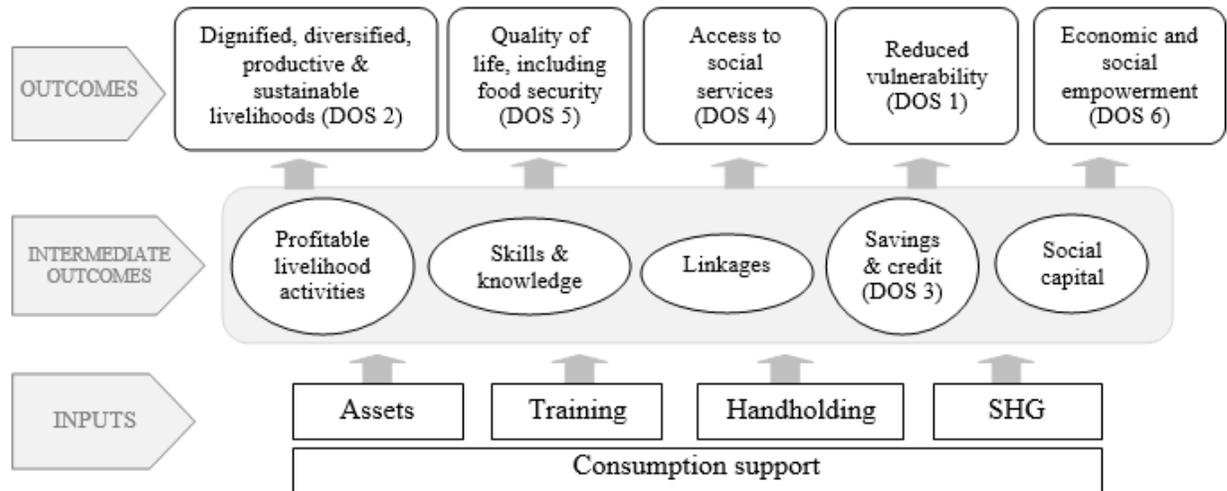
Data quality: The data cleaning process revealed some concerns with data quality, most likely due to enumerator error. The variables of greatest concern were excluded from the analysis (including, for example, health immunization records, days of food stock, etc.). However, we are aware that some of the indicators included are inherently difficult to measure, such as income (and subsequently primary participant occupations) and our data collection process was not immune to these challenges. We also experienced problems with assessing linkages to government programs due to an error in the survey instrument itself (specifically, an outdated list of questions was used in error at endline, which is incompatible with the baseline survey). In addition, endline savings data was missing for participants in West Bengal. We were able to draw on SHG monitoring data collected during the same period, however, it presented limitations in compatibility with data from the comparison group. These issues and their implications are discussed below.

## Program Findings

TU’s Graduation program is grounded in the theory that providing women living in extreme poverty with support to meet their immediate needs, along with simultaneous investment in longer-term human capital and assets, will enable them and their families to develop sustainable livelihoods and progress on a pathway out of extreme poverty. TU has integrated this theory of change into its internal Definitions of Success, as outlined in the figure below.

In this section, we present our evaluation findings across six key areas – livelihood and economic development, financial inclusion, food security, social empowerment, access to social services. The primary goal is to present the estimated impact of the project and to situate these findings within those of the Graduation pilot RCTs presented by Banerjee et al. However, it was equally important to us to explore how and why these key outcomes contributed (or did not) to TU’s Definitions of Success, as we seek to identify lessons learned for our future projects and partnerships.

Figure 1. Theory of Change



## Livelihood & Economic Development

In rural India, those living in extreme poverty often lack sufficient productive assets to meet their household needs without relying on some form of daily wage labor, typically agricultural labor. These labor opportunities are sporadic and are often only available during key periods in crop cycles, making them an inconsistent and unreliable form of income. During the annual lean season (or “hungry” season, typically September-October and April-May) local opportunities for wage labor generally dry up, and without alternate coping mechanisms, individuals, and sometimes entire families, are forced to migrate for prolonged periods of time to avail labor opportunities elsewhere. While in some cases migration can represent an opportunity, most extremely poor households are compelled to engage in “distress” migration simply to meet survival needs through these annual lean seasons. Exploitation through low wages, undignified and hazardous living and working conditions, risks of sexual exploitation, and regular and long absences from school for children are among the problems associated with distress migration.

In alignment with our second Definition of Success – livelihood activities are dignified, diversified, productive and sustainable – the project aimed to enable participants to:

- Diversify into new self-managed livelihood activities (agriculture, livestock and small vending enterprises)
- Reduce reliance on casual wage labor
- Increase overall income and productivity (for both cash income and subsistence)
- Increase household and productive assets
- Reduce distress migration

These objectives go hand in hand, as seasonal migration inhibits the development of more stable livelihood strategies that require year-round attention, and viable livelihood alternatives are required to prevent migration.

As discussed below, these objectives were met for the large majority of participants, with increases in agricultural production driving changes across these variables. In most cases, results were significantly different relative to the comparison group: participants successfully diversified their livelihood activities, reduced reliance on wage labor, and reduced household migration, while increasing their income and assets. However, significant spillover effects were also apparent, which, despite being positive from a program perspective, do hinder estimations of impact.

## Livelihood Diversification

Investment in agriculture, livestock and vending meant on average each participant household in West Bengal had 1.5 extra distinct occupations at the end of the program (from 2.2 to 3.7). In contrast, the comparison group increased by 0.7 occupations. This difference between the two groups was highly statistically significant, and suggests that the program was responsible for an average increase of 0.8 extra occupations. With a diversified livelihood base, households reduce vulnerability associated with disease (of livestock and crops), climate and weather (droughts and floods), markets and other external shocks and trends. Ninety-five percent of all participants in West Bengal and Jharkhand engaged in two or more livelihood activities at endline. Qualitative data also suggest that participants reduced their reliance on very low yield and undesirable activities such as work in brick kilns (also see section on migration below). Some participants stated that they continue to engage in more ‘traditional’ work such as making ropes or leaf plates during the lean season, but that they avoid stone crushing<sup>13</sup> due to health hazards.

Participants in West Bengal also reduced their reliance on daily wage labor significantly more than the comparison group. Such labor comprised the reported primary occupation for 66% of participants at baseline and fell to 3% by the end of the program, for a total decrease of 63 percentage points. This trend was also found with the participants in Jharkhand. The comparison group in West Bengal also experienced a substantial shift away from daily wage labor as the primary occupation, with a reduction by 28 percentage points; however, this still suggests an estimated project impact of 35 percentage points. As discussed below, it appears that a reduction in migratory wage labor (as opposed to local) is responsible for most of this drop for both project participants and comparison households. A large spillover effect appears to have occurred along with some contextual changes that have contributed to agricultural production. These factors are discussed below.

Figure 2.  
Number of Income Sources

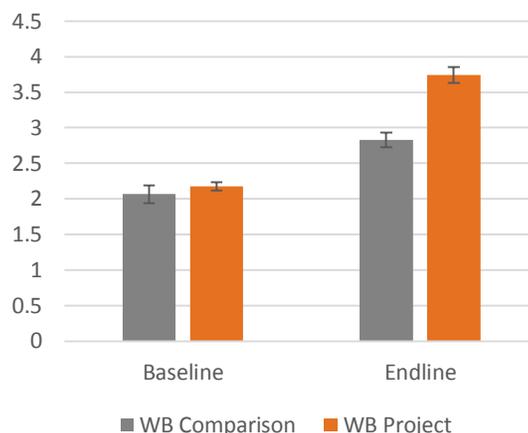
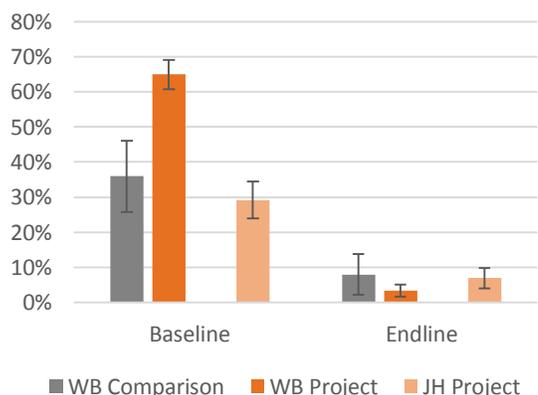


Figure 3. Percentage of Women Reporting Wage Labor as Their Primary Occupation



When taking into account primary, secondary and tertiary occupations (as the self-reported relative contribution of each type of activity, which we acknowledge to be subjective in nature), nearly all participants in West Bengal did continue to rely on wage labor as a source of income. Staff had anticipated that some engagement in wage labor would continue to be important to most households. In fact, TU’s programs are based on the hypothesis that some wage labor can be effectively combined with the establishment and growth of self-managed income-generating activities. Although participants are encouraged to plan a combination of short and long cycle activities in order to reduce reliance on wage labor early on, quick earning opportunities are not always available for all households. In such circumstances, income from wage labor can be important deemed important during the first lean season before new activities yield sufficient income.

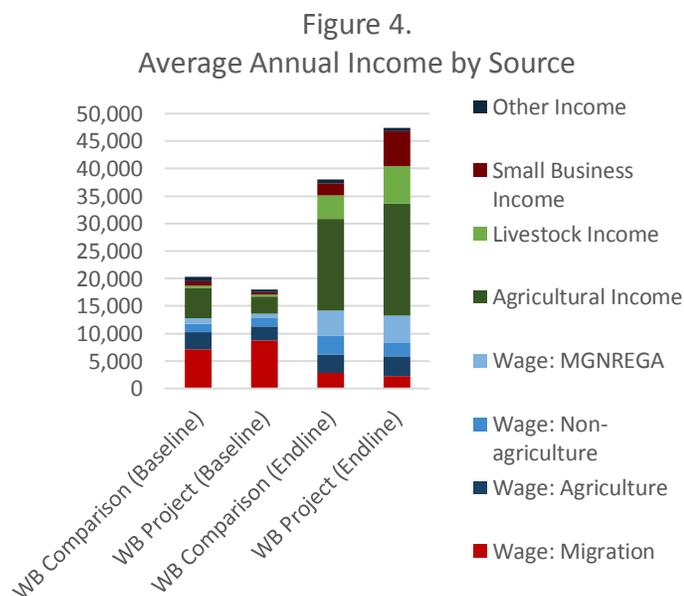
<sup>13</sup> A common practice is to crush stone into small pieces to sell to vendors in the construction sector. Six to eight hours of stone crushing brings in Rs. 60-70 (\$1). Because participants do not have access to protective glasses, they run the risk of damaging their eyes from shards of flying stone.

Of course, not all livelihood activities were immediately successful. For example, a number of participants in both states lost goats during the first year due to improper shelters and delayed vaccinations. As vaccinations were not consistently available from private stores in certain communities, TU and partners actively sought out support from the government's veterinary department in the second and third year of the project. In another example, new field agents did not provide accurate training on how to build a proper seedbed, which resulted in low-quality saplings for some households. TU staff addressed these training issues and ensured the affected participants received follow-up support.

The data presented by Banerjee et al. on livelihoods are not highly comparable to the data on livelihood diversification and wage labor collected for this evaluation. Specifically, the Banerjee et al. research captures data on how many hours in the prior week were spent on different activities. They found that overall, the amount of time spent working increased, and in particular time spent working on livestock and agricultural activities increased. On the other hand, there was no detectable effect on time spent working on a small business, and a negative but non-significant effect on time spent on wage labor. These are broadly in line with the findings here.

## Income

Participant households in West Bengal started with a slightly lower annual income, yet by the end of the project, their income was nearly 25% higher than the comparison group. This difference is highly statistically significant. Specifically, participants increased their total household annual income by approximately Rs. 29,000 (\$527). This compares to an increase of Rs. 17,700 (\$322) for the comparison group, suggesting that Rs. 11,300 (\$205) of increased income for participants can be attributed to the program. The increase in income is primarily due to agricultural, small business, and livestock income, which were the types of activities promoted by the project. Overall wage income did not change substantially for either project or comparison households; however the constitution of this income did change for both groups, including a reduction in wage labor income from migration and an increase in Mahatma Gandhi Rural Employment Guarantee Scheme income (MGNREGA - 100 days guaranteed job) – both of which are explicit goals of the project.



Because income is notoriously difficult to measure and our data collection process was not immune to these challenges, income data were triangulated against other data sources to ensure that the increases presented here closely reflect trends across a variety of related indicators.

Consultation with members of the comparison group affirmed the quantitative findings: from their perspective, the women selected to be participants in the program were much poorer than them at the time of selection, but have clearly surpassed them in terms of their income, entrepreneurial attitude, and overall standard of living. They also claimed to have been influenced by the participants in adopting improved agricultural practices and livestock rearing, a dynamic which was independently noted by staff. This is believed to account for the majority of the significant improvement in the comparison group's own income, as discussed below.

These findings are in accord with the results presented by Banerjee et al. In those studies, the overall largest (standardized) effect across all sites was on an index of income and revenues. However, in those studies, the biggest effect was on livestock income, followed by small business and agricultural income, while here agricultural income was most effected. Banerjee et al. did not examine wage income earned from migration.

## Agriculture Income

Although we found an increase in the number of participants who engaged in livestock and animal husbandry and small vending, the most notable increase in income and shift in primary occupation for program participants was related to cultivation and farming. Qualitative assessment suggest that both the quantity and quality of agriculture production increased, with a larger diversity of crops planted across various seasons, and higher productivity as a result of improved inputs (irrigation, fertilizers, improved seeds) and improved agricultural practices, most notably System for Rice Intensification (SRI). These changes were a result of both training (all households were trained in SRI and improved agricultural practices) and increased access to resources for investment. Approximately 350 participants invested portions of their seed capital or borrowed from SHGs to invest in pumps to irrigate their crops.

While this change was anticipated for project participants, who increased their agricultural income from Rs. 3,100 (\$56) to Rs. 20,000 (\$364), the increase for the comparison group was not anticipated. Qualitative data suggest a large array of spillover effects may help to explain this increase. In some cases, participants rented out their irrigation pumps to others in the village; in another example, a participant started a seed bank that was initially aimed at providing seeds for others in her SHG, but was then opened to anyone in the community, resulting in increased quality of produce. However, the largest spillover effect appears to be transfer of knowledge and “setting an example” for community members. In particular, early in the first year of the project, participants were supported to grow tomatoes on fallow land during the rainy season. While this can be a risky enterprise, it is also very profitable if done correctly. The participants had considerable success with their crops, which attracted traders to their villagers to buy in bulk. Seeing the success of participants, other community members also began growing tomatoes on previously uncultivated land. This contributed to both their increased income and identification of cultivation as a primary activity.

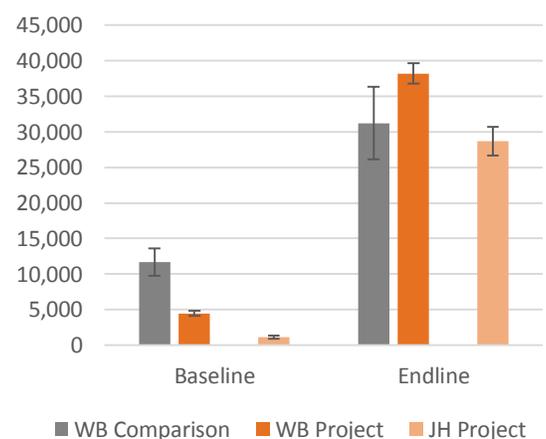
Contextual factors also appear to have had an impact on agricultural income. A new government took office in West Bengal during the program period and introduced a new scheme named Jal Dhara and Jal Varo (Catch Water and Hold Water) to increase irrigation coverage, especially in water resource poor areas such as Purulia. Many community water tanks were renovated under this scheme, including in four villages covered by the program. These initiatives no doubt also improved the agricultural productivity of program participants too, although the very poorest generally tend to benefit less from such initiatives than other community members, given their reduced access to land and other inputs required to take advantage of irrigation.

## Assets

The total average value in household, land, and livestock assets (excluding saving) increased substantially for both participant groups. Participants in West Bengal increased their total average asset value by Rs. 34,000 (\$618) by the end of the project, compared to an increase of Rs. 20,000 (\$364) for the comparison group. The difference is statistically significant, and implies that the estimated program impact is an average increase of Rs. 14,000 (\$254) in asset value.

Participants in both groups stated the importance of investing in productive assets, such as livestock or motor irrigation pumps, or in assets that support their activities, such as bicycles to more easily reach the market. We did not see a significant difference between participants in West Bengal and the comparison group in terms of the average size of land owned. The majority of participants also discussed their increased ability to renovate their houses with new roofs or doors, which was not captured in our quantitative data.

Figure 5. Total Average Value of Assets (Rs.)



These findings align with those of Banerjee et al., who found large impacts on total assets and productive assets, and smaller but positive impacts on household assets. The total asset index was one of the variables with the highest impact in most countries in the Banerjee et al. study (India, Pakistan, Ghana, and Ethiopia).

## Migration

Participant households in West Bengal were 50% more likely to have a member who migrated at baseline than the comparison households. However, by the end of the project, migration by any family member for households in West Bengal reduced from 90% of households to 22%, for a total decrease of 68 percentage points. In contrast, migration for the comparison group households reduced by 13 percentage points. This difference is statistically significant, and suggests an estimated project impact of 55 percentage points. The dramatic reduction in migration was also seen in households in Jharkhand, who saw a reduction from 86% to 5%.

Discussions with participants confirmed that before the project, entire families were often migrating together, which often caused an interruption in their children’s education and, as many participants explained, an increase in health risks for children who were exposed to chemical fertilizers and pesticides at an early age. The reduction in migration was primarily explained by the increase in household economic stability associated with new and diverse livelihood activities. Another widely mentioned reason for reducing migration among participants is access to SHG savings and credit, which has enabled them to cope during lean seasons.

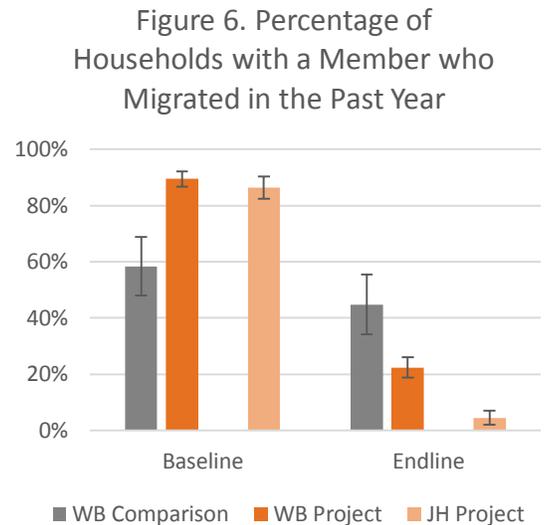
Monitoring and qualitative assessment also suggest an important shift in the *reason* for migration, with participants claiming that their migration patterns have become less “forced” to meet basic survival needs and more opportunistic, primarily motivated to purchase productive assets (e.g. livestock or seeds), to cover costs associated with marriage, or in response to increasing wage labor rates. The women expressed an increased ability to analyze the cost-benefit ratio of migration, and stated that their own activities are often more profitable than the “extra buck” earned through wage labor. When the demand of labor is exceptionally high, however, the women stated that they still occasionally encourage their husbands to migrate for a short period, but that their families now have greater negotiating power for higher wages.

The comparison group also demonstrated a small decline in migration, which would be expected given the shift away from wage labor to farming. That said, through the qualitative assessment, the comparison group highlighted the rising trend in migration to urban centers to engage in unskilled labor, typically in the construction sector. They emphasized that the younger generations, in particular, seek exposure to city life, but that this shift to informal sector work in large cities, where the culture and language differs from their home communities, places them at increased risk of exploitation.

Migration was not discussed by Banerjee et al.

## Financial Inclusion

Tickle Up aims to promote access to high-quality, fair, convenient and dignified financial services for marginalized women who are traditionally excluded from formal financial institutions. On the supply side of financial inclusion, we promote access to financial services through SHG integration, which serves as a safe place to save and access credit at affordable prices, and we advocate for changes in formal banking practices and bank linkages, where appropriate. On the demand side, we take great steps to prepare participants for financial inclusion through ongoing coaching and financial education (i.e. importance of savings, protecting against unfair moneylenders, investment of credit, etc.) and, over time, we



accompany participants as they build the confidence and skills to engage with more formal financial services, including banking and insurance. In support of our first and third Definitions of Success – less vulnerable to shocks and trends, and more resilient to the hungry season; fair and effective means to save and access credit – the project aimed to increase the number of women with access to savings, as well as their quantity of savings, while also promoting a shift away from debt from moneylenders in favor of loans from their savings groups.

As discussed below, we found that participants significantly increased their access to savings, relative to the comparison group. Although participants significantly increased savings in their SHGs, we are unable to estimate the impact of the program on savings quantities, given differences in data sources between the participant and comparison groups in West Bengal. We found a surprisingly large increase in the total average savings for the comparison group, which warrants further exploration. Program participants successfully changed the sources of their debt, with a significant reduction in loans from moneylenders, relative to the comparison group.

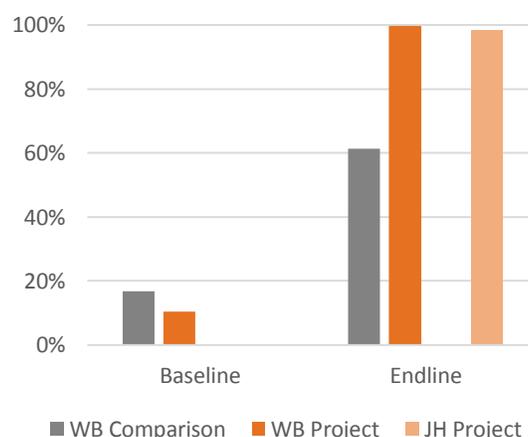
## Savings

After completing the project, 99% of participant households in both West Bengal and Jharkhand had savings (up from 10% in West Bengal and 0% in Jharkhand). This was an increase of 89 percentage points for households in West Bengal, which was significantly different from the comparison group, who saw an increase of 44 percentage points. This implies an estimated project impact of 45 percentage points. Further, 99% of participant households had at least Rs. 2000 (\$36) in savings in SHGs, which confirmed that the project was very successful at supporting participants to save, even in small quantities. Importantly, qualitative data suggest that participants are highly committed to continuing their SHG participation, stating that the SHG has become the “backbone” of their increased economic and social empowerment. Future follow-up is required to assess SHG sustainability.

We are unable to directly compare savings quantities between the two groups in West Bengal because of differences in savings data sources. Specifically, we were missing participants’ savings data from the endline evaluation survey, and instead had to rely on SHG monitoring data. Although the SHG savings data was collected during the same time period as our evaluation data, the total savings for participants in West Bengal is inherently a conservative estimate, as it only captures SHG savings, rather than total household savings located across a range of sources (e.g. formal banks, relatives, or microfinance institutions). This limited data show that participants in West Bengal significantly increased their savings in SHGs by an average of Rs. 3,570 (\$65). In contrast, the comparison group increased their total savings (in all sources) by Rs. 5,240 (\$95), which is 1,670 (\$30) more than the participants. However, if we were to draw on savings trends from prior TU projects in India, which found that participants at endline held an average of 66% of their total household savings in SHGs and 34% in other sources, we could estimate that current participants in West Bengal would have an average total savings of approximately Rs. 5900 (\$107) by the end of the project, which is very similar to the comparison group’s total of Rs. 6,100 (\$111). Further, despite only capturing SHG savings, we found that the median savings is actually higher among participants at endline, and the total endline value for the comparison group is largely driven by the top quintile.

Clearly, we do not have the data to confirm this specific gain in savings amount for participants, and even if we did, we must ask ourselves why and how the comparison group increased their total savings so dramatically. JS staff in West Bengal noted that certain comparison group members belong to SHGs that were recruited and paid by the government to provide mid-day meals for children attending school, the income from which is then distributed in member’s bank accounts. This may help to explain the increase, however it would also impact our income data, and further exploration is required to determine the size of impact. Furthermore, some increase in savings would be expected from the gains in

Figure 7. Percentage of Households with Savings



income from livelihood investment and wage labor, as discussed above; however, given the relatively larger increases in income from program participants, this also would not fully explain the substantial increase in comparison group savings.

Banerjee, et al. found one of the largest project effects was on total savings. Unfortunately, the differences in data sources make it difficult to confidently estimate the project impact on total saving amounts. Nonetheless, we do see a huge impact on financial inclusion, in that almost all participants started saving at least small quantities within their SHG.

## Credit

There was a significant reduction in the number of program participant households in West Bengal and Jharkhand with debt from a moneylender. We found a decrease from 25% of households in West Bengal at baseline to 2%, for a total reduction by 23 percentage points. In contrast, the number of comparison group households with loans from a moneylender *increased* by 1 percentage point, resulting in an estimated project impact of 24 percentage points. We found that participant households shifted away from moneylenders, who on average charge approximately 75% per annum, to lower interest loans from SHGs, with approximately 10% of households with SHG loans at baseline to 60% by the end of the project. In contrast, the composition of loans in the comparison group did not change substantially between baseline and endline, except for a reduction in loans (to zero) from SHGs or co-ops. We are unable to explain the reduction in loans from SHGs for the comparison group, given the apparent increase in SHG activity as noted above. These trends were also reported by participants in Jharkhand, who dramatically shifted away from loans from moneylenders to SHGs through the course of the project. We found a slight increase between baseline and endline in the overall percentage of participant households in West Bengal with any loans, but the change was not significant relative to the comparison group. However, of more importance is that the purposes of debt tended to shift from consumption and health care to more productive investment in livelihoods, as indicated in Table 3, which is a positive sign of economic improvement.

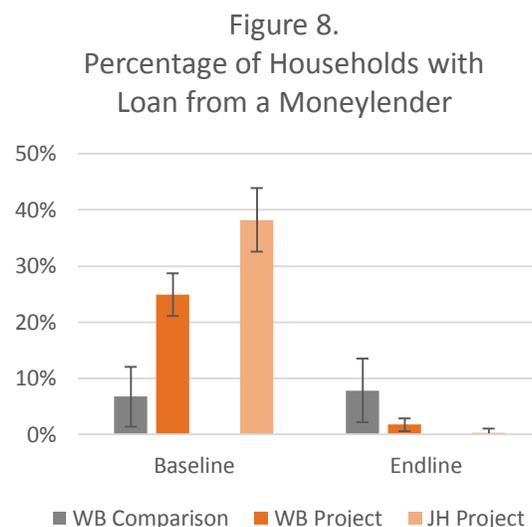


Table 3. Percentage of Households with Loans for Each Purpose

	BASELINE		ENDLINE	
	WB Comparison	WB Project	WB Comparison	WB Project
<b>Health</b>	6%	14%	3%	10%
<b>Social Function</b>	3%	11%	12%	12%
<b>Livelihood</b>	12%	19%	4%	38%
<b>Education</b>	1%	3%	0%	4%
<b>Repairs</b>	3%	7%	4%	4%
<b>Consumption</b>	1%	10%	3%	4%

Through the project, many SHGs now also link to formal banks for group credit, which they loan to members. The participants in Jharkhand stated that, although some women have individual savings accounts with formal banks, they never directly turn to the bank for an individual loan; the large amount of paperwork and repeated visits to the banks are costly and difficult compared to the ease of taking credit from their SHG. In contrast, the comparison group stated that one of their biggest impediments to livelihood development is access to credit. Although a similar percentage of comparison group households have loans, they stated that these loans are rarely used for investment in productive assets, such as agricultural inputs or livestock. Rather, they will use household assets (e.g. brass utensils or jewelry) as collateral

in order to access high-interest loans to pay for health emergencies or they turn to neighbors to borrow food items (e.g. rice or poultry) needed for a marriage.

These results generally align with the findings from Banerjee et al.; however, they found that the pilot projects increased loans from formal financial institutions, while no effect was found on the amount borrowed from informal sources. This variation can be explained by the difference in approach to financial inclusion. The Graduation pilots were largely implemented by micro-finance institutions and promoted linkages to their formal financial services, whereas TU promotes SHGs (considered to be informal) as a primary entry point for financial inclusion and means by which participants eventually link to formal institutions.

## Food Security

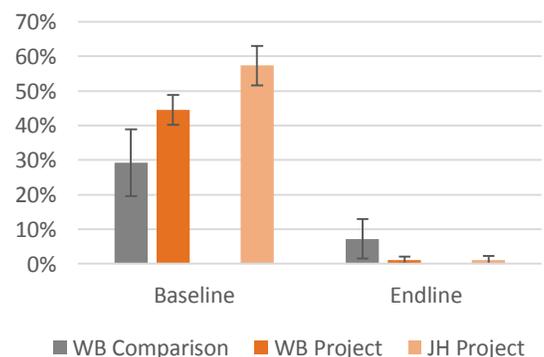
Hunger and food insecurity tend to characterize populations living in extreme poverty. Hunger takes its toll on the physical health and economic productivity of families, and annual lean seasons can force households to liquidate productive assets and resort to dangerous and undignified coping mechanisms. Improving food security not only enhances the wellbeing of participant families but also creates the “space” for participants to engage in longer term, higher yielding livelihood strategies. In alignment with TU’s fifth Definition of Success – that participants and their families enjoy a better quality of life, including improved food security – our program seeks to increase both the quantity of food available (through increased income, agricultural production, and access to government subsidies) and the quality of consumption (through education on nutrition, support of kitchen gardens, and income to purchase nutritious foods). Savings and access to affordable credit are also important resources during times of scarcity. We also raise awareness on intra-household food distribution in order to counter practices in which sons are given more food than daughters, and husbands more than wives.

Previous TU evaluations indicated that changes in food security and nutritional practices were among the most dramatic changes experienced by participants, reflected both in quantitative data and the significance for quality of life as identified by participants themselves. As discussed below, such changes are also reflected in the current project, with participant households reducing the frequency of food insecurity significantly more than the comparison group. We also found a considerable reduction in the reported number of months of food scarcity; however, this change was not significantly different between the two groups. The analysis of food security, more broadly, was complicated by the improvements experienced by the comparison group (which are difficult to explain) and by the challenges associated with the fact that baseline and endline surveys were now collected at the same time of year.

## Food Intake & Length of Lean Season

The number of participant households in West Bengal and Jharkhand who reported sometimes or often not having enough to eat in their household over the past year reduced from 45% and 57% respectively at baseline to only 1% of households at endline. The decrease by 44 percentage points for participant households in West Bengal is significantly different from the decrease of 22 percentage points experienced by the comparison group, suggesting an estimated project impact of 22 percentage points. Through consultations with the comparison group, they claimed that their decrease was largely due to increased income, which as discussed above, appears to have been influenced by program activities, as well as higher wages.

Figure 9. Percentage of Households Reporting "Sometimes" or "Often" Did Not Have Enough to Eat



We also found a considerable reduction in the reported number of months of food scarcity in West Bengal; however this change was not significantly different from the comparison group.

Nevertheless, our qualitative data suggest that project participants in both states are experiencing a very substantial increase in the quantity and quality of food for their households. FGD participants in West Bengal claimed that prior to the program they would generally eat once or twice a day, and that a typical meal was *ghata* (corn starch) with salt or spinach. They report to now eat three times a day: typically, a starch with spinach or vegetables in the morning and afternoon, followed by rice with pulses (mussur) and vegetables in the evening. Jharkhand participants also reported similar trends: they used to eat fresh rice once a day, mostly with green chili and salt, and have rice water in the evening. Now with crops throughout the year, they get sufficient cereals, pulses and vegetables for their own consumption. Many FGD participants added that they now consume fish, chicken or eggs at least twice a week. The comparison group in West Bengal noted some improvements as well: they now add a curry with vegetables to their rice, which they only consumed once in a while three years prior.

Participants attributed these gains in food security to an increase in income from their livelihood activities, the expansion or initiation of cultivation, the addition of kitchen gardens, and increased access to government food subsidy programs such as the Public Distribution Scheme. Nutrition training by health staff (e.g. the importance of “tri-color” food) also appears to have resulted in improvements in the quality of foods consumed. The impact of nutrition coaching is difficult to gauge relative to increased production and buying power. However information on good nutrition, along with the importance of providing proper nutrition to girls, was also noted by comparison group members as important messages that they learned from program participants.

These improvements in food security align with the findings from the six pilots reported by Banerjee et al.: significant increases were reported across four of the six sites, particularly in India and Ethiopia. However, while our own results are encouraging, further assessment of our true program impact is required, given the importance of contextual factors in influencing food security, as well as community-level impacts of the program on food production and income generating activities.

## Social Empowerment

Women’s status within their households and communities ranks poorly in India. According to the UN’s Gender Inequality Index, India currently ranks 135 out of 186<sup>14</sup> in a composite measure reflecting inequality in achievement between women and men in three dimensions – reproductive health, empowerment, and the labor market. TU’s sixth definition of success – significant progress toward economic and social empowerment – is central to understanding gender relations in situations of poverty and social marginalization. Field staff go to great lengths to ensure that the women selected for the program remain at the center of the intervention, even when engaging husbands to ensure buy-in. As participants are mostly from marginalized communities, living in relative isolation has often restricted their ability to advocate for access to state entitlements. Linkages to formal banking institutions can also be quite difficult, as it often requires a considerable degree of advocacy and pressure due to ingrained prejudices about the ability of poor, low-caste women to be viable customers. The program aims to spark an increase in women’s power, status, and confidence by increasing economic opportunities for women and creating a space in which women view themselves and are viewed by others as capable and successful actors who independently bring economic and social benefits to their households and communities. Program objectives also include an increase in political inclusion through participation in local governance and collective action.

As discussed below, we found a significant increase in program participants’ decision-making power within their households, relative to the comparison group, as well as a significant increase in the number of participants who engaged in collective action. We did not, however, find differences between the two groups’ participation in local governance. Empowerment findings are complicated by the fact that participants in West Bengal received additional training and

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<sup>14</sup> United Nations Development Programme, Human Development Reports: Gender Inequality Index. (Available at <http://hdr.undp.org/en/content/table-4-gender-inequality-index>)

support on ways to identify and confront gender injustice, and their families and communities received sensitization on these issues. Project spillover was detected, especially with regards to community-level collective action.

## Household Decision-Making

We assessed household decision-making across five domains – children’s education, healthcare, family planning, housing, and finances – plus an index combining these all into a single “empowerment” metric. Participants in West Bengal were less “empowered” than the comparison group at baseline, yet by the end of the project, the women significantly increased in all decision-making domains, relative to the comparison group. We found an index increase of .35 for participants, versus .11 for the comparison group, suggesting an estimated project impact of .24 (out of 1). This pattern of increased decision-making was consistent among Jharkhand participants as well, and the biggest impact for all participants was on financial decision-making, which is in line with the project focus on livelihood development and financial inclusion.

Through consultation with family members, many participants’ husbands confirmed that their wives are now taking the lead in managing their household’s finances, drawing on experiences and lessons from the program. Both participant groups emphasized the importance of making joint decisions with their partners, yet stressed their increased role in deciding and negotiating for market prices, for example, given their improved knowledge of the market. Many women stated that they often take the initiative to expand their livelihood activities or purchase a productive asset, but that they always consult with their partners in this decision.

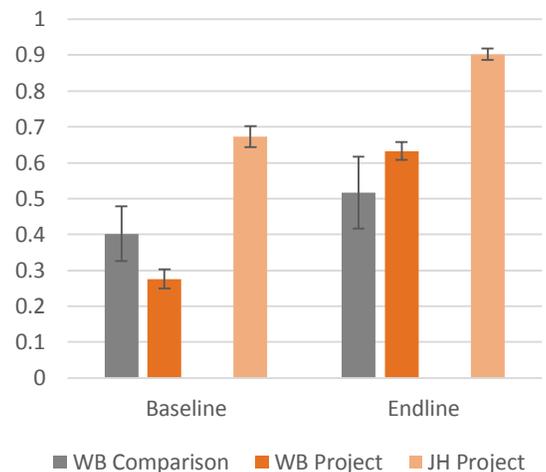
These findings differ substantially from the article by Banerjee et al., which found no overall effect on a very similar women’s empowerment index or any of its components. The researchers found that women’s empowerment was affected slightly at the time of the first follow up (which corresponds to the endline data presented here), but had diminished to become statistically insignificant one year later. While the focus on women as primary participants and the addition of a “gender justice” component to TU’s program may have increased the impact on women’s role in decision-making, it will be important to assess this change over a longer period.

## Status and Confidence

Participants in both states highlighted that an increase in earnings, economic independence, and freedom to manage economic activities (especially in the female-run SHGs) enabled participants to feel more valued in their households and communities. Given, however, that many of the women were economically active prior to the program – primarily as agricultural wage laborers – women’s change in status cannot be explained simply by the increased levels of economic contributions they made to their households, but also from the changed way in which that contribution occurs. Having ownership of assets, not just their labor, appears to boost status and provide a degree of security, as does engaging in livelihood activities that commonly bring participants into more direct contact with others both within and outside the community (such as traders).

The qualitative data also demonstrate that increased economic positioning has a psychological impact for participants, as well as a tangible impact on household resources. Participants frequently mentioned great pride in having savings, paying off debt, acquiring assets, and improving their family’s diets. They also discussed a new sense of creativity in managing multiple livelihood options and overall household finances. The role of the SHG was particularly highlighted in the discussion, as having access to credit through the SHG provided participants with a measure of security and room to plan (as loans at a reasonable rate were available for emergencies), and increased a woman’s value in her household, as she

Figure 10. Decision-Making Index



was the agent with access to these funds. Participants also mentioned how belonging to a successful SHG brought positive visibility within their communities.

The comparison group, by contrast, was very explicit to note that their self-confidence has not increased in the same way that they have witnessed with their neighbors who participated in the program. This attributed this primarily to a lack of institutional and social support through an organized SHG.

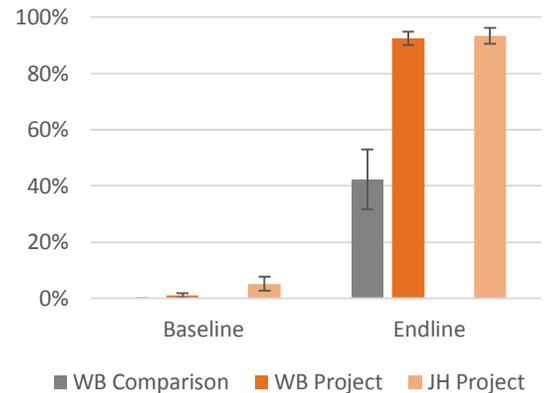
No directly comparable outcomes were measured by Banerjee et al. However, they found significant positive effects on certain mental health indicators, including a “mental health index,” a question on “perception of status in life,” and lack of stress.

## Political and Social Engagement

### Collective Action

We found a dramatic increase in the number of participant households that engaged in collective action, from 1% to 92% of participants in West Bengal and 5% to 93% of participants in Jharkhand. While the comparison group also increased by 42 percentage points, the difference in change between the two groups was highly significant. This suggests an estimated project impact of 49 percentage point. Within their SHGs, participants learn of their rights, identify problems affecting their lives, and collectively mobilize to demand their entitlements. As noted in Table 4, the most common form of collective action was to advocate for community work or infrastructure improvements from the government, such as roads or irrigation systems. Other types of collective action include commitments to address gender injustice (such as domestic violence or early marriage) and outreach to banks to provide services, which is a legal entitlement that is often denied to the poorest due to prejudice. Also noted in the table, none of the comparison group women participated in more than one type of action, while 39% of project participants in West Bengal engaged in two or more types.

Figure 11. Percentage of Households who Engaged in Collective Action in the Past Year



We were pleased to learn through monitoring and qualitative assessment that participant SHGs often involved other community members in their collective actions, and our analysis suggests that a large amount of the increase in the comparison group’s collective action was a result of program spillover effects. FGDs with both participants and other community members revealed numerous examples of participant SHGs involving their neighbors in collective actions. This was particularly evident when addressing issues of gender justice (enhanced in these communities by the additional training and support from the Ford Foundation-supported Gender Justice project), which can be seen in Table 4. In one example, when a few community members tried to prevent a participant from opening a small vending business in the local village market, the participant’s SHG mobilized other women in their village to demonstrate solidarity and ensure continuation of the participant’s business.

Table 4. Types of Collective Action at Endline

Collective Action Type	WB Project *	WB Comparison
Community work/ infrastructure	59%	7%
Gender justice	38%	21%
Bank linkage	37%	11%
Benefit access	4%	1%

\*Does not add to 100% given engagement in more than one type of activity

### Panchayat Participation

While we saw large increases in both groups of participants' involvement in Panchayat meetings, the lowest level of governance in India, we did not find a significant difference between the participants in West Bengal and the comparison group. Qualitative data suggest that the increase for the comparison group may be partially due to project spillover (Panchayat participation is encouraged by project staff), but that contextual factors are likely even more important. Namely, increased outreach by new political leaders also led to increased Panchayat participation, given the strong connection between the distribution of household or community-level benefits and the showing of political support at Panchayat meetings. This contextual change no doubt also influenced program participants' political participation too, and we are unable to estimate the program impact with confidence.

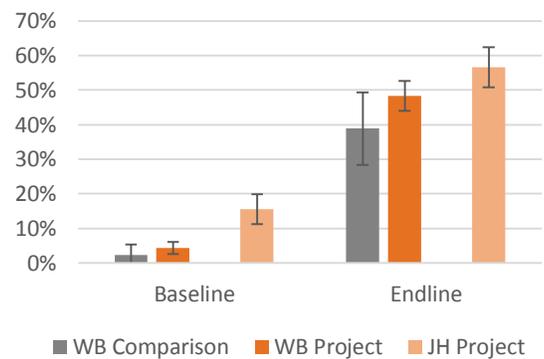
Banerjee et al. found that project participation increased political involvement in four of six sites. This is consistent with our findings on collective action, though our data on Panchayat participation suggest no significant impact. In future evaluations we intend to explore the impact of TU projects on political involvement at the household, SHG, and community levels more deeply, given that both contextual factors and spillover effects appear to have a significant bearing on results.

### Access to Social Services

The program's sustainability strategy is highly rooted in SHG's role as a point of contact and educational platform to enable participants to connect with government social protection schemes, a right in India that has largely been denied to this population due to their marginalized socio-economic status, combined with politically-motivated allocation of public resources. Limited access to adequate healthcare centers also contributes to vulnerability for extremely poor households in India. Minor illnesses often become serious due to inadequate treatment, and a single illness can deplete household assets through lost productivity and health expenses, thus undermining any gains a family has made. TU has therefore recruited and trained health workers that visit participants monthly (more frequently during pregnancies and illness) to impart preventative health care knowledge and help them link with the government health care system, which despite significant limitations, offers higher quality and lower cost treatment than village "doctors" who often lack medical training. Under our fourth Definition of Success – participants have improved access to available basic social services – the project aims to increase participants' access to government social safety net programs and to public health centers.

As discussed below, unfortunately we ran into challenges with our data on participants' access to government schemes, which require additional follow-up. We did, however, find a significant difference between the participant and comparison groups' reliance on rural medical practitioners as their primary point of treatment.

Figure 12.  
Percentage of Households that Participated in a Panchayat Meeting in the Past Two Years



## Government Programs

We are unable to assess changes in participants' access to government social safety net programs in West Bengal, due to an error with the survey instrument. Specifically, an outdated survey was used in error at endline to collect government linkage data, resulting in incompatible data. Participants in Jharkhand, however, increased access to government services by an average of at least one additional program. It is worth noting that income from MGNREGA was not significantly different between the project and comparison groups in West Bengal.

Access to government programs was not reported by Banerjee et al.

## Health Access Point

In West Bengal, we found a significant reduction in reported usage of rural medical practitioners as a primary point of treatment, relative to the comparison group. While the participant group decreased from 10% of households to 6%, for a total reduction of 4 percentage points, the number of comparison group households actually increased by 12 percentage points, for an estimated project impact of 16 percentage points. This shift away from rural practitioners to formal health services is promoted through messaging and outreach. The change was largest for the participants in Jharkhand, which our partner, NEEDS, believes is primarily due to their active collaboration with the National Health Mission to deliver health messaging, education, and linkages to health practitioners. At the end of the project, 93% of participants in West Bengal reported a public health center as their primary point of treatment for their families, while participants in Jharkhand were almost evenly split between the public health center and a private clinic.

Unsurprisingly, FGDs suggested that access to healthcare is more complicated than what is reflected in the quantitative findings. Many participants in West Bengal stressed that rural health practitioners are preferable, especially for common ailments such as a cold, fever, or menstrual issues, as these practitioners are easily accessible and the women feel more comfortable discussing sensitive issues with someone with whom they have known for many years. For more serious illnesses, however, they prefer to visit a government hospital. This trend was also found in the comparison group.

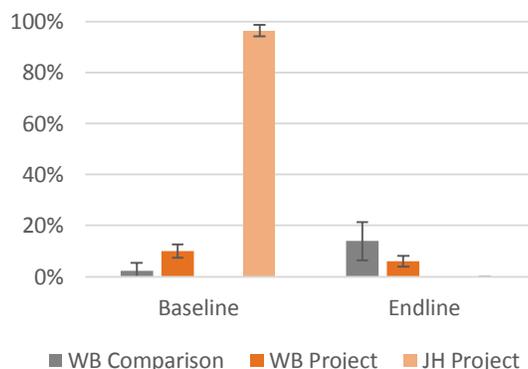
Health access was not examined by Banerjee et al., however they did measure a number of health-related outcomes and found little project effect across all sites.

## Summary of Key Findings

The purpose of this evaluation is to assess the outcomes and impact of TU's graduation program in West Bengal and Jharkhand. While a variety of evaluation sources have been used in this assessment, our emphasis is on the differences we found between participants in West Bengal and a comparison group in the same communities. Our analysis suggests that participants were able to achieve a wide range of outcomes that are indicative of being on a sustainable pathway out of poverty. Furthermore, despite considerable intra-community spillover effects and contextual factors that may have led to increases in the comparison groups' wellbeing, in most areas, the gains made by participants in West Bengal were significantly greater than those of a comparison group.

- Participant households diversified their livelihood activities by an average of 1.5 extra distinct occupations; an estimated average increase of 0.8 occupations can be attributed to the program. Participants also reduced

Figure 13.  
Percentage of Households Relying  
on Rural Medical Practitioner as  
Primary Source of Healthcare



reliance on daily wage labor from 66% at baseline to 3%; an estimated decrease of 35 percentage points can be attributed to the program.

- Participant households increased their total annual income by an average of Rs. 29,000 (\$527), an estimated Rs. 11,300 (\$205) of which can be attributed to the program.
- Participant households increased the total average value of household, land, and livestock assets by Rs. 34,000 (\$618), an estimated Rs. 14,000 (\$254) of which can be attributed to the program.
- Participant households significantly reduced migration by any family member, from 90% of households at baseline to 22%. An estimated decrease of 55 percentage points can be attributed to the program.
- The number of participant households with savings increased significantly, from 10% at baseline to 99%. An estimated increase of 45 percentage points can be attributed to the program. We are unable to estimate the project's impact on savings quantities.
- Participant households significantly reduced their reliance on moneylenders for loans, from 20% of households at baseline to nearly zero. An estimated decrease of 24 percentage points can be attributed to the program.
- Participant households significantly reduced the frequency of food insecurity, from 45% at baseline to 1%. An estimated decrease of 22 percentage points can be attributed to the program. We also found a considerable reduction in the reported number of months of food scarcity; however, this change was not significantly different between the two groups.
- Participants significantly increased their involvement in household decision-making. An estimated increase of .24 points (out of 1) on an "empowerment" index can be attributed to the program.
- Participants significantly increased their engagement in collective action, up from 1% at baseline to 92%. An estimated increase of 49 percentage points can be attributed to the program. No significant increase was found in Panchayat participation (India's lowest level of government).
- Participant households significantly reduced their reliance on informal rural health practitioners as a primary point of treatment, from 10% at baseline to 4%, and shifted in favor of using formal health services. The comparison group increased use of rural practitioners, resulting in an estimated decrease of 16 percentage points that can be attributed to the program.

## Lessons Learned & Next Steps

Evaluation results suggest that participants have made substantial and significant improvements in income, assets, financial inclusion, food security, and personal and social empowerment, changes which are largely consistent with the RCT findings from the Graduation pilots. However, further assessment is required, particularly in the areas of financial inclusion, food security, and political participation, in order to deepen our understanding of the mechanisms by which these gains were achieved by all groups, including potential spillover effects and contextual factors. We also aim to assess changes over a longer period, in order to explore the sustainability of outcomes.

This project has not only provided TU with new experiences to draw upon as we further refine our implementation of the Graduation Approach, but it was also instrumental in helping TU to launch partnerships with the Jharkhand and Odisha state branches of the Indian government's National Rural Livelihood Mission (NRLM). The integration of Graduation into large scale social protection and poverty alleviation programs is necessary in order to make a significant impact on extreme poverty, and with this new phase comes further questions and challenges. Together with our NRLM partners, we will assess the added value of the Graduation Approach when integrated into India's flagship livelihood development programs. As we prepare for these scale opportunities, we have identified a number of key lessons from our evaluation and experiences to date that will be particularly important to act on and explore further:

**Capitalize on the role of self-help groups as a foundation for development.** SHGs appear to play an important role in building the social and financial capabilities of participants in TU's Graduation program, and in sustaining them after graduation. In India, the SHG also acts as a critical foundation for a number of large government programs to deliver livelihood development services and other complementary benefits. The sustainability of SHGs is not guaranteed after the program ends, however. We are exploring if grouping SHGs into federations may strengthen their institutional capacity in the long term and promote their ability to leverage other government services and programs.

**Promote strategic linkages to government programs during the livelihood planning process.** We found noteworthy innovations when field agents went beyond supporting participants to access employment and other benefits, by also strategically integrating access to government programs for community infrastructure (e.g. irrigation). This allows staff to increase the menu and profitability of livelihood activities for participants, which may otherwise be deemed unfeasible without certain types of infrastructure.

**Strengthen the enabling environment for the poorest through broader community engagement.** Through this project, we identified a need for interventions with an additional target population: households that are barely above the threshold of extreme poverty and who are at risk of falling into extreme poverty, such as the comparison group. We are currently exploring the impact of a "lighter" Graduation Approach (specifically, the elimination of the grant transfer) with these households. Working with both groups allows us to reach a significantly larger number of participants, as the ratio of non-grant to grant participants is currently 2:1. We hypothesize that this helps to create an enabling environment for extremely poor households in three ways. First, it establishes a critical mass necessary for the gradual uptake of behavioral changes, such as improved health and gender-empowerment practices. Second, it creates a larger platform for community-level collective action, such as joint advocacy for a new road. Finally, it creates a population that draws the interest of local politicians and provides a stronger base for policy reach to the most vulnerable.

**Enhance the cost-effectiveness and scalability of the program.** Coaching appears to have been critical for reinforcing training and providing motivation for participants; however, we also know that coaching is the most challenging component to scale and constitutes a significant program cost. We will test different configurations of delivering coaching, such as through community resource people, who are women from the community that can serve as an advocate and resource for program participants. We are also exploring the use of mobile technologies to support monitoring and management, including the ways in which these technologies can potentially reinforce training and trouble shooting.

## Appendix A: Project Timeline

Table 5. Timeline of Key Activities

<b>Key Activity</b>	<b>West Bengal, JS Participants</b>	<b>West Bengal, JS Comparison Group</b>	<b>Jharkhand* NEEDS Participants</b>
Community sensitization	April 2012	--	NA
Participant selection	April-June 2012	--	November 2012
Baseline evaluation	July-August 2012	August 2012	November-December 2012
Self-help group formation	July-September 2012	--	January 2013
Coaching	Throughout	--	Throughout
Livelihood planning	September-November 2012	--	January 2013
Livelihood initiation	November 2012	--	January 2013
Midline assessment	October – November 2013	--	April 2014
Linkages with gov't and banks	October 2013 +	--	August 2013 +
Endline evaluation	March– April 2015	March-April 2015	June-July 2015
Focus group discussions	September 2015	September 2015	September 2015
<i>*In Jharkhand, Trickle Up originally initiated a partnership with another NGO, which was unable to fulfill the requirements of project. We then partnered with NEEDS thereafter. This resulted in a delay in project activities.</i>			

## Appendix B: Statistical Tests

In the table below, you can see the results of the statistical tests. Analysis was conducted using Stata 13,<sup>15</sup> and P-values were adjusted for multiple comparisons using the Benjamini-Hochberg-Simes Step-Up Method, which controls the false discovery rate.<sup>16</sup> If we use the level  $\alpha = .05$  as the cutoff for statistical significance, this procedure ensures that out of all the rejected null hypotheses, less than five percent are false rejections. In this case we tested 17 null hypotheses and rejected all but four (highlighted in gray in the table). On average, fewer than one of the 13 rejected hypotheses would be a false rejection. However, looking at the q-values, we see that even a much more stringent cutoff, such as  $\alpha = .005$ , would have led to the same set of rejected hypotheses. We can thus have very high confidence that all of these significant results are true.

Table 6. Results of Statistical Tests

Outcome	Q-Value
Number of Income Sources for Household	<0.001
Percentage of Main Respondents Whose Primary Occupation was Wage Labor	<0.001
Percentage of Households with a Member who Migrated (past 12 months)	<0.001
Value of Household Assets	0.002
Value of Livestock	<0.001
Total Value of Assets	<0.001
Acres of Land Owned	0.068
Total Household Income	<0.001
Percentage of Households with a Loan	0.650
Percentage of Households with a Loan from a Moneylender	<0.001
Decision-making Index	<0.001
Percentage of Main Respondents that Participated in Collective Action (past two years)	<0.001
Percentage of Households that Participated in a Panchayat Meeting (past 12 months)	0.246
Number of Government Schemes Accessed	0.001
Percentage of Households that Faced Food Insecurity (past 12 months)	0.002
Length of Lean Period (Number of Months of Food Scarcity) (past 12 months)	0.904
Percentage of Households that Use a Rural Medical Practitioner as their Primary Health Point	0.001

<sup>15</sup> Q-Values were calculated using the q-value package created by Roger Newsom.

<sup>16</sup> Benjamini, Y. & Hochberg, Y. 1995. *Controlling the False Discovery Rate: A Practical and Powerful Approach to Multiple Testing*. Journal of the Royal Statistical Society, Series B (Methodological) 57:1 289-300.