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List of Acronyms

4Ps	*Pantawid Pamilyang Pilipino* Program
BARMM	Bangsamoro Autonomous Region in Muslim Mindanao
CARD	Center for Agriculture and Rural Development
CBLAF	Cash for Building Livelihood Assets Fund
CCT	conditional cash transfer
CEM	coarsened exact matching
CMF	Community Mobilization Fund
COVID-19	coronavirus disease 2019
DSWD	Department of Social Welfare and Development
EF	employment facilitation
FGD	focus group discussion
FDR	false discovery rate
IPDO	implementing project development officer
LBP	Land Bank of the Philippines
MD	microenterprise development
MDES	minimum detectable effect size
MDM	Mahalanobis distance matching
MPDO	monitoring project development officer
NCR	National Capital Region
NGO	nongovernment organization
PHP	Philippine peso
PMT	proxy means test
PSA	Philippine Statistics Authority
PSM	propensity score matching
SCF	Seed Capital Fund
SEA-K	Self-Employment Assistance *Kaunlaran*
SLP	Sustainable Livelihood Program
SLPA	Sustainable Livelihood Program Association
SME	small and medium enterprises
STF	Skills Training Fund
USD	United States dollar

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Abstract

This study uses a matching design to evaluate the impacts of microenterprise assistance provided by the Department of Social Welfare and Development's Sustainable Livelihood Program to beneficiaries of the *Pantawid Pamilyang Pilipino* Program, the Philippine government's conditional cash transfer program. The evaluation focuses on the Seed Capital Fund, a grant worth up to PHP 10,000 per household that can be used as startup or additional capital for a microenterprise run individually or in a group. Most of the program beneficiaries are women. The study finds that treatment is associated with higher supply of labor hours among household heads' spouses. However, the intervention has no statistically significant effects on household income, expenditure, savings, or capital expenditure. Qualitative findings on business project implementation point to serious issues which support the null estimates. These include a substantial business closure rate, lack of participation among group members in business operation, lack of earning opportunities for group members, management issues, and low profitability. Moreover, the program's benefit-cost ratio is estimated to be substantially less than unity. Governments running similar livelihood programs should weigh whether the modest welfare gains they generate justify the high cost of running them.

Introduction

Microenterprises and self-employment are major sources of employment and income for poor households in the Philippines. In 2017, 28 percent of those employed belonging to the bottom third of the income distribution were self-employed (PSA 2018). Moreover, 56.6 percent of families in the same income group were engaged in entrepreneurial activities, accounting for 25.2 percent of the group's total income (PSA 2018).

Several government agencies implement microentrepreneurship programs to create livelihood opportunities for poor and marginalized households. The largest of such programs is the Sustainable Livelihood Program (SLP) of the Department of Social Welfare and Development (DSWD). Launched in 2011, SLP aims to improve the socioeconomic conditions of poor households through livelihood assistance. The SLP offers two tracks of support: the Employment Facilitation (EF) track, which links beneficiaries to employment opportunities, and the Microenterprise Development (MD) track, which organizes participants into community-based associations and gives them financial and/or training assistance to engage in individual- or group-managed microenterprise projects. Recipients of MD assistance comprise the majority of SLP beneficiaries. By end-2019, a total of 1,810,725 households had received MD assistance, while 454,849 households had received EF assistance (DSWD 2019f).

This study is the first impact evaluation involving SLP. It evaluates the impact of the program's MD track on the labor supply, income, expenditure, savings, and capital investment of poor households. MD assistance consists of capacity building, group formation, and grant funding.

This study focuses on the grant component of MD, primarily the Seed Capital Fund (SCF), which provides a maximum of PHP 10,000[1] per beneficiary to start a microenterprise or use as additional capital for a preexisting livelihood activity. A microenterprise project may be managed by an individual or a group of beneficiaries.

The evaluation is implemented through a matching design: SCF-recipient households from January to June 2018 were matched with nonrecipient but similarly eligible poor households. Data were collected through a survey of 2,592 households in 39 cities/municipalities from February to July 2020. Ninety-one percent of treated sample households

[1] The average market exchange rate in December 2021 was USD 1 ≈ PHP 50.

implemented a group-managed business project, and 92 percent of program participants were women.

The discussion is divided into seven sections. The next section reviews related literature. The third section describes the intervention, theory of change, and research questions. The fourth section discusses the evaluation design, sampling, and data collection. The fifth section presents the qualitative and quantitative findings, while the sixth section discusses the cost-benefit analysis. Finally, the seventh section discusses the results and conclusions, and the eighth section draws policy implications.

Related Literature

There is a substantial body of literature assessing the impact of interventions that promote self-employment or entrepreneurial activity in developing countries.

Many studies have examined the impact of microcredit in promoting entrepreneurial activity and improving the well-being of the poor. Banerjee (2013) noted some evidence that microcredit access leads to enterprise creation or expansion, but there is no strong evidence of its positive impact on income or total consumption. Another review by Banerjee et al. (2015a) showed similar patterns of microcredit impacts on intermediate and final household outcomes. Impacts on specific types of expenditure, such as education and health, are also absent. However, there is some evidence of negative effects on income from remittances and government transfers, suggesting increased self-reliance, which is somewhat encouraging. Systematic reviews of microfinance by Stewart et al. (2010) and Duvendack et al. (2011) also noted mixed impacts.

In addition, several experimental studies have shown the potential of grants in increasing business profits of existing microenterprises but suggested differential impacts in terms of gender, ability, grant mode, and initial firm size. For instance, De Mel et al. (2008a) randomized cash or in-kind grants of USD 100 or USD 200[2] among small nonagricultural microenterprises in Sri Lanka. Treated firms saw a significant increase in profits of about 5 percent per month relative to a grant of USD 100.

[2] USD 100–200 translates to about PHP 4,800–9,600 based on exchange rates (as of December 2021).

However, returns were lower for female entrepreneurs and those with less ability (in terms of years of schooling and working memory). Likewise, Fafchamps et al. (2013) randomized cash or in-kind grants of USD 120 to male and female microentrepreneurs in Ghana and found that cash grants have less impact on profits compared to in-kind grants. This suggests that giving capital in kind helps microentrepreneurs overcome the temptation to consume or liquidate the grant. Further, in-kind grants only increased the profits of female-owned microenterprises that have higher initial profits or higher initial capital stock. Owners of such firms tend to be more educated, have been in business longer, and are more likely to have had a formal loan than female microentrepreneurs with low initial profits. This indicates that cash and in-kind grants have less impact on subsistence microentrepreneurs, who may be less able to resist the pressure to consume the grant.

Several studies have also shown that livelihood programs known as "graduation" programs can have transformative and durable effects on the poor. These are programs that combine asset transfer and supporting intervention packages. In Bangladesh, Bandiera et al. (2013) evaluated the impact of a program that provides eligible poor rural women with a productive asset (i.e., livestock), classroom training, and regular visits by a livestock specialist and program officers. Two and four years after the program, target women experienced an increase in labor force participation and total hours worked and a substantial shift from seasonal wage employment to less seasonal self-employment, both in the extensive and intensive margins. Target women also experienced an increase in income and their households' consumption expenditure and food security.

Similarly, Banerjee et al. (2015b) implemented randomized trials in six countries to evaluate a program that provides poor households with six interventions sequenced over two years. The interventions include productive asset transfer, temporary consumption support, skills training, high-frequency home visits, access to savings, and health and/or education services. Meanwhile, Blattman et al. (2016) randomized war-afflicted villages in Uganda to evaluate a program that offers 5-day business skills training, a USD 150 cash grant, one-on-one advising and supervision for 4–5 months over 6 months, and 3-day group formation training that encouraged beneficiaries to form a savings group. Both

studies found positive results in the income, consumption, and assets of beneficiaries.

To review the effectiveness of entrepreneurship-promoting interventions, Cho and Honorati (2014) conducted a meta-regression analysis of 37 impact evaluation studies implemented between 1999 and 2011 in 25 developing countries. The analysis covers a wide range of interventions (e.g., training, grant/credit financing, counseling), target beneficiaries (e.g., youth, women, microentrepreneurs, social assistance beneficiaries), and outcomes (e.g., business activity, income, business performance, business practices). Results suggest that labor market activity outcomes (e.g., business setup or expansion, employment, hours of work) are more likely to be associated with positively significant outcomes compared to income-related outcomes (e.g., household income, profits, consumption). In terms of beneficiary groups, impacts estimated for youth and urban populations are more likely to be positive and significant than the general population, while programs for microfinance clients are less likely to yield positive impacts. In terms of interventions, results suggest that a combination of training and financing is more effective for improving labor market activity and income for social assistance beneficiaries than providing them separately.

Intervention, Theory of Change, and Research Hypotheses

Sustainable Livelihood Program

Prior to the SLP, DSWD implemented various livelihood strategies, which were rationalized into a single program called Self-Employment Assistance *Kaunlaran*[3] (SEA-K) in 1996. Under SEA-K, beneficiaries were organized into community-based associations and provided seed capital loans with no collateral and interest. Initially, the business loan amount was PHP 5,000 per member, but this was doubled to PHP 10,000 in 2010. Beneficiaries were expected to amortize the loan to their respective associations and contribute to their groups' funds. In turn, associations were expected to return the funds to DSWD's SEA-K revolving fund within two years.

DSWD Administrative Order 11 (s. 2011) created the SLP, with the objective of improving the poor's socioeconomic capacity by enabling

[3] "Kaunlaran" is a Filipino term that means development.

them to manage sustainable enterprises or linking them with job opportunities. SEA-K was subsumed into SLP's MD track, while the EF track was started to assist individuals seeking wage employment. A person should be at least 16 years old to qualify for MD assistance or at least 18 years old to be eligible for EF assistance. A person must also belong to a household assessed as poor in the *Listahanan*, DSWD's poverty registry. Current guidelines, such as the DSWD Memorandum Circular 22 (s. 2019) limit the number of SLP participants from the same household to two members and require that both should not be on the same SLP track.

Moreover, the SLP aims to sustain and expand the benefits gained by the *Pantawid Pamilyang Pilipino* Program (4Ps) beneficiaries (DSWD 2011). Thus, SLP has identified 4Ps beneficiaries as the program's priority beneficiaries. The 4Ps is the government's conditional cash transfer (CCT) program that provides poor households a monthly health grant of PHP 500 and a monthly education grant for at most three children amounting to PHP 300 per child in day care, kindergarten, and elementary and PHP 500 per child in high school. The grants are released conditionally to pregnant household members and children ages 0–5 years availing of certain health services, school-going children having a monthly class attendance rate of 85 percent, and the household grantee (usually the mother of the children benefiting from the grants) or both parents attending the monthly family development sessions. The program has 4.25 million active household beneficiaries as of December 2019 (DSWD 2019d). CCT households pass SLP's poverty requirement as they were identified using the Listahanan poverty registry. CCT households comprise 80.2 percent of all SLP beneficiaries as of end-2019 (DSWD 2019f).

Participation in SLP is voluntary, with program officers recruiting new participants annually. The program sets an annual target number of beneficiary households based on its approved annual budget. Each year, DSWD field offices identify target cities/municipalities and barangays[4] (villages) for participant recruitment, prioritizing sites with relatively large numbers of CCT households that remain unreached by SLP.

[4] Barangays are the smallest administrative unit in the Philippines. Based on the 2020 Census of Population and Housing conducted by the Philippine Statistics Authority (PSA), barangays have an average population of 2,593 and a median population of 1,387. As of 2020, the mean and median number of barangays in a city/municipality is 25.73 and 21 barangays.

Microenterprise Development track

MD assistance has three components: capacity building, group formation, and grant assistance. Capacity building consists of lecture sessions on (1) feasible livelihoods in the community based on initial analysis by SLP program officers; (2) microentrepreneurship, basic bookkeeping, accounting, and business registration requirements; and (3) microenterprise feasibility and grant application forms (DSWD 2019b). Attendance in these sessions, which include lectures conducted by an SLP program officer and/or an external resource person to be completed within two days, is mandatory. These lectures are usually done at the barangay level, where there are enough people who can join the MD track and form at least one SLP Association (SLPA).

Under the group formation component, MD participants are organized into SLPAs. An SLPA, composed of 5–30 members, needs to formulate its goals, adopt a constitution and bylaws, and elect officers. The SLPA then opens a bank account, usually with the Land Bank of the Philippines (LBP)[5] or a local rural bank, where the grants will be deposited. SLPA members who are also CCT grantees may belong to the same neighborhood group as CCT household parents called the *Pantawid* parent group, which consists of 25–30 members (DSWD n.d.).[6]

Meanwhile, the livelihood grants constitute the main intervention. The MD track offers three grants: the Skills Training Fund (STF), Cash for Building Livelihood Assets Fund (CBLAF), and SCF. STF is a training grant introduced in 2014, providing a maximum of PHP 15,000 per beneficiary. It aims to facilitate the acquisition of technical and vocational skills necessary to perform a trade. The amount covers various training costs, such as tuition, training supplies and materials, and meal and transportation allowances. CBLAF was also introduced in 2014 to provide stipends for participants while working on short-term labor-intensive projects that develop or rebuild their natural or physical assets necessary for microenterprise operation. The stipend amounts to 75 percent of the daily regional minimum wage. Some examples of

[5] LBP is a government-owned bank with a mandate to promote countryside development and financial inclusivity.

[6] The organization of Pantawid beneficiaries into parent groups is meant to strengthen their participation and support to the program's conditionalities. Further, parent groups serve as a venue for family development sessions and other activities that capacitate them to become more responsive in their parental roles and responsibilities (DSWD n.d.).

projects supported by CBLAF are the construction of common service facilities, desilting of irrigation canals, development of paddy dikes, and tree planting. Participants work on the project for a maximum of 11 days.

In 2015, DSWD transformed the SEA-K seed capital from a loan into a grant, which then became the SCF. It can be used as startup capital for a microenterprise or as additional capital for a preexisting microenterprise. The fund covers outlays for tools, raw materials, durable assets, and other operating or startup expenses. In 2018, DSWD increased the grant from PHP 10,000 to PHP 15,000 per beneficiary. SCF may be availed by an eligible household only once, while no such restriction is imposed on other SLP grants.

The SCF grant is awarded to SLPAs through check or bank transfer. SLPAs are required to submit proofs of purchase and grant utilization reports. Program guidelines permit purchases that deviate from the approved project proposal. However, group project beneficiaries should submit a resolution signed by the majority of the members, while individual project beneficiaries must submit a written justification for such deviations. An SLP monitoring officer will verify the grant utilization report against the approved project proposal. The reports will then undergo review at the provincial and regional levels. Based on the program guidelines, the grant utilization monitoring process must occur within 30 days of grant release, meaning that beneficiaries must utilize the funds rather quickly.

After a business project has been implemented, SLPA members must amortize the SCF grant to their association through mandatory contributions. The members' contributions become part of the SLPA's savings, which must be allocated for capital buildup (share capital), operational fund, and emergency fund. SLPAs may use the share capital to fund business expenses or investments (especially if the business is a group project) or extend credit to members. The amount, frequency, and duration of contributions are agreed upon by members and specified in the SLPA's bylaws. Meanwhile, the amortization term is usually one to two years. Because SLPAs are required to recover the grant internally, members treat the grant as a loan that must be repaid. SLP's bylaws template uses the word "amortization" to refer to grant recovery. Under SLPA bylaws, underpayment or nonpayment of mandatory contributions constitutes a breach of discipline and may be subject to fines or disciplinary action. However, there is no qualitative

data on whether this is being enforced and what other measures were taken by SLPAs to deal with nonpaying members. On paper, SLPAs are group liability organizations. In practice, based on focus group discussions (FGDs) with individual-project beneficiaries, members only pay for their own share of the grant. Cases where beneficiaries assumed liabilities of nonpaying members were not encountered.

A microenterprise project may be individually or group-managed, depending on participants' preferences. However, while the program allows beneficiaries to choose, there is anecdotal evidence that field implementers prefer to offer group projects over individual projects for practical purposes. Providing program services (e.g., preparing project proposal documents and monitoring) to beneficiaries pursuing a group project requires less time and effort than providing the same services to the same number of beneficiaries each pursuing an individual project. Moreover, since program outputs are measured in terms of beneficiary headcount rather than project count, program officers can reach their beneficiary headcount targets faster with group projects than individual projects. However, beneficiaries in urban areas prefer individual projects.

Individual projects are sole proprietorship businesses. These are owned and run by a single beneficiary or his/her household, who has a direct claim over the business' income. The beneficiary pays off the grant through contributions to the SLPA. In turn, SLPAs may decide to lend the money to their members once the initial grant has been fully recovered. Meanwhile, group business projects are collectively owned and operated by SLPA members, who can earn income from the group business by (1) receiving compensation (e.g., wage or stipend) in exchange for work (e.g., manning the shop, purchasing supplies, manufacturing products) and (2) receiving dividends from the group business' profits. In practice, however, the capacity of an SLPA to compensate working members or pay out dividends depends on its financial standing. SLPAs may choose to draw on the group business' income to recoup the initial grant rather than collect contributions from members. Such SLPAs may not be able to pay their members' dividends until after recovering the grant.

SLP implementation is decentralized to the 17 regional DSWD offices, while a national program management office sets policies and standards. The recruitment of SLP participants starts with the conduct

of orientations by implementing project development officers (IPDOs) in barangays to identify interested participants. Participants' eligibility is validated through a name match with the Listahanan database at DSWD field offices. Eligible individuals then undergo capacity-building sessions before organizing themselves into SLPAs. With the IPDOs' guidance, participants decide on their business projects and prepare their project proposals and other required forms and documents. The applications are reviewed and approved at the regional DSWD office. SLPAs also apply for DSWD accreditation as a civil society organization to be eligible to receive government funds. After grant approval, the check is released to the SLPA and deposited by officers into the SLPA's savings account.

The time from participant recruitment to grant release and business project implementation can take 6–12 months. IPDOs monitor project implementation within the first three months, including the grant's utilization following the business plan. Afterward, monitoring project development officers (MPDOs) take over the quarterly monitoring of beneficiaries during the projects' incubation period of 1 year and 9 months.

Earlier process evaluations of SLP served as preliminary work for this study. These include process evaluations of the EF track (Ballesteros et al. 2016) and the track selection process and EF services (Ballesteros et al. 2017). The most relevant to this study is the process evaluation of the SEA-K by Ballesteros et al. (2015). The financial assistance at the time consisted of a PHP 10,000 loan, and 99 percent of business projects that had been funded since 2011 consisted of individual business projects. Below are some of the notable findings of this assessment:

- Beneficiaries used the loan on activities that consisted predominantly of small-scale retail trading and mom-and-pop stores, backyard livestock raising, and small-scale farming.
- Beneficiaries tended to choose livelihood activities based on their lifestyle (i.e., mostly home-based), ease of entry, familiarity, and family livelihood history. There is less emphasis on market or growth potential.
- The share of collections to total receivables from 2011 to July 2014 was just 54.5 percent among associations with

available data. Repayment rates were negatively associated with association membership size.

- The cost to operate the program per peso disbursed in loans was twice that of a local nongovernment microfinance institution.

Theory of change

Figure 1 illustrates the causal link from the MD interventions to the final outcomes of interest, which is household expenditure. The thick arrows represent the primary channels, while the thin arrows represent the secondary channels.

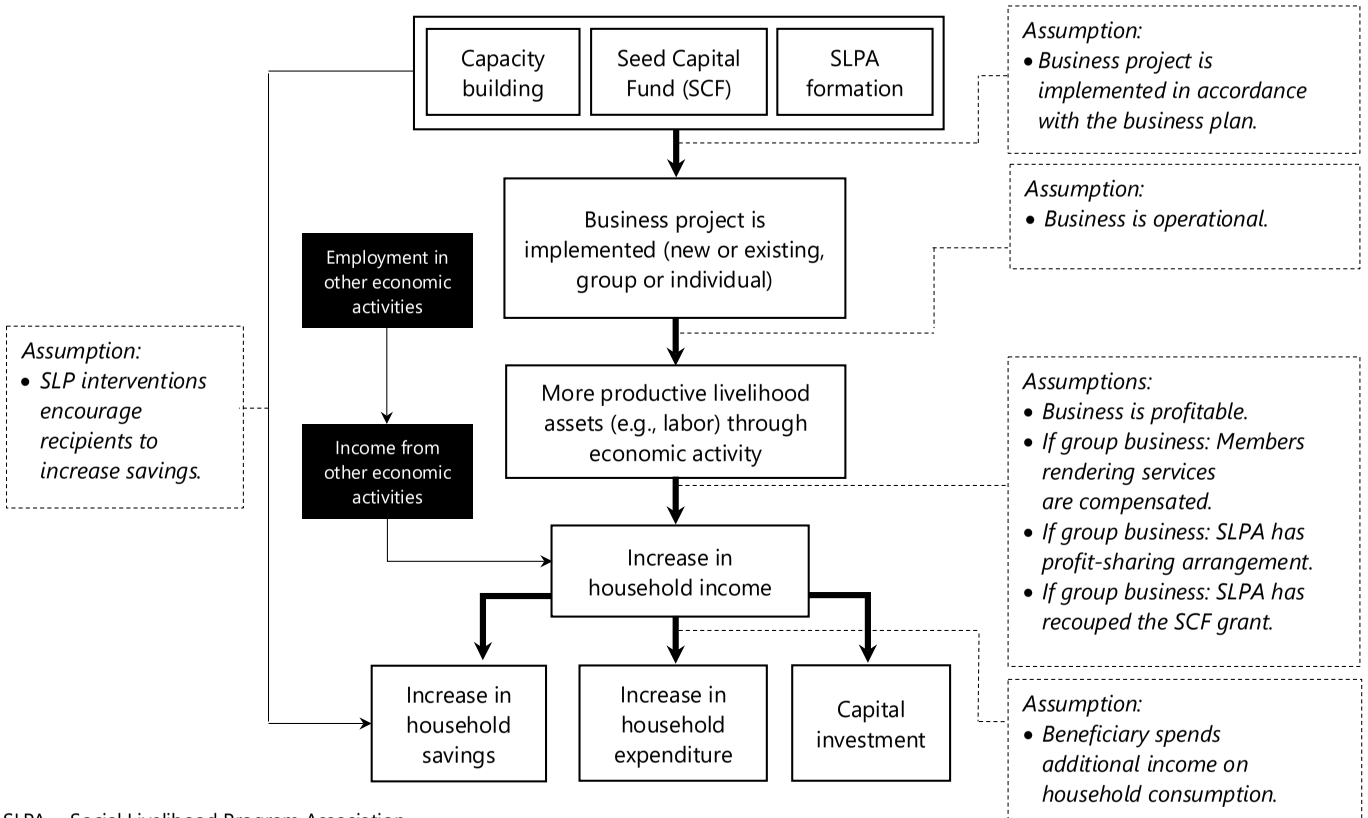
The first step is for participants to implement the business project after undergoing capacity building, forming an SLPA, and receiving the SCF. This assumes that the funds are used in accordance with the project proposal.

The implementation of the business project leads to the productive utilization of human capital and financial assets acquired through the program. Participants operate their chosen livelihoods, giving them employment and allowing them to earn income. Apart from employment, it also increases the hours spent working, an indication that beneficiaries are economically active. For low productivity livelihoods with low returns, working longer hours may be required to increase earnings, although this does not apply generally. The assumption leading to this step is that the business is operational.

Income earned from the business project is expected to increase household income. For individually managed activities, a new business or additional capital for a preexisting business allows the beneficiary to earn additional income from entrepreneurial or sustenance activities, leading to higher total household income. This assumes that the individual business is profitable. The PSA defines sustenance activities as household-operated activities, where most products are used for household consumption. These consist of farming/gardening, animal raising, fishing, hunting, and logging. Entrepreneurial activities are household activities where products/services are sold for profit.

For group-managed businesses, the link from the last step is mediated by group business arrangements and performance. Two main channels link group business performance with household income. First is the wage channel, which consists of receiving wages in return for working for the group business. The wage channel

Figure 1. Theory of change



SLPA = Social Livelihood Program Association
Source: Authors' illustration

directly affects the household's wage income. One assumption is that the SLPA compensates its members working for the business. Another assumption is that the group business is profitable enough so that it can compensate its members for their labor. The second channel is the dividend channel, which consists of receiving shares of the group business' profits via dividends. This channel directly affects the household's dividend income. This rests on several assumptions:

1. The SLPA has a profit-sharing arrangement.
2. The group business is profitable and has profits to distribute.
3. The SLPA has managed to recover the SCF grant so that it can afford to distribute earnings rather than put them away as savings.

The black boxes in Figure 1 indicate that household members may be employed and earn income from other economic activities not related to the SLP business project. Income from such activities also contributes to household income.

The increase in household income is expected to result in higher household expenditure and savings or capital investment. An increase in household expenditure assumes that the additional income is spent on consumption. Poor households are expected to be more inclined to spend their additional income on consumption than save. The additional income may also lead to higher savings if SLP interventions encourage participants to save. Alternatively, households may use their additional income to make further capital investments in their existing or new livelihood activities.

Other factors that are likely to impact the performance of SCF-financed projects are not explicitly considered in the theory of change. First, the assumption that the business project is profitable is predicated on the presence of a market for its products and services. Second is the quality and timeliness of interventions provided to beneficiaries. Earlier process evaluations have noted program officers' high caseloads, which could adversely affect the quality of services that participants receive (Ballesteros et al. 2015; Ballesteros et al. 2017). Ballesteros et al. (2017) also observed cases where project review and approval took as long as one year, leaving participants discouraged. The third factor is the entrepreneurial orientation and ability of beneficiaries. A substantial body of literature has examined the personal

characteristics that distinguish entrepreneurs from non-entrepreneurs and successful entrepreneurs from unsuccessful ones (Klinger et al. 2013). De Mel et al. (2008b) found that ability (measured in terms of education and scores in cognitive tests), motivation, and a competitive attitude distinguish small and medium enterprise (SME) owners from own-account workers in Sri Lanka. Using measures of ability, personality, and family background, their discriminant analysis of wage workers, own-account workers, and SME owners classified about 70 percent of the self-employed as wage workers rather than SME owners. This suggests that only a minority of microentrepreneurs are likely to become larger business owners. Thus, differences in entrepreneurial ability and personality could result in variations in entrepreneurial and household outcomes.

Research hypotheses and outcomes of interest

SLP's MD-SCF assistance results in longer hours of work among working-age members of CCT households. This study considers two dimensions of the number of hours worked. First is the number of hours worked per worker by household members aged 15 and above, which measures the economic activity of all working-age household members. Second is the number of hours worked by the CCT grantee-spouse, who is an authorized household member to withdraw CCT grants on behalf of the household. The grantee is typically the mother of the children benefiting from the grant. The CCT grantee may also be the father, grandparent, or guardian of the child/children if the mother is unavailable. CCT grantee-spouse refers to a CCT grantee who is also the household head's spouse. MD participants are usually members of the CCT household and the household head's spouse. It is therefore of interest to investigate the impact of the intervention on this household member. This paper also reports impacts on the share of household members in the labor force, the share of employed members (i.e., whether the CCT grantee-spouse is in the labor force), and the employment status of the CCT grantee-spouse.

SLP's MD-SCF assistance results in higher household income among CCT households. The main outcome of interest is household income. This study also investigates the impact on net income from entrepreneurial activities (or entrepreneurial income), net receipts

from sustenance activities (or sustenance income), wage income, and dividends income.

SLP's MD-SCF assistance results in higher household consumption among CCT households. The main outcome of interest is household expenditure. This study also examines the impact on specific expenditure components, such as food, health, education, clothing, and furnishings and durables.

SLP's MD-SCF assistance results in higher savings among CCT households. The outcome of interest is household savings per capita, but the impact on household borrowing per capita was also examined.

In addition to the four main hypotheses, this paper investigates the impact of the intervention on capital investments along two dimensions: (1) whether the household spent to repair, purchase, or rent physical capital for entrepreneurial or livelihood activities and (2) the total amount spent on these.

Variable definitions and references used are shown in Appendix A. The reference period for hours worked is seven days before the interview date, while the reference period for all other variables is 2019. Household size during the reference week was used to derive per capita terms for income, expenditure, and savings variables.

Since multiple outcomes (22 in total) were tested, significant effects on some outcomes when none exist are expected. The false discovery rate (FDR) is controlled for using Anderson's (2008) implementation of the Benjamini et al. (2006) procedure for FDR control.[7] FDR *q*-values are reported in the results alongside the "naïve" *p*-values. The *q*-value represents the expected proportion of rejections that are false discoveries (i.e., type I errors).

Evaluation

Design

This study uses a matching design to identify the impacts of the MD-SCF intervention. Matching exploits the presence of SLP-eligible but untreated households in project areas and pre-intervention data on characteristics of treated and comparison households from the DSWD poverty registry.

[7] Michael Anderson's Stata code was used to compute FDR *q*-values. https://are.berkeley.edu/~mlanderson/downloads/fdr_sharpened_qvalues.do.zip (accessed on July 1, 2020).

Although ideal, a randomized controlled trial was not possible due to time and resource constraints. Matching was the most practical identification strategy given the circumstances of the study.

Treated households are defined as CCT households that (1) received SCF assistance from January to June 2018, (2) did not receive any other form of SLP assistance during the same period, (3) have only one member who participated in the program, and (4) did not receive SLP assistance at any other time. Meanwhile, comparison households consist of CCT households that have not received any SLP assistance since 2011. The treated and comparison households are restricted to CCT program beneficiaries for two reasons: (1) CCT beneficiaries constitute the bulk of the SLP beneficiaries (80.2% as of 2019) and (2) DSWD has pre-intervention household data on CCT beneficiaries that can be used for matching treated and comparison households.

To construct the matching pool, three DSWD datasets were merged: (1) the SLP beneficiary dataset, (2) the CCT beneficiary dataset, and (3) Listahanan 2. The first contains a record of SLP beneficiaries from 2011 to 2019, the second contains a record of CCT beneficiary households, and the third contains socioeconomic data of poor households in the Philippines collected in 2015.[8] The CCT beneficiary dataset was initially merged with Listahanan 2 data to identify CCT households with pre-intervention data that can be used for matching. SLP data was then combined with the merged CCT-Listahanan 2 data to identify the comparison and treated households. CCT households that did not merge with SLP data comprise the comparison households. For CCT households that merged with SLP data, the conditions enumerated above were applied to identify treated households. Table 1 shows the geographic distribution of the pool of treated households identified by merging the DSWD datasets before matching them with comparison households.

[8] Listahanan 2 contains data for 15.1 million households, of which 5.1 million were classified as poor by a proxy means test (PMT) model. Listahanan 2 is the most recent available data source for information on CCT beneficiaries' socioeconomic characteristics before 2018. Meanwhile, Listahanan 1 was collected in 2010 and enumerated 10.9 million households in the Philippines, of which 5.2 million were classified as poor by the first PMT model.

Table 1. Geographic distribution of pool of treated households identified from merged DSWD datasets

Megaregion	Frequency	%
National Capital Region (NCR)	597	3.14
Luzon (minus NCR)	3,043	16.01
Visayas	9,235	48.59
Mindanao	6,132	32.26
Total	19,007	100.00

DSWD = Department of Social Welfare and Development
Source: Authors' computations using DSWD (2019a, 2019c, 2019e)

Treated and comparison households in the matching pool were matched using a combination of coarsened exact matching (CEM) and Mahalanobis distance matching (MDM) using the kmatch routine in Stata (Jann 2017). The sex, age, and education of the household head and spouse were used as matching variables for the CEM, while the household size and per capita household income[9] were used as matching variables for the MDM. Each treated household was matched with at most 10 comparison households within the same city/municipality without replacement.[10]

A follow-up survey of a sample of treated households and matched comparison households (one per treated household) was conducted to obtain data for the analysis.[11] Households were observed about 20–31 months after the treated group received the SCF grant. The time between the interventions (January–June 2018) and the end of the reference period for income, expenditure, and savings (December 2019) is 1.5–2 years. Sampling is discussed in the subsequent section.

[9] Per capita income is based on the household income predicted by the PMT model.

[10] The objective was to match observable characteristics. It should be straightforward to match households directly, rather than indirectly, using a propensity score matching (PSM) approach. This is particularly true when there are few matching variables and the PSM function needs to be estimated and may not be correctly specified. There is no clear superiority of PSM over matching on covariates when matching characteristics. There are even arguments against PSM. Frölich (2007) discussed the inefficiency of PSM compared to matching in covariates, while King and Nielsen (2019) pointed out occasions where PSM should not be used.

[11] Impact analysis could not be done using administrative data, as they lack data on the outcomes of interest.

Empirical analysis

Using data from the follow-up survey, the impact of the intervention was estimated through an ordinary least squares regression of the following model:

$$y_{ij} = \alpha_0 + \alpha_1 Treat_{ij} + \mathbf{x}'_{ij}\boldsymbol{\beta} + \mathbf{site}'_j\boldsymbol{\delta} + \epsilon_{ij} \qquad (1)$$

where y_{ij} is the outcome of interest for household i in site j, $Treat_{ij}$ is the treatment dummy (1 if treated, 0 if comparison), x_{ij} is a vector of household-level covariates, and $site_j$ is a vector of city/municipal (site) dummies. City/municipal fixed effects were included to capture city/municipal-level factors. Standard errors were clustered by city/municipality to capture the correlation of responses from the same city/municipality.

Three sets of household-level covariates were used. The first set consists of household size, the household head's number of years in school, a dummy variable indicating whether the household experienced a difficult event in 2019,[12] a dummy variable indicating whether the household received social assistance in 2019,[13] and the household's predicted income or PMT score in Listahanan 2.[14]

The second set of variables consists of asset ownership dummies, which were included to control initial household wealth, assuming that households' stock of assets remained the same over the observation period. These include dummies indicating ownership of a land motor vehicle, refrigerator, cell phone, air conditioner, television, washing machine, and personal computer.

Finally, the third set of variables consists of measures of personality. These include the following 14 variables that summarize responses to sets of questions measuring personality, business orientation, and risk tolerance. First is a business personality score, which is the average score in 14 questions measuring business orientation on a 5-point Likert scale.

[12] Difficult events include death or grave illness of a household member or relative, loss of employment or business failure, property loss or damage due to disasters, low or failed harvest, and forced displacement.

[13] Social assistance includes scholarship, daycare service, supplemental feeding, social pension, skills/livelihood training, self-employment/livelihood assistance, cash/food for work, other cash transfer programs, and disaster relief.

[14] The Listahanan 2 PMT model had the following specification: $log(y)=a+bX_h+cZ_{hi}+d_hW_h+\epsilon_h$, where X_h are household-specific indicators, Z_{hi} are individual-specific indicators, and W_h are community-specific indicators. Two models—one for the National Capital Region (NCR) and one for the rest of the Philippines—were estimated. For an in-depth discussion, see Velarde (2018).

Second is a general risk score, which is the respondent's assessment of his/her willingness to take on risk in general on a 10-point scale (1 = least willing; 10 = most willing). Third is a financial risk score, which is the respondent's assessment of his/her willingness to take on risks in general on a 10-point scale (1 = least willing; 10 = most willing). Fourth is a business risk dummy, which is the respondent's choice in a hypothetical scenario where he/she chooses between keeping a current business, earning a certain income, or starting a new business with a 50-percent chance of income doubling or halving. Finally, 10 personality variables that summarize responses to 28 questions were measured on a 5-point Likert scale. These 10 variables measure work centrality, achievement, impulsiveness, locus of control, optimism, polychronicity, power motivation, passion for work, being organized, and tenacity. Questions for the first variable were adapted from Auguste and Bricker (2017), while questions for the latter variable measures were adapted from De Mel et al. (2008b). These variables were used to control for differences in personality and entrepreneurial tendencies.

Limitations of the design

The evaluation design has several limitations, which are discussed in this subsection.

Lack of baseline data on outcomes

The matching dataset, Listahanan 2, lacks pre-intervention data on the outcomes of interest, which prevented matching households on pre-intervention outcomes and checking the balance on these outcomes after matching. Therefore, imbalance in pre-intervention outcomes cannot be ruled out.

Potential sources of bias

There are at least three potential sources of bias. First is selection bias, which arises if program participants and nonparticipants systemically differ in characteristics that influence household outcomes. These characteristics could include ability (i.e., education and cognitive capacity) and personality. Some steps were taken to address this issue. To account for differences in ability, households were matched on the education of the household head and his/her spouse (the household members who usually participate in SLP) and the household head's length of schooling was used as a control in the regression analysis. Lack of data

prevented matching households on personality traits, but differences in entrepreneurial personality were controlled for in the regressions. Despite these measures, it is possible that other household attributes influencing program participation were omitted. From previous qualitative fieldwork, program officers cite various reasons why eligible households who are offered the program choose not to participate. These include unwillingness to be a part of a group or pay contributions and lack of trust in other people in matters involving finances. Some also sign up for the program but drop out midway due to loss of interest or lack of time to participate (as doing so takes time away from doing housework or attending to their livelihoods).

A second potential source of bias arises if SLP's selection of target barangays within cities/municipalities is influenced by barangay-level attributes correlated with household outcomes. This would occur if, for instance, the program selects barangays that are poorer than nontarget barangays or, conversely, if those being selected are more conducive to commercial activity or are simply more accessible to program officers. While the density of CCT households unreached by SLP is the main consideration for barangay selection, there may be some systematic differences between target and nontarget barangays in unmeasured attributes that were not considered in both the matching and analysis.

A third potential source is confounding from receiving similar livelihood support in 2018. While this paper controls for receipt of social assistance (including livelihood assistance) in 2019, it does not do so for 2018 due to lack of data.

Spillover effects

Treated and comparison households within the same city/municipality were matched to reduce the time for data collection and ensure balance on city/municipal-level characteristics. This could lead to spillover effects, especially if treated and comparison households live in close proximity. Such effects were not addressed in this study. However, given the size of cities/municipalities, program impacts (in terms of income, expenditure, and business activity) would have to be substantial to result in externalities on untreated households or in general equilibrium effects on the local economy. Assuming a household size of five, the median number of households in 2020 based on census data was about 36,920 for cities and 6,796 for municipalities.

Hawthorne or John Henry effects, wherein subjects alter their behavior due to knowledge of being observed in an experiment, were not present since no trial was involved. Subjects were observed only once—about 20–31 months after the treated group received the business grant. For the same reason, the evaluation did not affect the behavior of SLP program officers. IPDOs who administered the program to the treated households in 2017–2018 were unaware that the households they were assisting would be part of an evaluation.

Sample size and sample selection

Survey sites were selected as follows. First, the country was divided into four megaregions: NCR, Luzon, the Visayas, and Mindanao. From each megaregion, excluding NCR, the region with the largest number of treated households (which were identified by merging the CCT and SLP beneficiary datasets) was selected. These regions were Region IV-B from Luzon, Region VI from the Visayas, and Region X from Mindanao. To ensure the availability of treated and comparison replacement samples in qualifying regions, cities/municipalities (or sites) were selected based on two requirements: (1) each site must have at least 40 matched treated households and (2) each treated household must have been matched with at least 2 comparison households.

A total of 56 sites satisfied these requirements. From these sites, 50 were then sampled using probability proportional to size sampling. The number of qualified sites in NCR, Luzon, and the Visayas was exactly the number required to reflect their respective megaregion's share of the treated pool (Table 2). Region X sites failed to reach the required number of sites for Mindanao. This was addressed by including sites from Region XII, which has the next largest number of treated households in Mindanao.

The initial plan was to survey a sample of 3,300 households. Hence, 33 treated households and 7 replacements were randomly selected within each of the 50 sites selected. More replacement households were drawn as required during data collection. For each treated sample household, only 1 comparison household was surveyed. The survey firm was advised to interview the treated household first, then select 1 of the 10 matched comparison households. It was also given the flexibility to strategize its selection of comparison households to facilitate survey completion.

However, the realized sample reached only 2,592 households in 39 sites due to delays in the conduct of the survey. The implementation of community quarantines to prevent the spread of the coronavirus disease 2019 (COVID-19) hampered in-person data collection. Thus, the sample collected consists only of households in sites where data collection had started or had been completed before COVID-19-related restrictions began. Moreover, data collection in sites where restrictions eventually eased was forced to pick up the slack in interviews in other sites where survey operations slowed down significantly (e.g., Region VI). This resulted in a nonuniform distribution of sample households across sites. Table 2 shows the planned and actual distribution of the survey sites and sample households, while Figure 2 shows a map of actual survey sites. Weights were used in the estimation to recover the target sample distribution into megaregions as shown in Table 1 (see Appendix B for the discussion).

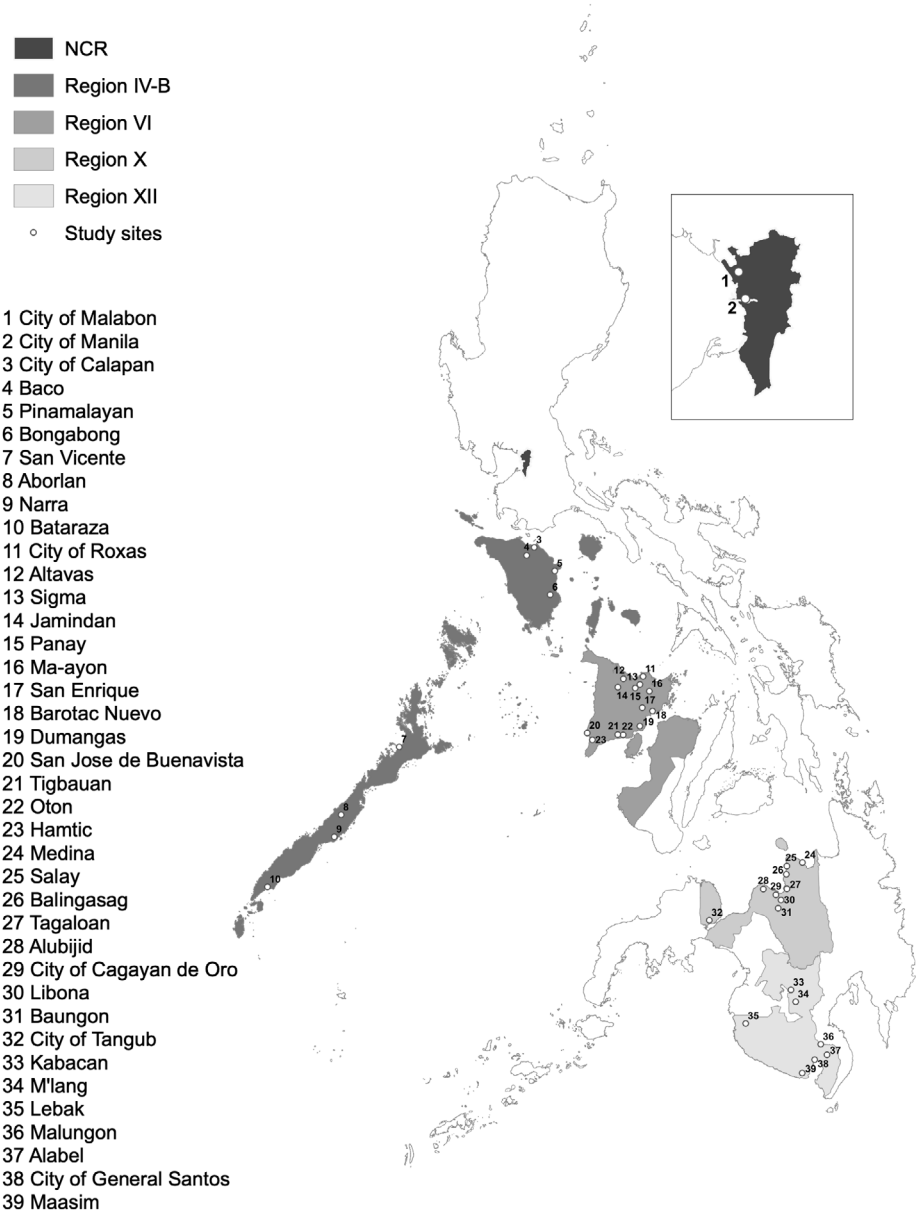
Table 2. Planned and actual distribution of sample sites and households

Region	Sample Sites		Sample Households	
	Planned	Actual	Planned	Actual
National Capital Region	2	2	132	108
Region IV-B	8	8	528	520
Region VI	24	13	1,584	758
Region X	9	9	594	682
Region XII	7	7	462	524
Total	50	39	3,300	2,592

Source: Authors' computations

Appendix C provides the results of the calculation of minimum detectable effect sizes (MDES) in the outcomes given the planned and realized sample sizes. Overall, the estimated MDES for the realized sample size is 12–13 percent larger than the planned sample size. While the MDES for labor outcomes are reasonable, those for household income appear to be rather large, in the range of 3.1–6.1 percent of the average annual income of families in the bottom five income deciles in 2018. While effect sizes on income are relatively small compared to total

Figure 2. Map of study sites



NCR = National Capital Region
Note: The inset shows NCR.
Source: Authors' illustration

income, they imply large rates of return, for instance, a 69-percent return to income on a PHP 10,000-grant. For comparison, De Mel et al. (2008a) found a return of just 5 percent (in terms of business profits) on a grant of USD 100 to microentrepreneurs. The actual effect on income, if it exists, is likely to be smaller, and thus the study has less than 80 percent power to detect it.

Survey data collection

The survey instruments used include a household questionnaire and two supplemental questionnaires (i.e., the SLP participant questionnaire and group business questionnaire). The household questionnaire collected data on the demographic and socioeconomic characteristics of sample households. Eighty percent of the respondents are household head's spouses, 17 percent are household heads, and 2.2 percent are household head's children. Meanwhile, the supplemental questionnaires collected qualitative information on the MD intervention received by treated households and the implementation of their business projects. The SLP participant questionnaire was administered to SLP participants in treated households. For respondents with an individually managed SLP business project, the form collected information about the (1) participant's business; (2) SCF amount, uses, and amortization; and (3) status of the SLPA and the respondent's role in it. For those participating in a group-managed business, the form collected information on (1) the respondent's role in the SLPA and group business, (2) work rendered for the business, (3) receipt of compensation, and (4) receipt of dividends. On the other hand, the group business questionnaire was administered to an SLPA officer or SLP participant if he/she is knowledgeable about the group's business project. It collected information about the (1) group business project and the SLPA; (2) SCF amount, uses, and recovery; and (3) net income of the group business. In addition, a municipal profile questionnaire was administered to any available officer in the city/municipal government's planning and development office. It collected city/municipal-level information, such as the main industries and notable shocks or events that occurred in the three years priors to the intervention (2016–2018).

Enumerators were equipped with tablets containing a data entry application. However, many used paper forms first during the interviews, then later encoded the responses into their tablets. Paper-based

interviewing reportedly cut down the interview time to two hours from three to four hours of tablet-based interviewing. Enumerators were allowed to conduct paper-based interviewing, as they were under tight time pressure to complete the survey.

A third-party firm conducted the survey from February to July 2020. However, in-person interviews were suspended in mid-March 2020 following the government's announcement of COVID-19 quarantine measures. Data collection resumed in the first week of June 2020 as restrictions eased up, with enumerators conducting either in-person or phone interviews. Phone interviewing facilitated data collection in sites where restrictions remained tight, although it had its challenges, including a higher nonresponse rate due to poor signal (especially in rural areas) and longer interview times. Nonetheless, the relatively small share of phone interviews likely limits any differences in data quality. The share of interviews done in person rather than by phone is 88.6 percent for the household questionnaire, 92.7 percent for the SLP participant questionnaire, 99.1 percent for the group business questionnaire, and 96.2 percent for the municipal profile questionnaire.

Since the reference period for income, expenditure, and savings is 2019, it is unlikely that the data collected for these variables were affected by the pandemic in 2020. However, the pandemic may have affected labor/employment indicators because the reference period used was the week prior to the interview.

Table 3 shows the regional distribution of the household sample, while Table 4 shows the distribution of the treated sample by business management type. Group business beneficiaries make up the vast majority (91.5%) of the treated sample, comprising either all or a large majority of sample beneficiaries in all megaregions, except in NCR, where all business projects are individually managed.[15]

The distribution of the treated sample by business management type is similar to that of MD beneficiaries in 2019,[16] as shown in Table 5. Group beneficiaries (80%) comprised the majority of MD beneficiaries nationally and in all megaregions except NCR, where individual

[15] Treated households' business types prior to the survey were unknown as the SLP administrative data used to construct the pool of treated households lacked this information.

[16] SLP only started collecting data on the distribution of MD beneficiaries by business management type in 2019.

beneficiaries predominated. The share of group business recipients to the total was 60.6 percent in Balance Luzon, 88.3 percent in the Visayas, and 88.3 percent in Mindanao (excluding the Bangsamoro Autonomous Region in Muslim Mindanao or BARMM)[17].

Table 3. Distribution of sample households by region

Region	Comparison	Treated	Total	
	Frequency	Frequency	Frequency	%
National Capital Region	54	54	108	4.2
Region IV-B	260	260	520	20.1
Region VI	379	379	758	29.2
Region X	341	341	682	26.3
Region XII	262	262	524	20.2
Total	1,296	1,296	2,592	100.0

Source: Authors' computations

Table 4. Distribution of treated households by region and SLP business management type

Region	Individual		Group		Total	
	Freq.	%	Freq.	%	Freq.	%
National Capital Region	54	49.1	0	0.0	54	4.2
Region IV-B	38	34.5	222	18.7	260	20.1
Region VI	18	16.4	361	30.4	379	29.2
Region X	0	0.0	341	28.8	341	26.3
Region XII	0	0.0	262	22.1	262	20.2
Total	110	100.0	1,186	100.0	1,296	100.0

freq. = frequency
Source: Authors' computations

Qualitative fieldwork

To collect qualitative data from CCT households, eight FGDs were conducted across three sites (one site each from NCR, Region VI, and Region X) in February and March 2020. The FGD sites were selected to

[17] BARMM has its own Ministry of Social Services and Development operating the SLP in the region.

Table 5. Distribution of 2019 MD beneficiary households by business management type and megaregion/region

Megaregion/Region	Group		Individual		Total	
	Freq.	%	Freq.	%	Freq.	%
National Capital Region	455	7.6	5,515	92.4	5,970	100
Luzon (minus NCR)	40,440	60.6	26,316	39.4	66,756	100
Visayas	89,933	88.3	11,945	11.7	101,878	100
Mindanao (minus BARMM)	89,589	92.1	7,715	7.9	97,304	100
BARMM	1,314	22.5	4,516	77.5	5,830	100
Total	221,731	79.8	56,007	20.2	277,738	100
Survey Regions (minus National Capital Region)						
Region IV-B	7,544	60.5	4,918	39.5	12,462	100
Region VI	20,062	93.8	1,334	6.2	21,396	100
Region X	27,548	100.0	6	0.0	27,554	100
Region XII	16,948	100.0	4	0.0	16,952	100

MD = Microenterprise Development; BARMM = Bangsamoro Autonomous Region in Muslim Mindanao; freq. = frequency
Source: DSWD (2019e)

represent different economic conditions for entrepreneurial activity. The NCR site is a highly urbanized city and a major center of commerce. The Region VI site, while mostly rural, has a large and growing urban population due to its contiguity with a regional economic center. Meanwhile, the Region X site is almost entirely rural and agricultural.

FGD respondents consisted of (1) treated households whose business projects were still operating, (2) treated households whose business projects had stopped operating, and (3) CCT households that had not been exposed to SLP interventions. The treated respondents were asked about

the situation of their business projects, challenges they have encountered in business operations, and, for those whose business projects have closed, the reasons for closure. The respondents were also asked about issues they experienced in amortizing or recovering the SCF grant and their perceptions of SLP's impact on their families' living standards and the noneconomic aspects of their lives. Meanwhile, the comparison respondents were asked about their awareness of SLP and their interest in participating in the program.

Timeline

Figure 3 illustrates the timeline of the evaluation. Treated households entered the program and underwent the required program activities in 2017. Administrative data on beneficiaries' exact program entry date were not obtained. Their SCF grants were released from January to October 2018. The observation period for income, expenditure, and savings is January to December 2019. By the end of 2019, 1.5–2 years had passed since the business grants were released.

Findings

Profile of individual SLP participants

Table 6 reports descriptive statistics on SLP participants, which refers to the member of the treated household who was recruited to the program and is a member of an SLPA.[18] Program participants are overwhelmingly female (92%), mostly household head's spouse (83%), and are 45 years on average. Most participants have low educational attainment, with only 35 percent having completed high school.

About 57 percent were not in the labor force during the reference week, which indicates that many participants joined the program for the opportunity to be economically active. Meanwhile, about 41 percent were employed. SLP participants worked an average of 16 hours during the reference week. About a quarter (24 percent) of participants were wage/salaried workers, while 13 percent were self-employed.

[18] A similar table cannot be made for comparison households because they have no SLP participant.

Figure 3. Evaluation timeline

SCF = Seed Capital Fund; COVID-19 = coronavirus disease 2019
Source: Authors' illustration

Table 6. Characteristics of SLP participants in treated households

	Observation	Mean
Female (%)	1,294	92
Household head (%)	1,294	15.69
Spouse (%)	1,294	83.15
Age (years)	1,294	45.14
Years in school	1,289	8.68
Completed high school (%)	1,294	34.70
In the labor force (%)	1,294	42.74
Employed (%)	1,294	40.80
Unemployed (%)	1,294	1.93
Underemployed (%)	1,294	2.63
Hours worked in the reference week	1,284	16.32
Wage/salaried worker (%)	1,294	24.19
Self-employed (%)	1,294	13.45
Employer in own business (%)	1,294	0.85
Paid family worker (%)	1,294	1.00
Paid family worker (%)	1,294	1.31

SLP = Sustainable Livelihood Program
Source: Authors' computations

Data on business project implementation

This subsection presents the data collected from the SLP participant and group business questionnaires. Of the 1,296 treated households, 1,278 (98.6%) have a corresponding SLP participant questionnaire interview. Meanwhile, the group business questionnaire data consist of interviews with 167 SLPAs, covering 1,111 out of 1,170 treated households in the SLP participant questionnaire that reported being part of a group business project. Data from one SLPA with a group business project that had yet to start operating at the time of the interview is not reported in this subsection. Thus, there are a total of 166 groups reported, covering 1,107 treated households. Each SLPA is engaged in only one group project. The tables reported in this section are presented in Appendix D.

Business management type, industry, and initiation

As previously noted, group beneficiaries comprise 91 percent of the treated sample. Most individual projects (58.3%) were preexisting businesses, while most group projects (83.7%) were new businesses initiated through SLP assistance (Appendix D, Table 1). In terms of sector, retail trade-related business projects (e.g., general merchandise/*sari-sari* stores[19] and retail of food products such as rice, meat, or fish) made up 49.1 percent of the individual projects and 89.8 percent of the group projects. Other popular lines of business for individual projects were farming/gardening (23.1%), livestock/poultry raising (18.5%), and fishing/aquaculture (8.3%).

SCF utilization and repayment

Treated sample households received an average of PHP 9,685 in SCF assistance (Appendix D, Table 2). While the maximum grant was PHP 10,000 per beneficiary, the actual amount can be lower, depending on actual business project requirements as costed in the project proposal. In terms of grant utilization (Appendix D, Table 3), individual project beneficiaries used an average of 64 percent of the grant on business project outlays, such as equipment, store construction or repair, and purchase of inventories; 2.4 percent on businesses other than the SCF-financed business; 9.1 percent on household expenses; and 24.2 percent on other unspecified items. For group projects, an average of 46.4 percent of the grant was spent on SLP business project outlays, 2.3 percent was spent on other businesses, 20.2 percent was used as working capital, and 27.7 percent are unspent funds.

In terms of SCF repayment (Appendix D, Table 4), none of the beneficiaries with individual business projects had fully amortized the grant to their SLPA. Just under two-thirds (62%) had partially amortized the grant, while over a third (38%) had not made any payments at all. The situation among beneficiaries with group projects was very similar: only 6.6 percent of groups had recouped the amount of the grant, 57.2 percent had only partially recovered the amount, while 36.1 percent had not recovered any amount.

[19] Sari-sari stores are neighborhood mom-and-pop stores. "Sari-sari" is a Filipino term that means "variety" or "sundry".

Business project survival and lifespan

Only 62.8 percent of the SLP-financed business projects were still operating at the time of the interview (Appendix D, Table 5). The survival rate (computed as the proportion of business projects that were still operating at the time of the survey) was higher among group business projects (71.7%) compared to individual projects (49.1%). Survival was also higher among preexisting businesses (65.6%) compared to new business projects (61.4%). The average business lifespan was 24.7 months for surviving projects and just 11.1 months for projects that had shut down. About 3 out of 5 participants (61.8%) with closed individual projects cited failure to earn money as the main reason for closure (Appendix D, Table 6). For group businesses, the top two reasons for closure were not making money (29.8%) and lack of participation from group members to operate the business (27.7%).

Appendix D, Table 7 shows the date when the nonsurviving businesses closed. About 31 percent of these businesses closed in 2018, 44 percent closed in 2019, and 15 percent closed in 2020. Four individual business projects closed in March 2020, when the COVID-19 lockdowns began. Of these four businesses, one cited not making money as the reason for closure, while the other three refused to disclose the reason. These figures suggest that the disruption brought by the COVID-19 lockdowns was not a major factor in the shutdown of nonsurviving business projects.

SLP association activity and status

When asked about the status of their SLPAs, respondents from 52 SLPAs (26.1%) said their association had been dissolved, while respondents from 20 SLPAs (10.1%) said their association was inactive (Appendix D, Table 8). Among SLPAs with individual projects, a remarkably high share (69.7%) had reportedly disbanded. Lack of interest or time for the SLPA, lack of SLPA meetings or activities, and conflict among members were commonly cited as main reasons for the SLPAs' inactivity or disbandment (Appendix D, Table 9). However, these reported figures should be taken with caution. Dissolution requires members to sign a resolution formally disbanding the SLPA. Possibly, SLPAs that were reported dissolved had not undergone formal dissolution but had been practically abandoned by their members.

Group members' work and income from the group business

In the theory of change, this paper posits that the two main direct channels through which group project members benefit from the business are by rendering paid services and receiving dividends. However, data suggest that most program beneficiaries in group projects were not earning income from these two channels (Appendix D, Table 10). About a third (32.8%) of the respondents who were part of a group project reported working for the business at any time during 2019. However, only 3.4 percent received compensation, with an average full-year compensation of about PHP 2,845. Similarly, only 5.9 percent of respondents reported that their groups distributed dividends in 2019, with dividends amounting to about PHP 1,805 per recipient on average. Among respondents who reported that their group did not distribute dividends to members, 43.5 percent said their SLPA did not do so because it was still trying to recoup the initial SCF grant. Meanwhile, 17.8 percent said the group struggled to be profitable, and about a third did not know the reason why (Appendix D, Table 11).

Group business net income

Finally, this study reports the net income of group projects in 2019 using revenue and expenses information obtained from respondents (Appendix D, Table 12). Reported net incomes vary widely, with many projects reporting negative net incomes. The average profits per member across the 166 group projects turn out to be modest, with a mean annual net income of just PHP 2,748 per member, while the median net income is only PHP 292 per member. Retail trade-related projects appear to have been the most profitable on average.

Findings from the qualitative fieldwork

Fifty-eight individuals belonging to CCT households participated in the FGDs. Nearly all respondents (55) were female, and two-thirds were aged 40–60, the average being 45 years. Thirty-nine participants were SCF recipients, representing 20 different SLPAs. Almost all treated respondents were officers in their respective SLPAs. SLP field officers were asked to identify possible FGD participants from among SCF beneficiaries from January to June 2018, with the additional requirement that such participants be familiar with the group business project if they were part of one. Although SLP field officers were free to

nominate whoever was willing and available, SLPA officers may have been easier to contact or convince to participate in the FGDs compared with non-officer members.

In terms of economic activity, most of the respondents from NCR depended on retail trading as their household's primary source of income. In Region VI, many respondents relied on income from wage labor or tricycle/pedicab operation, while some depended on retail trade, farming, and domestic cleaning. In Region X, half of the respondents depended on crop farming (particularly tobacco), with some relying on their husbands' earnings from construction or household repair.

FGDs with SLP beneficiaries

All NCR respondents used the grant entirely to support individual projects. Everyone invested the grant in retail trading activities, particularly food products such as rice, vegetables, and grocery items. Most of them used the grant as additional capital for activities they were already engaged in.

In Region VI, every SLPA used the grant exclusively as seed money for a group project. Most SLPAs pursued retail trading activities, but there was one SLPA that tried to set up a rice mill and another that established a vegetable farm. Meanwhile, one SLPA consisted two smaller groups that ran separate projects: a grain and poultry supply retail store and a pedicab operation.

Most SLPAs in Region X apportioned the grant between a common group project and individual projects for every member. Some respondents used their share of the grant to purchase piglets to fatten, while others added capital or bought equipment for existing household activities (e.g., tire vulcanizing, charcoal selling, carpentry). However, the discussion with them focused on the group projects they set up. Most SLPAs implemented retail-based group projects (e.g., community store, rice retail), but a few were agriculture-oriented. One group consisting of tobacco farmers used the grant to procure fertilizers for its members, which the latter are expected to repay upon harvest at a small markup. A few other groups went into hog or cattle fattening.

Issues in business operation. SLP beneficiaries reported the following issues in the operation of their business projects:

- **Delayed cash inflow or unrealized revenue due to extension of in-kind credit to customers.** All respondents that ran a

retail business, whether group or individual, allowed customers to purchase merchandise on credit. Customers were usually their neighbors or SLPA comembers, whom they may have had difficulties turning down. Many customers took a long time to settle their liabilities, if at all, which in turn constricted the cash flow needed to replenish stocks and maintain operations. Some group projects ended up shutting down after their working capital dried up due to uncollected receivables.

- **Lack of participation from members to operate the group business.** A number of participants cited lack of participation among group members in operating the business and expressed frustration that others are free riding. Others complained that few members attend group meetings because they were busy with household duties or their own livelihoods or were simply not available.
- **Disease and poor livestock yield.** Beneficiaries who engaged in livestock fattening projects had problems raising their stock. Two hog raisers reported losing some of their pigs to disease (hog cholera) despite efforts to treat them. One of them decided to liquidate their remaining pig stock after running out of cash to buy feeds. Meanwhile, two cattle raisers reported selling their stock at a loss when the cows they raised failed to reach the desired weight due to lack of grass to feed on.
- **Small margins and low sales.** Group retailers in the provinces were selling their merchandise for thin margins in consideration of their market (usually their own cash-strapped group members or neighbors). One retailer cited poor sales due to lack of demand in her neighborhood. Meanwhile, retail traders from NCR reported absorbing the rising cost of merchandise just to keep sales up.
- **Financial mismanagement.** One group project (rice milling) never took off as one officer appeared to have pocketed the funds allotted to purchase the milling machine. Another group project (retail store) closed after an officer in charge of daily operations took the funds for personal use. The business had already been struggling due to uncollected receivables from customers/SLPA members.

Issues in grant repayment/recovery. Nineteen of the 20 SLPAs represented in the FGDs had not managed to recover their SCF grant. SLPAs with individual projects grapple with members who fail to make contributions. For those with group projects, low revenues and cash flow issues hamper grant recovery. Rather than being saved for grant recovery, cash earnings are prioritized for operating expenses.

Perceptions of economic impact. Most respondents thought that their SCF-financed business projects were helpful to them. However, none said that they felt their standard of living improved because of it. When asked how the intervention helped them, individual project beneficiaries commonly responded that the business allowed them to earn extra income to spend on food or their children's education. The extra income helped them to make ends meet but not much more. One respondent pointed out that her earnings were just keeping up with the rising cost of raising her children.

All beneficiaries with a group retail business said that their projects were helpful to members by allowing them to purchase goods on credit. Members could come to the store not worrying about having no cash to pay upfront, especially for food items. Similarly, the tobacco farmer group said their project helped their members obtain fertilizer on credit. The two groups that ran into financial mismanagement issues said their respective business projects did not have an impact on their lives.

Perceptions of noneconomic impact. Some respondents said their SLP participation helped them boost their confidence and social skills, while others said that it helped them become more patient and understanding to others. The vegetable gardeners said the project allowed them to learn about farming. Other respondents felt that the program did not change any aspect of their life. Some expressed dissatisfaction with having members that do not participate in group activities.

FGDs with non-SLP beneficiaries

Almost all the non-SLP respondents were aware or had heard of SLP. Their impression of SLP was that it is a credit program for starting a business. They cited various reasons for not participating in SLP. Some are afraid to incur debt that they may be unable to repay with their meager incomes. Others said they would like to avail the assistance but refuse to be part of a group where some members end up free riding.

Some had undergone orientation or had submitted business proposals, but their process of joining the program stalled at some point.

When asked what government assistance they need to improve their standard of living, the most common responses were livelihood assistance and education support for their children. Those who preferred livelihood assistance wanted some capital to start a small business or add capital to a preexisting livelihood, such as hog raising, mat weaving, sari-sari store, and food stall.

Quantitative analysis

Baseline balance and summary statistics

Table 7 shows the results of the test for pretreatment balance in matching variables between treated and comparison groups. The mean differences are estimated through a simple linear regression of each variable with the treatment variable. Standard errors are clustered at the city/municipal level. There are no statistically significant differences in the matching variables except on the PMT (predicted income) score. Treated households have a lower predicted income of about PHP 195.5 per person compared to matched comparison households (significant at the 10% level). This may indicate an imbalance in pre-intervention income and expenditure.

Table 8 presents descriptive statistics on household characteristics used as regression covariates (except the PMT score, which was reported in Table 7). A larger share of treated households received social assistance in 2019 (by 5.9-percentage points) and have a land-based motor vehicle (by 5-percentage points) compared to comparison households. Among the 14 personality measures, treated and comparison households are significantly different in only one (locus of control), with comparison households having a slightly higher score. This suggests that the two groups are not systematically different in their personality traits and entrepreneurial orientation.

Meanwhile, Table 9 shows the summary statistics across different dimensions of the outcomes of interest. Statistically significant differences exist between treated and comparison households in the labor dimension. Employed members in treated households worked 1.89 hours more per person during the reference week compared to

Table 7. Balance on matching variables

	Treatment			Comparison			
	Obs.	Mean	SD	Obs.	Mean	SD	Diff.
Sex of household head (1 = female, 0 = male)	1,296	0	0	1,296	0	0	0.000
Sex of spouse (1 = female, 0 = male)	1,296	0.99	0.09	1,296	0.99	0.09	0.000
Household head's age (years)	1,296	43.27	8.66	1,296	43.30	8.71	-0.025
Spouse's age (years)	1,296	41	8	1,296	41	8	-0.025
Education of household head†	1,296	7.66	3.17	1,296	7.62	3.25	0.035
Education of spouse†	1,296	8.60	3.10	1,296	8.58	3.11	0.017
Household size	1,296	6.01	1.81	1,296	6.06	1.83	-0.043
Per capita income (PHP) (proxy means test score)	1,296	14,057.35	3,524.1	1,296	14,252.82	3,999.4	-195.464*

Obs. = number of observations; SD = standard deviation; diff. = difference; PHP = Philippine peso
* indicates significance at a 1-percent critical level from individual *p*-values.
† Education is the highest grade/level completed and is coded into categories, where 0 = no grade completed; 1 = kindergarten or day care; 2 = Grade 1; 3 = Grade 2; 4 = Grade 3; 5 = Grade 4; 6 = Grade 5; 7 = Grade 6; 8 = Grade 7 or first year high school; 9 = Grade 8 or second year high school; 10 = Grade 9 or third year high school; 11 = Grade 10 or fourth year high school; 12 = Grade 11; 13 = Grade 12; 14 = first year college; 15 = second year college; 16 = third year college; 17 = fourth year college or higher; 18 = college graduate; and 19 = master's or PhD.
Note: Regressions use clustered standard errors (clustered at the city/municipal level).
Source: Authors' computations

those in comparison households. Among CCT grantee-spouses, those who belong to treated households worked 2.3 hours more than their untreated counterparts. In terms of the type of workers present in the household, the share of households with wage worker members is higher among comparison households by 5-percentage points (77% versus 72%). On the other hand, the proportion of households with members who are self-employed or are unpaid family workers is higher among treated households (31% and 4%, respectively) compared to untreated households (25% and 2%, respectively).

Table 8. Summary of household covariates by treatment status

	Treatment			Comparison			
	Obs.	Mean	SD	Obs.	Mean	SD	Diff.
Household size	1,296	6	2	1,296	5	2	0.102
Years in school of household head	1,260	7.90	3.08	1,276	7.98	3.18	-0.088
Received social assistance in 2019 (%)	1,296	0.32	0.47	1,296	0.26	0.44	0.059**
Experienced difficulties in 2019 (%)	1,296	0	0	1,296	0	0	0.019
With car, jeep, van, motorcycle, or tricycle (%)	1,296	0.35	0.48	1,296	0.31	0.46	0.049***
With refrigerators/freezer (%)	1,296	0.14	0.35	1,296	0.14	0.35	0.005
With cell phone (%)	1,296	0.83	0.38	1,296	0.81	0.39	0.015
With air conditioner (%)	1,296	0.00	0.03	1,296	0.00	0.05	-0.002
With television (%)	1,296	0.74	0.44	1,296	0.74	0.44	0.008
With personal computer (%)	1,296	0.02	0.15	1,296	0.02	0.15	-0.002
With washing machine (%)	1,296	0.16	0.36	1,296	0.16	0.36	0.001
Business personality mean score‡	1,295	3.60	0.51	1,294	3.61	0.50	-0.013
General risk score†	1,295	7.02	1.87	1,294	7.02	1.92	0.004
Financial risk score†	1,295	6.83	1.88	1,294	6.82	1.93	0.006
Willing to take business risk‡	1,296	0.75	0.44	1,296	0.74	0.44	0.009
Work centrality score‡	1,295	3.84	0.65	1,294	3.84	0.63	-0.004
Achievement mean score‡	1,295	3.48	0.51	1,294	3.47	0.51	0.009
Impulsiveness mean score‡	1,295	2.57	0.46	1,294	2.56	0.48	0.016
Locus of control mean score‡	1,295	3.70	0.63	1,294	3.73	0.59	-0.036**
Optimism mean score‡	1,295	3.08	0.29	1,294	3.06	0.27	0.016
Polychronicity mean score‡	1,295	3.56	0.61	1,294	3.57	0.60	-0.005
Power motivation mean score‡	1,295	2.65	0.46	1,294	2.65	0.46	-0.002
Passion for work mean score‡	1,295	3.72	0.69	1,294	3.74	0.68	-0.021
Organized person mean score‡	1,295	3.61	0.68	1,294	3.59	0.67	0.023

Obs. = number of observations; SD = standard deviation; diff. = difference
** indicates significance at 5-percent critical level from individual *p*-values.
*** indicates significance at 10-percent critical level from individual *p*-values.
† Scale: 1 to 10
‡ Scale: 1 to 5
Note: Regressions use clustered standard errors (clustered at the city/municipal level).
Source: Authors' computations

Table 9. Summary of outcomes by treatment status

	Treatment			Comparison			
	Obs.	Mean	SD	Obs.	Mean	SD	Diff.
Labor							
Hours worked per employed member per week	1,212	43	20	1,213	41	18	1.89**
Hours worked by CCT grantee (spouse) per week	1,296	11.52	20.82	1,296	9.21	18.22	2.30**
Labor force participation (%)	1,295	0.50	0.24	1,296	0.50	0.23	0.00
Employed working-age members	1,295	0.43	0.24	1,296	0.43	0.23	0.00
CCT grantee (spouse) is employed (%)	1,067	0.36	0.48	1,029	0.35	0.48	0.01
CCT grantee (spouse) is in the labor force (%)	1,067	0.39	0.49	1,029	0.36	0.48	0.02
With wage worker (%)	1,296	0.72	0.45	1,296	0.77	0.42	-0.05**
With self-employed worker (%)	1,296	0.31	0.46	1,296	0.25	0.44	0.06**
With employer (%)	1,296	0.03	0.17	1,296	0.02	0.16	0.01
With unpaid family worker (%)	1,296	0.04	0.19	1,296	0.02	0.14	0.02**
Household income							
Household income per capita (PHP)	1,296	23,257	14,984	1,296	23,662	15,426	-405.06
Wage income per capita (PHP)	1,296	15,993.38	13,488.53	1,296	16,581.87	13,768.63	-588.49
Entrepreneurial income per capita (PHP)	1,296	1,358.26	3,558.83	1,296	1,103.36	3,281.10	254.90
Sustenance income per capita (PHP)	1,296	621	1,251	1,296	549	1,154	71.86
Entrepreneurial and sustenance income per capita (PHP)	1,296	2,267.59	4,214.92	1,296	1,862.61	3,894.41	404.98**
Net income from net share of crops, etc. per capita (PHP)	1,296	0.00	0.00	1,296	0.00	0.00	0.00
Income from other sources per capita (PHP)	1,296	3,404.15	2,158.33	1,296	3,432.08	2,191.86	-27.93
Dividends per capita (PHP)	1,296	11.70	108.43	1,296	0.00	0.00	11.70**

Table 9 *(continued)*

	Treatment			Comparison			
	Obs.	Mean	SD	Obs.	Mean	SD	Diff.
With wage income (%)	1,296	0.86	0.34	1,296	0.87	0.34	-0.00
With entrepreneurial income (%)	1,296	0.23	0.42	1,296	0.17	0.38	0.06***
With income from sustenance activities (%)	1,296	0.40	0.49	1,296	0.39	0.49	0.01
With other sources of income (%)	1,296	0.94	0.24	1,296	0.92	0.27	0.02**
Wage income share (%)	1,296	0.61	0.32	1,296	0.61	0.35	-0.00
Entrepreneurial income share (%)	1,296	0.06	0.29	1,296	0.07	0.27	-0.01
Sustenance income share (%)	1,296	0.05	0.14	1,296	0.04	0.12	0.01*
Other income sources share (%)	1,296	0.24	0.30	1,296	0.24	0.25	0.00
Household expenditure							
Household expenditure per capita (PHP)	1,296	24,026	11,437	1,296	24,173	11,647	-147.19
Food expenditure per capita (PHP)	1,296	16,922.38	7,544.34	1,296	17,078.88	7,565.84	-156.49
Education expenditure per capita (PHP)	1,296	375.92	496.68	1,296	367.77	497.68	8.15
Health expenditure per capita (PHP)	1,296	99	188	1,296	93	181	6.51
Clothing expenditure per capita (PHP)	1,296	360.26	315.27	1,296	363.62	310.01	-3.37
Furnishings and durables expenditures per capita (PHP)	1,296	69.37	146.99	1,296	64.83	140.52	4.53
Savings, borrowing, and capital investment							
Savings per capita (PHP)	1,292	167	1,079	1,296	136	1,030	31.14
Total borrowings per capita (PHP)	1,295	636.27	1,703.43	1,296	637.14	2,306.52	-0.88
With capital investment* (%)	1,296	0	0	1,296	0	0	0.00
Capital investment per capita (PHP)	1,296	46.98	682.35	1,296	25.59	320.98	21.40

Obs. = number of observations; diff. = difference; SD = standard deviation; CCT = conditional cash transfer; PHP = Philippine peso
* indicates significance at 1-percent critical level from individual *p*-values.
** indicates significance at 5-percent critical level from individual *p*-values.
*** indicates significance at 10-percent critical level from individual *p*-values.
Source: Authors' computations

Significant differences between treated and comparison households are also found in the income dimension. Treated households' combined income from entrepreneurial and sustenance activities is higher than that of comparison households by PHP 405 per person. There is also a statistically significant but small difference in dividend income (PHP 11.70 per person) in favor of treated households. In terms of income sources, a larger proportion of treated households earn entrepreneurial income compared to comparison households (23% versus 17%). However, net entrepreneurial income accounts for just 6 percent of total income for both treated and comparison households. The share of income from sustenance activities among treated households is marginally higher than that of comparison households by 1-percentage point. Interestingly, 86–87 percent of sample households earn wage income, which comprises the largest share of household income at 61 percent. The next largest source of household income is other sources of income (22–23%), of which the largest component is cash assistance from domestic sources. Overall, data show that wage income is the main source of labor income of sample households, which they supplement with income from entrepreneurial and sustenance activities.

Regression results

This subsection presents the results of the regression analysis of equation (1) (described in the empirical analysis subsection) alongside two other sets of results that consider how impacts differ by business management type. The second set reports the treatment effect estimates in a model that only includes group-project treated households and their matched comparison households, comprising 91 percent of the sample. In this case, the treatment effect estimate is interpreted as the impact on group-project beneficiaries. Meanwhile, the third set reports the results for a model that includes the interaction of the treatment variable and a group dummy (Treat × Group). In this case, the coefficient on the treatment term is the impact on individual project beneficiaries, while the sum of the estimates on the treatment term and interaction term is the impact on group-project beneficiaries. However, the estimates for the third set of results should be taken with caution because the sample is not powered to make multiple treatment comparisons (i.e., between treated-group, treated-individual, and untreated). In the regression tables,

these three sets are reported under columns labeled (1), (2), and (3), respectively. The *q*-value of each outcome over each model was computed. The *q*-value of a test measures the proportion of false discoveries when that test is rejected.

Table 10 reports the treatment effect estimates on the number of hours worked per week (labor supply), labor force participation, and employment rate. Individual treatment increased CCT grantee-spouses'[20] labor supply by about 9.8 hours per week ($p = 0.03$, $q = 0.007$). On the other hand, the impact of group treatment on the labor supply of CCT grantee-spouses is 8.4 hours lower compared to individual treatment recipients (i.e., a difference of just 1.4 hours relative to CCT grantee-spouses from comparison households) ($p = 0.001$, $q = 0.011$).

A similar pattern was observed in other labor outcomes. Individual treatment recipients among CCT grantee-spouses have a higher probability of being in the labor force (by 22.7-percentage points [$p = 0.002$, $q = 0.011$]) and of being employed (by 20.1-percentage points [$p = 0.002$, $q = 0.011$]) relative to their comparison counterparts. However, group treatment is associated with lower probabilities (by 0.9-percentage points [$p = 0.001$, $q = 0.012$] and 1.9-percentage points [$p = 0.001$, $q = 0.012$], respectively) compared to individual treatment. In terms of effects on household employment, individual treatment is associated with a higher proportion of household members who are employed (6.4 percentage points higher compared to comparison households [$p = 0.001$, $q = 0.011$]). Meanwhile, the share of employed household members among group treatment recipients is lower by 5.8-percentage points compared to households that received individual treatment ($p = 0.011$, $q = 0.054$).

Table 11 shows treatment effect estimates on household income variables. The intervention does not have any statistically significant impacts on household income, wage income, or sustenance income. In terms of individual significance tests, treatment is associated with positive differences in entrepreneurial income, sustenance income, the sum of entrepreneurial and sustenance income, and dividend income. However, none of them are significant considering their *q*-values (i.e., the false discovery rate in their respective models would be higher than 10% if any of them is considered significant). Thus, confidence is low that the individually significant differences represent true differences.

[20] The 4Ps operations manual defines "grantee" as the mother or most responsible adult member authorized to withdraw or receive the CCT grants on behalf of the household (DSWD n.d.).

Table 10. Treatment effect estimates on hours worked, labor force participation, and employment

Outcome	Model	Treatment	Estimate	SE	*p*-value	*q*-value	Obs.
Hours worked per worker	(1)	Treat	1.857**	0.751	0.018	0.153	2377
	(2)	Treat	1.836**	0.752	0.020	0.279	2164
	(3)	Treat	1.973	2.017	0.334	1	2377
		Treat x Group	-0.125	1.971	0.950	1	2377
Hours worked by CCT grantee-spouse	(1)	Treat	2.011**	0.894	0.030	0.169	2534
	(2)	Treat	1.154	0.950	0.232	1	2316
	(3)	Treat	9.776***	2.321	0.000	0.007	2534
		Treat x Group	-8.387***	2.398	0.001	0.011	2534
Share of members in the labor force (%)	(1)	Treat	0.007	0.010	0.487	1	2533
	(2)	Treat	0.002	0.010	0.869	1	2315
	(3)	Treat	0.069**	0.028	0.018	0.080	2533
		Treat x Group	-0.067**	0.030	0.030	0.120	2533
Share of employed members (%)	(1)	Treat	0.010	0.009	0.304	1	2533
	(2)	Treat	0.006	0.010	0.584	1	2315
	(3)	Treat	0.064***	0.018	0.001	0.011	2533
		Treat x Group	-0.058**	0.022	0.011	0.054	2533
CCT grantee-spouse is in the labor force (%)	(1)	Treat	0.011	0.025	0.660	1	2042
	(2)	Treat	-0.016	0.023	0.497	1	1851
	(3)	Treat	0.227***	0.072	0.002	0.011	2042
		Treat x Group	-0.236***	0.072	0.001	0.011	2042

Table 10 *(continued)*

Outcome	Model	Treatment	Estimate	SE	*p*-value	*q*-value	Obs.
CCT grantee-spouse is employed (%)	(1)	Treat	0.001	0.023	0.950	1	2042
	(2)	Treat	-0.024	0.023	0.285	1	1851
	(3)	Treat	0.201***	0.065	0.002	0.011	2042
		Treat x Group	-0.220***	0.066	0.001	0.011	2042

SE = standard error; obs. = number of observations; CCT = conditional cash transfer
** indicates statistical significance at 5-percent level.
*** indicates statistical significance at 10-percent level.
Notes:
(1) Model 1 = Regression of equation (1) using all observations.
(2) Model 2 = Regression of equation (1) with only treated households that are part of a group business project and their matched comparisons.
(3) Model 3 = Regression of equation (1) using all variables with a treatment-group membership interaction term.
(4) Estimates for the last two outcomes (CCT grantee-spouse is in the labor force and CCT grantee-spouse is employed) are marginal effects from a logit regression.
Source: Authors' computations

Table 11. Treatment effect estimates on household income

	Model	Treatment	Estimate	SE	*p*-value	*q*-value	Obs.
Household income per capita (PHP)	(1)	Treat	187.751	485.513	0.701	1	2534
	(2)	Treat	161.076	486.279	0.742	1	2316
	(3)	Treat	700.570	1749.004	0.691	1	2534
		Treat x Group	-553.885	1714.663	0.748	1	2534
Wage income per capita (PHP)	(1)	Treat	-80.086	563.567	0.888	1	2534
	(2)	Treat	-147.414	576.931	0.800	1	2316
	(3)	Treat	1094.557	1656.533	0.513	1	2534
		Treat x Group	-1268.707	1664.567	0.451	1	2534
Entrepreneurial income per capita (PHP)	(1)	Treat	193.340*	114.619	0.100	0.506	2534
	(2)	Treat	163.099	115.205	0.166	1	2316
	(3)	Treat	468.565	532.604	0.385	1	2534
		Treat x Group	-297.265	542.100	0.587	1	2534
Sustenance income per capita (PHP)	(1)	Treat	78.803	48.414	0.112	0.506	2534
	(2)	Treat	99.174*	50.964	0.060	0.426	2316
	(3)	Treat	-206.509	155.646	0.192	0.743	2534
		Treat x Group	308.159*	170.510	0.079	0.307	2534

Table 11 *(continued)*

	Model	Treatment	Estimate	SE	*p*-value	*q*-value	Obs.
Entrepreneurial and sustenance income per capita (PHP)	(1)	Treat	395.767**	158.479	0.017	0.153	2534
	(2)	Treat	408.737**	156.509	0.013	0.279	2316
	(3)	Treat	32.739	658.290	0.961	1	2534
		Treat x Group	392.099	658.772	0.555	1	2534
Dividends income per capita (PHP)	(1)	Treat	10.019**	3.990	0.016	0.153	2534
	(2)	Treat	6.581*	3.297	0.054	0.426	2316
	(3)	Treat	61.063*	34.276	0.083	0.307	2534
		Treat x Group	-55.131	34.887	0.122	0.437	2534

SE = standard error; obs. = number of observations; PHP = Philippine peso
* indicates statistical significance at 1-percent level.
** indicates statistical significance at 5-percent level.
Notes:
(1) Data are winsorized at 90 percent, except dividends.
(2) Model 1 = Regression of equation (1) using all observations.
(3) Model 2 = Regression of equation (1) with only treated households that are part of a group business project and their matched controls.
(4) Model 3 = Regression of equation (1) using all variables with a treatment-group membership interaction term.
Source: Authors' computations

Since 91 percent of treated households were part of a group business, the wage and dividend income channels are expected to play a central role in mediating income generation by the SLP-financed group business with household income. However, a very small proportion of beneficiaries earned income through these channels, with only 3.4 percent of treated households in group businesses earning wage income and only 5.9 percent earning dividend income directly from the group business. There is a statistically significant but small impact on dividend income, ranging from PHP 6.58 (p = 0.54, q = 0.426) to PHP 10.02 (p = 0.016, q = 0.153) per person. The absence of a significant and substantial difference in wage income, which accounts for about 60 percent of household income, coupled with the small difference in dividend income may explain the null effects on household income.

Meanwhile, treatment is associated with higher entrepreneurial income (PHP 193.30 per person [p = 0.100, q = 0.506]) and higher entrepreneurial and sustenance income (from PHP 395.77 [p = 0.017, q = 0.153] to PHP 408.74 per person [p = 0.013, q = 0.279]). This is unexpected since income generated from the group business is not thought to directly influence household entrepreneurial and sustenance income. By construction, entrepreneurial and sustenance incomes are earned from livelihood activities owned and operated by the households themselves rather than by the SLP beneficiary group. Given that beneficiaries in group-managed projects dominate the treated sample, household entrepreneurial income was not expected to increase directly due to income generation from the SLP-financed group business. The opposite would have been the case if individual-project beneficiaries dominated the treated sample. Thus, this paper cannot confidently attribute these differences directly to the intervention.

Finally, Tables 12 to 14 show estimated treatment effects on household expenditure, household borrowing and savings, and capital expenditure. Treatment has no statistically significant impact on any of these outcomes.

To uncover heterogenous treatment effects along geographic lines, equation (1) was estimated with an interaction between treatment, business type, and region. This interaction results in seven treatment subgroups: NCR-individual, Region IV-B-individual, Region IV-B-group, Region VI-individual, Region VI-group, Region X-group, and Region XII group.

Table 12. Treatment effect estimates on household expenditure

Outcome	Model	Treatment	Estimate	SE	*p*-value	*q*-value	Obs.
Household expenditure per capita (PHP)	(1)	Treat	-302.773	534.053	0.574	1	2534
	(2)	Treat	-595.481	535.750	0.274	1	2316
	(3)	Treat	750.255	1901.641	0.695	1	2534
		Treat x Group	-1137.352	2110.938	0.593	1	2534
Food expenditure per capita (PHP)	(1)	Treat	-207.980	338.894	0.543	1	2534
	(2)	Treat	-366.105	333.431	0.280	1	2316
	(3)	Treat	238.519	1182.765	0.841	1	2534
		Treat x Group	-482.254	1294.282	0.712	1	2534
Health expenditure per capita (PHP)	(1)	Treat	5.529	7.342	0.456	1	2534
	(2)	Treat	3.662	8.059	0.652	1	2316
	(3)	Treat	23.830	34.081	0.489	1	2534
		Treat x Group	-19.766	37.459	0.601	1	2534
Education expenditure per capita (PHP)	(1)	Treat	-3.771	19.372	0.847	1	2534
	(2)	Treat	-5.677	21.097	0.789	1	2316
	(3)	Treat	-30.623	54.655	0.579	1	2534
		Treat x Group	29.002	62.153	0.643	1	2534

Table 12 *(continued)*

Outcome	Model	Treatment	Estimate	SE	*p*-value	*q*-value	Obs.
Clothing expenditure per capita (PHP)	(1)	Treat	-2.630	12.505	0.835	1	2534
	(2)	Treat	-7.003	12.109	0.567	1	2316
	(3)	Treat	23.076	36.879	0.535	1	2534
		Treat x Group	-27.765	34.888	0.431	1	2534
Furnishings and durables expenditure per capita (PHP)	(1)	Treat	1.491	5.649	0.793	1	2534
	(2)	Treat	0.598	5.906	0.920	1	2316
	(3)	Treat	-10.440	19.434	0.594	1	2534
		Treat x Group	12.886	20.039	0.524	1	2534

SE = standard error; obs. = number of observations; PHP = Philippine peso
Notes:
(1) Data are winsorized at 90 percent.
(2) Model 1 = Regression of equation (1) using all observations.
(3) Model 2 = Regression of equation (1) with only treated households that are part of a group business project and their matched controls.
(4) Model 3 = Regression of equation (1) using all variables with a treatment-group membership interaction term.
Source = Authors' computations

Table 13. Treatment effect estimates on savings and borrowing

Outcome	Model	Treatment	Estimate	SE	*p*-value	*q*-value	Obs.
Savings per capita (PHP)	(1)	Treat	48.740	50.075	0.337	1	2530
	(2)	Treat	49.554	53.422	0.360	1	2312
	(3)	Treat	127.406	101.773	0.218	0.822	2530
		Treat x Group	-84.979	115.432	0.466	1	2530
Borrowings per capita (PHP)	(1)	Treat	31.797	80.751	0.696	1	2533
	(2)	Treat	2.236	80.739	0.978	1	2315
	(3)	Treat	406.155	356.516	0.262	0.977	2533
		Treat x Group	-404.349	361.890	0.271	0.977	2533

SE = standard error; obs. = number of observations; PHP = Philippine peso
Notes:
(1) Model 1 = Regression of equation (1) using all observations.
(2) Model 2 = Regression of equation (1) with only treated households that are part of a group business project and their matched comparisons.
(3) Model 3 = Regression of equation (1) using all variables with a treatment-group membership interaction term.
Source: Authors' computations

Table 14. Treatment effects on capital investment

Outcome	Model	Treatment	Estimate	SE	*p*-value	*q*-value	Obs.
Capital stock spending per capita (PHP)	(1)	Treat	1.807	11.897	0.880	1	2534
	(2)	Treat	3.573	13.256	0.789	1	2316
	(3)	Treat	2.690	31.218	0.932	1	2534
		Treat x Group	-0.954	30.878	0.976	1	2534
With capital spending (%)	(1)	Treat	-0.002	0.010	0.864	1	993
	(2)	Treat	0.001	0.012	0.927	1	896
	(3)	Treat	-0.007	0.041	0.866	1	993
		Treat x Group	0.006	0.047	0.898	1	993

SE = standard error; obs. = number of observations; PHP = Philippine peso
Notes:
(1) Model 1 = Regression of equation (1) using all observations.
(2) Model 2 = Regression of equation (1) with only treated households that are part of a group business project and their matched comparisons.
(3) Model 3 = Regression of equation (1) using all variables with a treatment-group membership interaction term.
(4) Estimates for "with capital spending" are marginal effects from a logit regression.
Source: Authors' computations

Results (Appendix F, Table 1) should be taken with caution since the sample is not powered for multiple treatment comparisons. Receipt of SCF is associated with higher supply of labor hours from CCT grantee-spouses for all subgroups that received individual treatment (i.e., NCR-individual, Region IV-B-individual, and Region VI-individual). However, within subgroups, causal connections between outcomes are broken by estimated treatment effects that are either statistically insignificant or statistically significant but negative. These are further discussed in Appendix F. Results suggest that positive impacts of individual treatment on the labor supply of CCT grantee-spouses are robust to regional heterogeneity, but the same cannot be said for other outcomes.

Cost-Benefit Analysis

This section presents the cost-benefit analysis of SLP's MD-SCF component. The base year for the cost estimates is 2018, corresponding to the year when the treated sample received the SCF grant. Prevailing cost parameters in the first semester of 2018 were used to estimate total costs for the grant component and the Community Mobilization Fund (CMF).[21] SLP uses the CMF to finance the transportation and meal allowance of program participants in orientation and capacity-building activities. Like the grant component, CMF expenses depend on the number of program participants.[22] SCF beneficiaries in 2018 were mobilized in the previous year and would have received the grants about 6–12 months after mobilization since proposed projects must go through an approval process.

SLP administrative costs include the service costs of project development officers, transportation, communication, and staff seminars/trainings/workshops. Meanwhile, personnel costs have fixed and variable components. Fixed costs include salaries of regular and contractual staff whose numbers are invariable to the number of program participants. Meanwhile, variable costs consist of wages and benefits

[21] These are PHP 10,000 per beneficiary for the SCF and PHP 10,000 per beneficiary for the CMF. In the second half of 2018, both funds were increased by PHP 15,000 per beneficiary.

[22] CMF is estimated from the meal costs for an eight-day activity or training. The fund may not be fully utilized since meal expenses are minimal. Further, orientation and basic training may be conducted half-day, which does not require expenses for a full meal. In some cases, food is donated by the local government or other agencies. Savings from the CMF can be used for other purposes, such as transport costs of participants and registration of associations.

for contract of service IPDO positions, which vary in number based on the program's target number of beneficiaries. The program distributes its target beneficiary headcount among IPDOs. In 2017 and 2018, each IPDO had a caseload of 240 SLP beneficiaries. This study treated both the administrative and personnel costs as fixed costs since data from the SLP National Program Management Office do not disaggregate personnel by type of service. Administrative and personnel costs were estimated for the MD-SCF program component using the share of SCF-only beneficiaries to the total number of SLP beneficiaries (or accomplishments). Accomplishments exclude referrals, defined as SLP participants referred by the program to other organizations or institutions that provide startup capital for microenterprises. There are external fund sources (e.g., congressional funds) for the grant component, but the administrative and personnel costs to disburse these grants are charged to the SLP annual budget.

As the SLP is built on a previous program (SEA-K), capital assets (e.g., building, equipment) were not included in the reckoning of costs. The developmental/startup and recurring costs are assumed to be incurred once annually since beneficiaries receive the seed fund only once, and costs are incurred only at year zero. After grants are disbursed, IPDOs rarely engage or visit the beneficiaries.

Monitoring costs are subsumed under annual estimates of administrative and personnel costs since the budget for project monitoring forms part of the total implementation and monitoring cost of field staff. By design, SLP projects have an incubation period of two years, whereby beneficiaries are observed and guided on business management and strengthening cooperation with associations and groups. As discussed earlier, IPDOs monitor beneficiaries' SCF utilization up to three months after grant release. This includes ensuring that all procedures, activities, materials, and equipment in starting a business are met. Afterward, MPDOs take over to check the progress of the project/participants and the SLPA for one year and three quarters. However, in practice, there is little monitoring done after the SCF is released. Based on key informant interviews and FGDs, coaching is not commonly practiced, and program officers only visit beneficiaries when there are organizational issues among members. For individual projects, this could be because more than half (61%) are preexisting businesses. In the case of group businesses, of which the majority (about 83%) are new businesses, technical support can

be given by government agencies, such as the Department of Agriculture for agricultural livelihoods or the Department of Trade and Industry for agribusiness or nonagricultural enterprises. In such cases, technical support is provided from existing programs or projects of the respective agencies and is not necessarily targeted to support SLP.

Table 15 shows that the total implementation cost of the MD track with SCF assistance is about PHP 1.74 billion. About 70 percent of the cost comes from the SCF component, while 14 percent is from CMF. On average, CMF, administrative, and personnel costs amount to PHP 4,228.93 per beneficiary. This means that to disburse one peso of grant money, SLP incurs an administrative cost of PHP 42 centavos. This is 12 centavos higher than the cost of disbursing funds estimated by Ballesteros et al. (2015) for the previous SEA-K program. SLP also compares unfavorably to local microfinance institutions Center for Agriculture and Rural Development (CARD Inc.) and BRAC in terms of fund disbursement efficiency based on estimates from the same study.

Table 15. Estimated cost of delivering MD assistance with SCF grant, 2018

Item	Amount (PHP)	Percent Share
Grant (SCF)	1,226,210,000.00	70.28
CMF	245,242,000.00	14.06
Administration cost	161,134,027.69	9.24
Personnel cost	92,149,189.40	5.28
Share to central office administration cost	12,757,032.82	0.73
Share to central office personnel cost	7,273,633.23	0.42
Total	1,744,765,883.14	100.00
Cost per beneficiary (inclusive of grant)	14,228.93	
Cost per beneficiary (exclusive of grant)	4,228.93	
Total SLP budget	4,851,943,578.04	
% MD-SCF expenditure to SLP budget		36.0

MD = Microenterprise Development; SCF = Seed Capital Fund; SLP = Sustainable Livelihood Program; CMF = Community Mobilization Fund; PHP = Philippine peso
Notes:
(1) Accomplishments and total SLP budget exclude those for the Bangsamoro Autonomous Region in Muslim Mindanao. Grant cost and CMF is based on the 2017 cost. CMF is based on the number of SCF beneficiaries. Administration, personnel, and central office fund utilization are weighted based on the share of SCF accomplishments to total SLP accomplishments by region in 2018.
(2) Monitoring costs are subsumed under administrative and personnel costs.
Sources: DSWD (2018a; 2018b)

CARD is a microfinance nongovernment organization (NGO) that has been operating in the Philippines since 1986, while BRAC operates a program for microenterprise development for the grassroots.

Turning to program benefits, this study estimates the benefits of the MD-SCF component using the point estimate of the treatment effect on entrepreneurial and sustenance income per capita to project benefits from group projects (PHP 408.737). Although this impact is not directly attributed to SLP as explained in the previous section, the grant may have provided opportunities to non-SLP businesses of the treated households. The transmission channel for some households could be through wage income and dividends, while for others, it could be through access to some form of credit (cash or in kind). An average of 27 percent of the grant given to group businesses in the sample are reportedly unspent, which could have been used by SLPAs as a revolving credit fund for members.

It is assumed that 91 percent of SCF beneficiaries participate in group-run projects, of which 72 percent will survive for at least five years. SLP has a preference for group enterprises since it tends to lower the mobilization and administrative costs per project and per beneficiary. Also, individual grants can be pooled so that the association/group can have higher initial capital, which may allow them to engage in viable enterprises. The present value of the income streams for five years plus the deflated value of the SCF in 5 years result in program benefits of about PHP 891.3 million at a social discount rate of 10 percent (Table 16).

Given this, the benefit-cost ratio is 0.56, which means that the cost of operating the program substantially outweighs its benefits. In particular, the administrative and personnel costs to disburse the seed fund is high. DSWD may need to consider other mechanisms to disburse the grant, such as using NGOs, microfinance institutions, social enterprises, or local government units as conduits for the funds.

Since the benefit was estimated from group enterprises only, the total program cost only includes the expenditure for group enterprises, which amounts to PHP 1,587.74 million. It can be argued that the benefit estimate does not capture the potential benefits of MD-SCF in the community in terms of jobs created from new businesses. It also assumes that there is no new infusion of capital into the business within five years.

Table 16. Benefit estimate

Year	Benefit per Capita	Total Benefit (PHP)
2019	408.74	164,192,267.18
2020	438.57	176,178,302.69
2021	470.59	189,039,318.78
2022	504.94	202,839,189.05
2023	541.80	217,646,449.85
Initial capital (deflated to 2023)		320,196,369.91
10-percent net present value		891,321,358.95
15-percent net present value		762,900,855.95

PHP = Philippine peso; MD = Microenterprise Development; SCF = Seed Capital Fund
Note: Assumptions are as follows: the number of beneficiaries in group enterprises is 111,585 or 91 percent of the total number of MD-SCF beneficiaries in 2018 (122,621); 72 percent are operational over five years; households have five members each; benefits grow by 7.3 percent per year, using the average annual growth of gross value added for retail trade in 2016–2019; the Consumer Price Index with base year 2012 was used to deflate the SCF to 2023; and the social discount rate is 10 percent.
Source: Authors' computations

Conclusions and Discussion

This study finds fair evidence that receipt of SLP's MD-SCF assistance is associated with higher supply of labor hours, labor force participation, and employment rate among CCT grantee-spouses that pursued an individual business. In contrast, the labor impacts on CCT grantee-spouses that pursued a group business are lower or roughly nil. This pattern is rather expected. In an individual project, the participant operates his/her own business, possibly with the help of other household members. The more muted effect of group treatment on labor supply is supported by the qualitative finding that a substantial majority (about two-thirds) of group-business beneficiaries in the sample did not perform work for their group business in 2019. A plausible reason is that group businesses are not big or complex enough to require employing many members. It should be noted that all hours performed in all economic activities were measured.

While the apparent increase in economic activity is positive, the results suggest that this does not translate to greater household welfare. There is no evidence of treatment being associated with higher household income, expenditure, savings, or capital investment. However, there is

evidence (considering individual tests of significance) that treatment is associated with higher entrepreneurial and sustenance income, even when the estimation sample is limited to group treatment recipients. This is surprising since group projects are not expected to directly affect income earned from household-run entrepreneurial and sustenance activities (the impact being on wages and dividends instead). Possibly, a larger share of treated households was engaged in entrepreneurship, to begin with. This indicates an imbalance in the matched sample and implies that estimated effects on entrepreneurial income are upwardly biased. The positive association may also be an indirect rather than a direct effect (i.e., group projects may have opened other livelihood opportunities for beneficiaries).

The result of the cost-benefit analysis is sobering. A comparison of the estimated cost of delivering the intervention in 2018 with the five-year stream of benefits based on the estimated effect of group treatment on entrepreneurial income yields a benefit-cost ratio of 0.56. This is worryingly low and portrays a program that is very costly to run while producing very modest benefits.

The regression results should be taken with caution, given the limitations of the design and analysis. These include a possible imbalance in pre-intervention outcomes, possible spillover effects, inability to control receipt of other livelihood assistance in 2018, possible endogenous program selection of target barangays, and possible participant self-selection into the program. Including the PMT score as a regressor possibly alleviates pre-intervention income imbalances. Spillover effects are arguably minimal or nil if the qualitative and quantitative findings are any indication. This study controls for measures of personality and entrepreneurial orientation in the regression analysis to clean up personality differences that may have resulted from self-selection. Participants were also possibly selected for the program based on past or present entrepreneurship. The finding (from Table 9) that a slightly larger proportion of treated households (by 6-percentage points) earn entrepreneurial income than comparison households possibly hints at this tendency. Selection on this characteristic would upwardly bias estimated effects for labor supply and entrepreneurial and sustenance income, which, based on the theory of change, could not have been directly affected by SLP group business activity.

As an additional robustness check, regressions were rerun, limiting the vector of controls to pre-intervention variables available in Listahanan 2. Appendix E, Table 1 shows the sample balance on these pre-intervention variables from Listahanan 2. Compared to untreated households, the proportion of treated households with a member who is a business operator and whose household head is a business operator is higher by 1.8-percentage points and 2.2-percentage points, respectively. Meanwhile, the proportion of treated households with a member who is a wage worker is lower by 3.9-percentage points compared to untreated households. These differences suggest that participant selection on current entrepreneurship or past entrepreneurial experience does occur. Regressions reported in Appendix E, Table 2 show that the direction, magnitude, and significance of the estimates are similar to those reported in the fifth section across all of the outcomes. These results help validate the estimates, despite not fixing the possible pre-intervention imbalance and selection bias.

Further, several factors affecting the success of SCF-financed business projects are absent from the quantitative analysis, such as the quality and timeliness of the intervention received by program participants and the market sizes in which business projects operate. Qualitative evidence suggests that beneficiaries operate in small markets with limited growth potential. For retail trade businesses, especially mom-and-pop or grocery stores, customers appear to consist mostly of low-income neighbors, and group members who are often short of cash, in the case of group projects.

It could also be argued that business projects need a longer time horizon than the 1.5 to 2-year observation period to thrive and result in higher household income. However, qualitative findings indicating modest profitability at best and a substantial business mortality rate suggest that positive and significant impacts are not necessarily more likely to be found with a longer observation period.

Despite weaknesses in the quantitative analysis, the qualitative findings point to serious issues in project implementation that lend support to the null impacts found in household income and expenditure. These include a substantial business closure rate, lack of participation among group members in business operation, lack of earning opportunities for group members, management issues, and low profitability.

The results (null impacts on final outcomes and positive impacts on an intermediate outcome, i.e., labor supply) hew closer to those from the microcredit literature than those from experimental studies on asset/cash transfers to microentrepreneurs or on poverty graduation programs. One reason for this could be the relatively smaller size of the SCF grant. SLP's SCF grant in 2018 (maximum of PHP 10,000) is about 8.3 percent of the estimated average annual household expenditure for the bottom three deciles in 2018. In comparison, asset transfers in the six graduation programs evaluated in Banerjee et al. (2015b), usually in the form of livestock, range from 8.4 percent to 38.5 percent of beneficiaries' baseline annual consumption (see Appendix F). Including the cost of the supporting livelihood interventions (e.g., consumption support, training, home visits), the direct cost of these programs range from 47 to 98 percent of baseline consumption. However, while the SCF grant is relatively smaller compared to graduation asset transfers, it is comparable to the capital grants studied in De Mel et al. (2008a) and Fafchamps et al. (2013), which resulted in positive effects on business profits.

Another reason could be that while SLP provides supporting interventions (capacity building and post-implementation monitoring) that make it somewhat akin to a graduation program, these interventions may be falling short in quality. Based on anecdotes, SLP program officers try to keep capacity-building sessions short (a day or half-day) and simple, as participants reportedly find it difficult to be attentive when kept away from their housework or economic activities for too long. This contrasts with the multiple days of training involved in the interventions evaluated by Blattman et al. (2016) and Bandiera et al. (2013) (5 days and 3–4 days, respectively). These programs also provide capacity building through regular visits to beneficiaries to offer business management or technical advice. While SLP offers similar monitoring services, the SLP monitoring officers' high caseloads likely affect service quality. The capacity of SLP's in-house staff to provide business training and advisory support also deserves closer scrutiny.

Possible service quality gaps make the MD-SCF arguably more akin to a capital transfer than a multifaceted livelihood program. But as revealed by evaluations of capital transfers to microentrepreneurs by De Mel et al. (2008a) and Fafchamps et al. (2013), the impact of a capital

drop tends to be lower for female entrepreneurs, those with less ability or education, and subsistence entrepreneurs. This result underscores the need for multifaceted business support in a program such as SLP, where MD participants are largely women from poor households who tend to have low education.

It is also possible that the limited program impacts are due to the very nature of the enterprises that beneficiaries engage in. Banerjee and Duflo (2010) argued that microcredit programs do not bring substantial improvement to their clients' lives because the enterprises they operate are small-scale and undifferentiated activities with low profitability, which describes the business projects that MD beneficiaries engaged in. Among group businesses, which can make larger initial investments by pooling members' SCF grants, many end up pursuing low-return activities such as retail trading. Businesses often also operate in local markets (e.g., neighborhoods), which provide limited growth potential.

Despite low returns, many poor households in developing countries continue to run an enterprise because it is the only alternative to unemployment, or because some members have time to spend on productive activities to supplement the household's income, no matter how small (Banerjee and Duflo 2010). The latter interpretation seems to be confirmed by the fact that, in the context of this study, entrepreneurial income on average only consists of 6 percent of treated households' income compared to 61 percent for wage income. Running larger-scale businesses in higher-return activities would demand specific skills and attitudes that SLP's target demographic appears to lack. Indeed, ability, motivation, and a competitive attitude are what De Mel et al. (2008b) found as the characteristics that distinguish own-account workers from larger entrepreneurs. Operating more successful businesses would also require time and attention—which many participants may be unable to devote because of housework—not to mention access to larger and more dynamic markets.

Policy Implications

This study's findings offer several policy insights. National-scale livelihood programs targeting the poor are likely to be costly, and their benefit-cost ratios may be low if business success is patchy and interventions result in only marginal improvements to household welfare. This would especially

be the case if funds are invested in small-scale and low-return activities typically operated by the poor. This is not to diminish the value of the assistance that livelihood programs extend to the poor since, for them, every little bit counts. However, many of these businesses are likely to remain small and not very profitable. Policymakers must weigh whether the marginal gains in household income that livelihood programs bring justify the high cost of running them.

Outcomes of livelihood programs could be improved with implementation changes. For instance, participants can be screened in terms of entrepreneurial experience and ability and subject business proposals to high standards of viability and growth potential. This ensures that funds are invested in people and projects with the best prospects of success. By supporting participants that require a relatively lighter push to become successful entrepreneurs, this selective strategy may also translate to lower program costs. However, adopting a more selective approach will ultimately mean reaching a smaller subset of the poor.

Outcomes could also be improved by ensuring that livelihood beneficiaries receive good quality support services, such as capacity building, mentoring, and technical assistance, especially for programs that target the poor, females, and those with low education. Encouraging results from graduation programs indicate that livelihood programs for the ultra poor are best provided in a package, complementing asset transfers with consumption support, savings encouragement, capacity building, coaching, and technical assistance. Policymakers can explore tailoring a graduation approach to different levels of poverty. In cases where graduation-like interventions are provided independently across different programs, policymakers may consider integrating them to form a coherent strategy.

Government agencies may be less cost-efficient in and capable of providing livelihood and support interventions compared to organizations that specialize in providing these services, such as NGOs and microfinance institutions. Instead of performing all aspects of the livelihood program, governments may consider partnering with such organizations in the delivery of support services, such as capacity building, business development, and mentoring.

Livelihood programs whose main clients are women must contend with the reality that housework constrains many of them from devoting their time to program activities or running their businesses. Thus, livelihood opportunities and program activities should be designed around this constraint without sacrificing quality.

Lastly, policymakers must be aware of the limitations of group-based livelihood interventions. Group businesses may not require a workforce beyond a few people and may be unable to distribute profits to members, at least in the short term. Consequently, compared to an individual business, a group project's impact on employment is more limited, and its impact on household income is less direct and may take more time to realize. A lack of direct and immediate material benefits may cause members to lose interest. Indeed, lack of interest and participation among members are some of the major organizational problems group projects face. Group businesses require motivated participants who subscribe to the mission of the organization. Thus, interventions that improve commitment and teamwork should be pursued.

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Appendix A. Outcome variables

Outcome	Definition/Construction of Variable	Reference
Number of hours worked per worker 15 years and above	Sum of number of hours worked in the reference week (seven days prior to interview) by all employed household members 15 years and above, divided by the number of employed members 15 years and above	Labor Force Survey of Philippine Statistics Authority (PSA)
Number of hours worked by the CCT grantee-spouse	Number of hours worked by the CCT grantee-spouse in the reference week (seven days prior to interview)	
Share of employed household members	Employed household members in the reference week divided by household members 15 years and above	
Share of household members in the labor force	Employed and unemployed household members in the reference week divided by household members 15 years and above	
CCT grantee-spouse is employed	CCT grantee-spouse either worked at least one hour during the reference week or did not work but had a job or business in the reference week	
CCT grantee-spouse is in the labor force	CCT grantee-spouse is either employed or unemployed in the reference week	
Household income	Sum of (1) wage income from members 10 years and above, (2) net income from entrepreneurial activities, (3) net receipts from sustenance activities, (4) income from other sources, (5) gifts received, and (6) imputed rentals from housing. Income from other sources is the sum of (1) cash receipts/assistance from sources abroad, (2) cash receipts/assistance from domestic sources, (3) rental income, (4) interest income, (5) dividend income, (6) pensions and social security benefits, and (7) wage income from members below 10 years and other sources of income not elsewhere classified.	Adapted from household income modules of Annual Poverty Indicators Survey (APIS) of PSA

Appendix A *(continued)*

Outcome	Definition/Construction of Variable	Reference
Wage income	Sum of wage incomes earned by all members 10 years and above during the reference year from all occupations. Wage income includes salaries, wages, allowances, salaries, bonuses, and honorariums paid in cash or in kind.	Adapted from household income modules of PSA APIS
Net income from entrepreneurial activities per capita	Sum of net incomes from the following entrepreneurial activities: (1) crop farming and gardening, (2) livestock and poultry raising, (3) fishing, (4) forestry and hunting, (5) retail and wholesale trade, (6) repair of motor vehicles, (7) manufacturing, (8) community, social, recreational, and personal services, (9) transport, storage, and communication services, (10) mining and quarrying, (11) construction services, and (12) unclassified entrepreneurial activities. Net income in each activity is constructed as the difference between gross income and total costs.	
Net receipts from sustenance activities per capita	Sum of net receipts from the following five activities: fishing and gathering sea products, logging and gathering of forest products, hunting and trapping, farming and gardening, and raising of livestock and poultry	
Entrepreneurial and sustenance income	Sum of entrepreneurial income and sustenance income	
Dividend income	Sum of (1) profits or dividends from SLP (if treated) and (2) dividends from non-SLP businesses or cooperatives	
Household expenditure per capita	Household expenditure in 2019 divided by household size in the reference week. Household expenditure is the sum of expenditure/consumption of the following groups: (1) food, (2) miscellaneous goods and services, (3) housing (e.g., rent, water, electricity, other fuels), (4) restaurants and hotels, (5) transport, (6) communication, (7) clothing and footwear, (8) furniture, appliances, equipment, and routine household maintenance, (9) health, (10) recreation and culture, (11) education, (12) special occasions, and (13) other expenditures (e.g., taxes, gifts to others).	Adapted from the household expenditure module of PSA APIS

Appendix A *(continued)*

Outcome	Definition/Construction of Variable	Reference
Food expenditure	Sum of (1) spending on food items bought in cash or on credit and (2) value of consumed food that was self-produced by the household or received as gifts	Adapted from the household expenditure module of PSA APIS
Education expenditure	Sum of tuition fees, education fees outside the formal school system, allowances for family members studying away from home, and other educational expenses (e.g., school uniform)	
Health expenditure	Health expenditure in 2019 divided by household size in the reference week. It includes expenditure for medical products, outpatient medical services, and hospital services.	
Clothing expenditure	Sum of expenditure on clothing and expenditure	
Furnishings and durables expenditure	Sum of expenditure on (1) furniture, furnishings, and carpets, (2) household textiles, (3) glassware, tableware, and utensils, (4) appliances, (5) repair of appliances, (6) transport equipment for household use, (7) household and gardening equipment and tools, (8) audiovisual, electronic, and communications equipment, and (9) musical instruments	
Household savings	Sum of savings of the following: (1) savings (contributions) in SLP association (if treated), (2) savings in bank, (3) savings in cooperative, (4) savings in savings and loan group, (5) savings kept at home, and (6) other savings	None
Capital investment	Sum of the amount spent to repair, purchase, or rent physical assets used for the household's entrepreneurial or sustenance activities	None
With capital investment	Household repaired, purchased, or rented physical assets used for the household's entrepreneurial or sustenance activities	None

CCT = conditional cash transfer; SLP = Sustainable Livelihood Program
Source: Authors' compilation

Appendix B. Weights

This appendix describes how weights used in the estimation were calculated. The weights (1) recover the target sample distribution by megaregion, as shown in Table 1, and (2) obtain a uniform distribution of city/municipal samples within megaregions.

The weight w_{ij} for municipality *i* in megaregion *j* is computed as

$$w_{ij} = \frac{\frac{s_j^{rt}}{k_j^r}}{\frac{n_{ij}^m}{n}} \qquad \text{(B.1)}$$

where

s_j^{rt} - target share of megaregion *j*

k_j^r - number of clusters (municipalities/cities) in megaregion *j*

n_{ij}^m - sample size in municipality *i* of megaregion *j*

N - total sample size.

The numerator in the equation (B.1) represents the target share of the sample from municipality *i* in megaregion *j*, while the denominator represents the actual share of the sample from municipality *i* in megaregion *j*.

Appendix C. Ex-post Minimum Detectable Effect Size Calculations

It is of interest to determine whether this study has sufficient power to detect meaningful differences in the outcomes of interest given the realized sample. Although a statistically insignificant estimate of the treatment effect on an outcome would indicate insufficient power on that outcome, it would be interesting to know the minimum effect size that the study would have detected on that outcome given sufficient power. It is also of interest to know how the MDES changed because of the sample size reduction. This study follows McKenzie and Ozier's (2019) advice to report ex-post MDES using the realized sample. They warned that using estimated effect sizes to estimate ex-post power can give misleading results. They suggest reporting the MDES instead, given the realized sample and acceptable power using control means and control standard deviations. Using survey data, the MDES was computed in the outcome variables at 80-percent power and 5-percent significant level, given the actual and planned sample sizes of 2,592 and 3,300. The Stata routine was used for a paired means test (power pairedmeans).[23] The routine does not have an option for clustered data. Thus, the estimated minimum effect sizes are likely to be larger than the ones computed.

Appendix C, Table 1 shows the estimated minimum detectable difference in treatment and comparison means across outcomes. The estimated minimum effect sizes for the realized sample size are 12–13 percent larger compared to the planned sample size. The minimum effect sizes for hours worked of 1.81 additional hours per worker and 2.09 additional hours for the CCT grantee-spouse are reasonable. For comparison, the mean number of hours worked in 2019 by self-employed females aged 40 and above was 24.4 hours per week (PSA 2020). Meanwhile, the minimum effect sizes for income per capita (PHP 1,379.4) and expenditure per capita (PHP 1,024) appear to be rather large. For a household with five members, these effect sizes, if positive, translate to an increase in annual income of PHP 6,897.2 and an increase in annual

[23] Power calculations in the pre-analysis plan use data from the third wave of the CCT impact evaluation. The Stata routine for a clustered randomized design (power twomeans, cluster) was used to obtain alternate effect size estimates.

expenditures of PHP 5,212.2. For perspective, PHP 6,897 is in the range of 3.1–6.1 percent of the average annual income of families in the bottom five income deciles in 2018.[24]

Table 1. Estimated minimum detectable effect size in outcomes of interest

Outcome Variable	Obs. = 2,592	Obs. = 3,300
Hours worked per worker per week	1.81	1.60
Hours worked per week by CCT grantee-spouse	2.09	1.85
Spouse in the labor force (%)	0.05	0.04
Spouse employed (%)	0.05	0.04
Share of employed HH members (%)	0.02	0.02
Share HH members in labor force (%)	0.02	0.02
Income per capita (PHP)	1,379.44	1,222.34
Wage income per capita (PHP)	1,306.28	1,157.51
Entrepreneurial income per capita (PHP)	304.55	269.87
Sustenance income per capita (PHP)	113.83	100.86
Entrepreneurial and sustenance income per capita (PHP)	359.68	318.72
Expenditure per capita (PHP)	1,042.44	923.72
Food expenditure per capita (PHP)	705.45	625.11
Health expenditure per capita (PHP)	18.14	16.07
Education expenditure per capita (PHP)	45.49	40.31
Clothing expenditure per capita (PHP)	26.58	23.55
Durables expenditure per capita (PHP)	13.67	12.11
Savings per capita (PHP)	110.09	97.55

Obs. = number of observations; CCT = conditional cash transfer; HH = household;
PHP = Philippine peso
Source: Authors' computations

[24] The average annual family incomes for the bottom five deciles in 2018 are PHP 113,455 in the first decile; PHP 144,336 in the second decile; PHP 168,161 in the third decile; PHP 197,297 in the fourth decile; and PHP 225,028 in the fifth decile (PSA 2019). Fernandez and Olfindo (2011) estimated that 72 percent of CCT beneficiary households belong to the bottom two income deciles, while 23 percent belong to the bottom third, fourth, and fifth income deciles.

Appendix D. Qualitative Survey Tables

Table 1. Distribution of business projects by initiation and industry

	Individual		Group		Total	
	Obs.	%	Obs.	%	Obs.	%
Business initiation						
Preexisting business	63	58.3	27	16.3	90	32.8
New business project	45	41.7	139	83.7	184	67.2
Total	108	100.0	166	100.0	274	100.0
Industry						
Computer rental and related services	0	0.0	1	0.6	1	0.4
Farming/gardening	25	23.1	0	0.0	25	9.1
Fishing/aquaculture	9	8.3	2	1.2	11	4.0
Food service	0	0.0	1	0.6	1	0.4
Livestock/poultry raising	20	18.5	9	5.4	29	10.6
Manufacturing (dressmaking)	0	0.0	1	0.6	1	0.4
Manufacturing (food products)	0	0.0	1	0.6	1	0.4
Metalworks	1	0.9	0	0.0	1	0.4
Retail (agricultural supplies)	0	0.0	14	8.4	14	5.1
Retail (food products)	31	28.7	55	33.1	86	31.4
Retail (garments)	1	0.9	0	0.0	1	0.4
Retail (general merchandise/*sari-sari* store)	18	16.7	74	44.6	92	33.6
Retail (motor vehicle parts)	0	0.0	1	0.6	1	0.4
Retail (online selling)	3	2.8	3	1.8	6	2.2
Retail (rice and agricultural supplies)	0	0.0	1	0.6	1	0.4
Retail (unclassified)	0	0.0	1	0.6	1	0.4
Transportation (tricycle)	0	0.0	1	0.6	1	0.4
Water refilling station	0	0.0	1	0.6	1	0.4
Total	108	100.0	166	100.0	274	100.0

Obs. = number of observations
Source: Authors' computations

Table 2. SCF received per household beneficiary

	Obs.	Mean (PHP)	Median (PHP)
Business type			
Individual	108	9,958	10,000
Group	166	9,507	10,000
Total	274	9,685	10,000
Business initiation			
Preexisting business	90	9,433	10,000
New business project	184	9,808	10,000
Total	274	9,685	10,000

SCF = Seed Capital Fund; obs. = number of observations; PHP = Philippine peso
Note: SCF per beneficiary for group projects is obtained by dividing the total amount received by the number of group members at the start of the project.
Source: Authors' computations

Table 3. Utilization of SCF by expenditure item

	Individual (Mean, %)	Group (Mean, %)
Business expenses for SLP business project	64.2	46.4
Purchase of inventories, raw materials, and supplies	55.6	31.2
Purchase of equipment, machines, and tools	7.0	8.8
Construction of store or facility	0.8	5.0
Repair or renovation of store or facility	0.7	1.3
Business expenses for other businesses	2.4	2.3
Purchase of inventories, raw materials, and supplies	1.7	1.3
Purchase of equipment, machines, and tools	0.5	0.5
Construction or repair/renovation of store or facility	0.3	0.5
Household expenses	9.1	No data
Purchase of household durable goods	0.7	No data
Purchase of food for home consumption	4.7	No data
Education expenditure	1.0	No data
Health and medical expenditures	0.2	No data
Repairs to the house	1.3	No data
Repayment of loan	0.6	No data
Savings	0.6	No data
Other expenses	24.2	51.3
Working capital	No data	20.2
Unspent funds	No data	27.7
Other expenses	No data	3.4
Total	100.0	100.0

SCF = Seed Capital Fund; SLP = Sustainable Livelihood Program
Source: Authors' computations

Table 4. SCF repayment/recovery status

	Obs.	Fully Repaid/ Recovered (%)	Partially Repaid/ Recovered (%)	None Repaid/ Recovered (%)
Business type				
Individual	108	0.0	62.0	38.0
Group	166	6.6	57.2	36.1
Total	274	4.0	59.1	36.9
Business initiation				
Preexisting business	90	3.3	64.4	32.2
New business project	184	4.3	56.5	39.1
Total	274	4.0	59.1	36.9

SCF = Seed Capital Fund; obs. = number of observations
Source: Authors' computations

Table 5. Business survival and lifespan

	Obs.	Survival Rate (%)	Months since Business Started (Mean)	Months since SCF was Released (Mean)
Current status of business				
Still operating	172	100.0	24.7	23.2
Closed	102	0.0	11.1	13.1
Total	274	62.8	20.2	19.6
Business type				
Individual	108	49.1	21.4	16.9
Group	166	71.7	19.7	21.5
Total	274	62.8	20.2	19.6
Business initiation				
Preexisting business	90	65.6	23.7	18.3
New business project	184	61.4	18.7	20.3
Total	274	62.8	20.2	19.6
Industry				
Computer rental and related services	1	100.0	2.0	25.0
Farming/gardening	25	76.0	21.4	18.6
Fishing/aquaculture	11	90.9	19.4	21.5
Food service	1	0.0	12.0	14.0

Table 5 *(continued)*

	Obs.	Survival Rate (%)	Months since Business Started (Mean)	Months since SCF was Released (Mean)
Livestock/poultry raising	29	48.3	17.3	15.1
Manufacturing (dressmaking)	1	100.0	19.0	21.0
Manufacturing (food products)	1	100.0	9.0	22.0
Metalworks	1	100.0	20.0	20.0
Retail (agricultural supplies)	14	57.1	17.2	17.6
Retail (food products)	86	60.5	23.3	20.3
Retail (garments)	1	100.0	20.0	20.0
Retail (general merchandise/ *sari-sari* store)	92	64.1	19.7	20.5
Retail (motor vehicle parts)	1	100.0	25.0	25.0
Retail (online selling)	6	50.0	20.0	21.3
Retail (rice and agricultural supplies)	1	0.0	5.0	14.0
Retail (unclassified)	1	0.0	No data	No data
Transportation (tricycle)	1	100.0	11.0	23.0
Water refilling station	1	0.0	No data	No data
Total	274	62.8	20.2	19.6

Obs. = number of observations; SCF = Seed Capital Fund
Note: Survival rate is computed as the proportion of business projects still operating at the time of the interview among all business projects.
Source: Authors' computations

Table 6. Main reason for closing the business project

	Individual		Group		Total	
	Obs.	%	Obs.	%	Obs.	%
Business was not making money	34	61.8	14	29.8	48	47.1
Business was affected by natural disaster	4	7.3	4	8.5	8	7.8
No raw materials/inputs	1	1.8	4	8.5	5	4.9
Operator needed to devote time to household/family duties	2	3.6	0	0.0	2	2.0
Operator relocated	1	1.8	0	0.0	1	1.0
Fire/robbery	0	0.0	2	4.3	2	2.0
Group members not contributing to operate the business	0	0.0	13	27.7	13	12.7
Financial management issues	0	0.0	3	6.4	3	2.9
Relocation	0	0.0	1	2.1	1	1.0

Table 6 *(continued)*

	Individual		Group		Total	
	Obs.	%	Obs.	%	Obs.	%
Members not paying loans/debts	0	0.0	2	4.3	2	2.0
No one to attend to the business	0	0.0	1	2.1	1	1.0
No permit	0	0.0	1	2.1	1	1.0
Vegetables have been harvested	0	0.0	1	2.1	1	1.0
Members struggling to operate the business	0	0.0	1	2.1	1	1.0
Refused	13	23.6	0	0.0	13	12.7
Total	55	100.0	47	100.0	102	100.0

Obs. = number of observations
Source: Authors' computations

Table 7. Date of closure of nonsurviving business projects

Date of Closure	Individual		Group		Total	
	Obs.	%	Obs.	%	Obs.	%
Within 2018	20	35.1	12	25.5	32	30.8
Within 2019	19	33.3	27	57.4	46	44.2
February 2020	12	21.1	0	0.0	12	11.5
March 2020	4	7.0	0	0.0	4	3.8
No data	2	3.5	8	17.0	10	9.6
Total	57	100.0	47	100.0	104	100.0

Obs. = number of observations
Source: Authors' computations

Table 8. Status of SLPA

Status of SLPA	Obs.	%
Members with individual business		
Active	8	24.2
Inactive	2	6.1
Dissolved	23	69.7
Total	33	100.0
Members with group business		
Active	119	71.7
Inactive	18	10.8
Dissolved	29	17.5
Total	166	100.0

SLPA = Sustainable Livelihood Program Association; obs. = number of observations
Note: Observations are on SLPAs rather than individual respondents.
Source: Authors' computations

Table 9. Main reason why SLPA is inactive or dissolved

	Inactive		Dissolved		Total	
	Obs.	%	Obs.	%	Obs.	%
Main reason why SLPA is inactive or dissolved (individual)*						
Members' lack of interest in the SLPA	2	5.1	35	76.1	37	43.5
Members' lack of time for the SLPA	4	10.3	0	0.0	4	4.7
Conflict among members	0	0.0	11	23.9	11	12.9
No more SLPA meetings/activities	25	64.1	0	0.0	25	29.4
SLPA president died	1	2.6	0	0.0	1	1.2
Do not know	7	17.9	0	0.0	7	8.2
Total	39	100.0	46	100.0	85	100.0
Main reason why SLPA is inactive or dissolved (group)**						
Members' lack of interest in the SLPA	8	44.4	5	17.2	13	27.7
Members' lack of time for the SLPA	2	11.1	9	31.0	11	23.4
Conflict among members	4	22.2	6	20.7	10	21.3
Members not paying loans/debts	1	5.6	0	0.0	1	2.1
Problems with profit/income	1	5.6	5	17.2	6	12.8
Robbery	1	5.6	0	0.0	1	2.1
Location transfer	1	5.6	0	0.0	1	2.1
Financial management	0	0.0	4	13.8	4	8.5
Total	18	100.0	29	100.0	47	100.0

SLPA = Sustainable Livelihood Program Association; obs. = number of observations
* Observations are on individual members.
** Observations are on SLPAs.
Source: Authors' computations

Table 10. Work, wage income, and dividends from group businesses

	Obs.	Worked (%)	Worked with Compensation (%)	Mean Compensation (PHP)	Distributed Dividends (%)	Mean Dividends (PHP)
Computer rental and related services	3	33.3	0.0		0.0	
Fishing/aquaculture	12	41.7	0.0		8.3	
Food service	2	50.0	0.0		0.0	
Livestock/poultry raising	46	60.9	6.5	4,800.0	2.2	1,700.0
Manufacturing (dressmaking)	10	40.0	20.0	250.0	20.0	209.0
Manufacturing (food products)	10	20.0	0.0		0.0	
Retail (agricultural supplies)	102	36.3	2.9	10,000.0	2.0	4,000.0
Retail (food products)	264	51.1	5.3	932.3	6.8	1,926.1
Retail (general merchandise/*sari-sari* store)	618	22.7	2.6	3,135.9	6.1	1,716.6
Retail (motor vehicle parts)	5	20.0	0.0		0.0	
Retail (online selling)	12	66.7	0.0		16.7	700.0
Retail (rice and agricultural supplies)	7	0.0	0.0		0.0	
Retail (unclassified)	2	0.0	0.0		0.0	
Transportation (tricycle)	4	0.0	0.0		0.0	
Water refilling station	10	10.0	0.0		10.0	2,500.0
Total	1107	32.8	3.4	2,845.4	5.9	1,804.9

Obs. = number of observations; PHP = Philippine peso
Source: Authors' computations

Table 11. Reasons why groups are not distributing dividends to members

	Obs.	%
SLPA still paying off principal	449	43.5
Group struggling to turn a profit	184	17.8
Profit to be distributed after 2–3 years	50	4.8
Losses due to calamities	12	1.2
Do not know	336	32.6
Total	1,031	100.0

Obs. = number of observations; SLPA = Sustainable Livelihood Program Association
Source: Authors' computations

Table 12. Group business net income per member for 2019

	Obs.	Mean (PHP)	Median (PHP)
Computer rental and related services	1	-235	-235
Fishing/aquaculture	2	-842	-842
Foodservice	1	No data	No data
Livestock/poultry raising	9	-106	1,719
Manufacturing (dressmaking)	1	-31,799	-31,799
Manufacturing (food products)	1	0	0
Retail (agricultural supplies)	14	-2,033	-6
Retail (food products)	55	625	400
Retail (general merchandise/*sari-sari* store)	74	6,349	356
Retail (motor vehicle parts)	1	967	967
Retail (online selling)	3	4,115	4,115
Retail (rice and agricultural supplies)	1	No data	No data
Retail (unclassified)	1	-395	-395
Transportation (tricycle)	1	-2,343	-2,343
Water refilling station	1	No data	No data
Total	166	2,748	292

Obs. = number of observations; PHP = Philippine peso
Source: Authors' computations

Appendix E. Additional Household and Regression Tables

Table 1. Balance on pre-intervention household characteristics (Listahanan 2)

	Treatment			Comparison			
	Obs.	Mean	SD	Obs.	Mean	SD	Diff.
Household size	1,296	6	2	1,296	6	2	-0.043
Received microcredit (%)	1,296	0.02	0.14	1,296	0.02	0.13	0.002
Received livelihood training (%)	1,296	0	0	1,296	0	0	0.002
Received self-employment assistance (%)	1,296	0.00	0.06	1,296	0.00	0.07	-0.001
With wage worker member (%)	1,296	0.67	0.47	1,296	0.71	0.45	-0.039*
With self-employed member (%)	1,296	0.34	0.47	1,296	0.30	0.46	0.038
With operator member (%)	1,296	0.06	0.24	1,296	0.04	0.20	0.018*
With paid family worker member (%)	1,296	0.04	0.19	1,296	0.04	0.19	-0.001
With unpaid family worker member (%)	1,296	0.07	0.26	1,296	0.07	0.26	-0.001
Head is employed (%)	1,296	0.96	0.21	1,296	0.95	0.22	0.005
Spouse is employed (%)	1,296	0.31	0.46	1,296	0.30	0.46	0.011
Head is a wage worker (%)	1,296	0.55	0.50	1,296	0.58	0.49	-0.035
Spouse is a wage worker (%)	1,296	0.15	0.36	1,296	0.18	0.38	-0.025
Head is self-employed (%)	1,296	0.27	0.44	1,296	0.24	0.43	0.026
Spouse is self-employed (%)	1,296	0.11	0.31	1,296	0.09	0.28	0.025
Head is business operator (%)	1,296	0.06	0.23	1,296	0.03	0.18	0.022**
Spouse is business operator (%)	1,296	0.01	0.10	1,296	0.01	0.09	0.002
Number of radios	1,296	0.37	0.49	1,296	0.34	0.48	0.025
Number of televisions	1,296	0.57	0.50	1,296	0.60	0.50	-0.025
Number of video players	1,296	0.29	0.46	1,296	0.27	0.46	0.022
Number of stereos	1,296	0.13	0.36	1,296	0.12	0.36	0.008
Number of refrigerators	1,296	0.08	0.27	1,296	0.08	0.28	-0.002
Number of washing machines	1,296	0.06	0.24	1,296	0.07	0.27	-0.011
Number of air conditioners	1,296	0.00	0.06	1,296	0.01	0.11	-0.004
Number of *sala* sets	1,296	0.07	0.26	1,296	0.08	0.28	-0.006
Number of dining sets	1,296	0.04	0.28	1,296	0.04	0.21	-0.003
Number of cars/jeeps	1,296	0.01	0.11	1,296	0.02	0.17	-0.007
Number of phones	1,296	1.01	0.96	1,296	1.02	0.93	-0.012
Number of personal computers	1,296	0.01	0.11	1,296	0.02	0.18	-0.012**
Number of microwaves	1,296	0.01	0.11	1,296	0.02	0.15	-0.003
Number of motorcycles	1,296	0.24	0.47	1,296	0.20	0.43	0.046**

Obs. = number of observations; SD = standard deviation; diff. = difference
Source: Authors' computations

Table 2. Impacts on outcomes

Outcome	Model	Treatment	Estimate	SE	*p*-value	Sig.	*q*-value	Sig.	Obs.
Hours worked per worker	(1)	Treat	1.668	0.728	0.028	**	0.179		2425
	(2)	Treat	1.661	0.742	0.032	**	0.536		2210
	(3)	Treat	2.020	1.860	0.284		0.903		2425
		Treat x Group	-0.382	1.805	0.833		1		2425
Hours worked by CCT grantee-spouse	(1)	Treat	2.239	0.891	0.016	**	0.179		2592
	(2)	Treat	1.458	0.927	0.125		0.901		2372
	(3)	Treat	10.845	2.411	0.000	***	0.001	***	2592
		Treat x Group	-9.301	2.400	0.000	***	0.003	***	2592
Share of members in the labor force (%)	(1)	Treat	0.007	0.009	0.446		1		2591
	(2)	Treat	0.001	0.009	0.955		1		2371
	(3)	Treat	0.090	0.035	0.013	**	0.053	*	2591
		Treat x Group	-0.090	0.035	0.014	**	0.053	*	2591
Share of employed members (%)	(1)	Treat	0.007	0.009	0.417		1		2591
	(2)	Treat	0.002	0.009	0.850		1		2371
	(3)	Treat	0.079	0.024	0.002	***	0.012	**	2591
		Treat x Group	-0.078	0.027	0.006	***	0.028	**	2591

Table 2 *(continued)*

Outcome	Model	Treatment	Estimate	SE	*p*-value	Sig.	*q*-value	Sig.	Obs.
CCT grantee-spouse is in the labor force (%)	(1)	Treat	0.026	0.026	0.320		0.871		2096
	(2)	Treat	-0.001	0.025	0.962		1		1899
	(3)	Treat	0.263	0.062	0.000	***	0.001	***	2096
		Treat x Group	-0.259	0.062	0.000	***	0.001	***	2096
CCT grantee-spouse is employed (%)	(1)	Treat	0.015	0.024	0.523		1		2096
	(2)	Treat	-0.010	0.025	0.685		1		1899
	(3)	Treat	0.239	0.055	0.000	***	0.001	***	2096
		Treat x Group	-0.245	0.058	0.000	***	0.001	***	2096
Income per capita (PHP)	(1)	Treat	135.135	446.733	0.764		1		2592
	(2)	Treat	110.671	473.059	0.816		1		2372
	(3)	Treat	813.878	1753.898	0.645		1		2592
		Treat x Group	-733.528	1790.187	0.684		1		2592
Wage income per capita (PHP)	(1)	Treat	-26.250	524.676	0.960		1		2592
	(2)	Treat	-43.093	569.367	0.940		1		2372
	(3)	Treat	765.309	1099.831	0.491		1		2592
		Treat x Group	-855.450	1176.649	0.472		1		2592
Entrepreneurial income per capita (PHP)	(1)	Treat	192.617	120.408	0.118		0.559		2592
	(2)	Treat	162.792	118.705	0.179		1		2372
	(3)	Treat	614.915	540.292	0.262		0.903		2592
		Treat x Group	-456.385	543.126	0.406		1		2592

Table 2 *(continued)*

Outcome	Model	Treatment	Estimate	SE	*p*-value	Sig.	*q*-value	Sig.	Obs.
Sustenance income per capita (PHP)	(1)	Treat	77.559	48.689	0.119		0.559		2592
	(2)	Treat	89.020	53.404	0.104		0.901		2372
	(3)	Treat	-140.499	148.562	0.350		1		2592
		Treat x Group	235.658	166.623	0.165		0.724		2592
Entrepreneurial and sustenance income per capita (PHP)	(1)	Treat	382.127	164.510	0.026	**	0.179		2592
	(2)	Treat	379.937	161.577	0.024	**	0.536		2372
	(3)	Treat	279.299	659.644	0.674		1		2592
		Treat x Group	111.128	645.780	0.864		1		2592
Dividends income per capita (PHP)	(1)	Treat	9.562	3.822	0.017	**	0.179		2592
	(2)	Treat	6.467	3.201	0.051	*	0.536		2372
	(3)	Treat	60.930	34.355	0.084	*	0.352		2592
		Treat x Group	-55.515	35.495	0.126		0.531		2592
Expenditure per capita (PHP)	(1)	Treat	-349.149	589.847	0.557		1		2592
	(2)	Treat	-595.182	601.387	0.329		1		2372
	(3)	Treat	-20.255	2581.442	0.994		1		2592
		Treat x Group	-355.440	2754.100	0.898		1		2592

Table 2 *(continued)*

Outcome	Model	Treatment	Estimate	SE	*p*-value	Sig.	*q*-value	Sig.	Obs.
Food expenditure per capita (PHP)	(1)	Treat	-310.669	372.018	0.409		1		2592
	(2)	Treat	-426.834	386.766	0.277		1		2372
	(3)	Treat	-74.334	1422.397	0.959		1		2592
		Treat x Group	-255.410	1507.506	0.866		1		2592
Health expenditure per capita (PHP)	(1)	Treat	7.340	7.187	0.314		0.871		2592
	(2)	Treat	3.835	7.518	0.613		1		2372
	(3)	Treat	42.988	33.919	0.213		0.834		2592
		Treat x Group	-38.525	37.542	0.311		0.903		2592
Education expenditure per capita (PHP)	(1)	Treat	3.697	20.869	0.860		1		2592
	(2)	Treat	2.697	22.280	0.904		1		2372
	(3)	Treat	-26.434	55.852	0.639		1		2592
		Treat x Group	32.562	61.893	0.602		1		2592
Clothing expenditure per capita (PHP)	(1)	Treat	-7.433	13.110	0.574		1		2592
	(2)	Treat	-12.626	13.093	0.341		1		2372
	(3)	Treat	31.340	42.857	0.469		1		2592
		Treat x Group	-41.902	40.342	0.306		0.903		2592
Furnishings and durables expenditure per capita (PHP)	(1)	Treat	2.245	5.347	0.677		1		2592
	(2)	Treat	1.041	5.603	0.854		1		2372
	(3)	Treat	-4.711	19.837	0.814		1		2592
		Treat x Group	7.518	20.871	0.721		1		2592

Table 2 *(continued)*

Outcome	Model	Treatment	Estimate	SE	*p*-value	Sig.	*q*-value	Sig.	Obs.
Savings per capita (PHP)	(1)	Treat	56.576	47.012	0.236		0.871		2588
	(2)	Treat	52.539	51.301	0.313		1		2368
	(3)	Treat	123.090	115.289	0.292		0.903		2588
		Treat x Group	-71.893	128.322	0.579		1		2588
Borrowings per capita (PHP)	(1)	Treat	37.826	72.506	0.605		1		2591
	(2)	Treat	6.858	72.979	0.926		1		2371
	(3)	Treat	461.144	358.787	0.206		0.834		2591
		Treat x Group	-457.491	367.152	0.220		0.834		2591
Capital stock spending per capita (PHP)	(1)	Treat	14.939	12.709	0.247		0.871		2592
	(2)	Treat	16.927	13.656	0.223		1		2372
	(3)	Treat	18.279	36.941	0.624		1		2592
		Treat x Group	-3.610	37.145	0.923		1		2592
With capital spending (%)	(1)	Treat	0.015	0.014	0.286		0.871		999
	(2)	Treat	0.015	0.016	0.362		1		871
	(3)	Treat	0.024	0.051	0.641		1		999
		Treat x Group	-0.010	0.057	0.860		1		999

SE = standard error; sig. = statistical significance; obs. = number of observations; CCT = conditional cash transfer; PHP = Philippine peso
* indicates statistical significance at 1-percent level.
** indicates statistical significance at 5-percent level.
*** indicates statistical significance at 10-percent level.
Note: Appendix E, Table 1 variables have been used as control variables.
Source: Authors' computations

Appendix F. Heterogeneity Analysis

To further analyze the heterogenous treatment effects on key outcomes along geographic lines, equation (1) was estimated with an interaction between treatment, business type, and region. Appendix F, Table 1 presents the estimated effects on key outcomes for each of the seven resulting subgroups. Results show that within subgroups, causal connections between outcomes are broken by estimates that are either statistically insignificant or statistically significant but negative.

- In NCR, individual business treatment is associated with CCT grantee-spouse working more hours and higher household expenditure. However, its association with household income, which bridges the labor and expenditure outcomes, is statistically insignificant.
- In Region IV-B, both group and individual treatments are associated with positive labor outcomes. Group treatments are associated with greater labor supply and labor force participation and employment by CCT grantee-spouses, while individual treatments are associated with greater labor supply only. However, both treatments are associated with lower household expenditure, lower household income, and lower wage income (although receipt of individual and group business treatments is linked with higher entrepreneurial income and higher entrepreneurial and sustenance income, respectively).
- In Region VI, individual business treatment is associated with positive labor outcomes (i.e., labor supply, participation, and employment) and higher income, but its relationship to expenditure is negative and insignificant. On the other hand, group business treatment is associated with greater household income and entrepreneurial income, but its association with labor outcomes, though positive, is insignificant, while its association with household expenditure is negative, albeit insignificant.
- In Region X, although group business treatment is associated with higher household expenditure, it is also associated with a lower probability of labor force participation and employment among CCT grantee-spouses and lower entrepreneurial income.

- Finally, in Region XII, recipients of group business treatment are not significantly different from untreated households in any of the outcomes.

Overall, receipt of SCF is associated with a higher labor supply of CCT grantee-spouses in four of the seven subgroups—the most for any outcome. Treated households received individual business treatment in three of these subgroups (NCR, Region IV-B, and Region VI) and group treatment in only one subgroup (Region IV-B).

The plausibility of attributing the positive association between treatment and labor supply to the SLP-financed business in these four subgroups was examined. Appendix F, Table 2 shows the percentage of treated households whose SLP business was still operating by region and business type. Meanwhile, Appendix F, Figure 1 illustrates the average number of hours worked by CCT grantee-spouses by region, business type, and business status (operating or closed). In Region VI, all individually managed SLP business projects were still operating, which could explain the positive effects found on labor supply. Although less than half of individual business projects survived in NCR (37%) and Region IV-B (44.7%), the average number of hours worked by CCT grantee-spouses whose individual business projects were still operating exceeded those of their counterparts whose individual businesses have closed. This could suggest that in these regions, time spent on the surviving individual businesses added to the total time that CCT grantee-spouses spent working. Meanwhile, although most group treatment households in Region IV-B (97.7%) have surviving group businesses, CCT grantee-spouses whose group businesses survived worked for fewer hours on average than those whose group businesses have folded. Moreover, 72.2 percent of group treatment beneficiaries with a surviving group business in the region did not render work for the business in 2019. Thus, the positive difference in labor supply among group treatment recipients in Region IV-B cannot be confidently ascribed to the SLP-financed business.

Table 1. Heterogenous treatment effects by region and business management type

		Hours Worked	CCT Grantee-Spouse is in the Labor Force	CCT Grantee-Spouse is Employed	Household Income per Capita	Wage Income per Capita	Entrepreneurial Income per Capita	Entrepreneurial and Sustenance Income per Capita	Household Expenditure per Capita	Food Expenditure per Capita
NCR-Individual	b	6.26**	0.14	0.15	256.26	-344.72	378.43	45.24	5837.63***	3562.99***
	SE	-2.92	-0.17	-0.17	-495.92	-3408.58	-1373.59	-1837.5	-370.51	-260.98
	p-value	0.039	0.39	0.37	0.61	0.92	0.784	0.98	0	0
	q-value	0.132	0.59	0.59	0.71	0.88	0.884	0.938	0.001	0.001
IV-B-Individual	B	9.70***	0.23***	0.19***	-5082.68***	-1203.65**	282.77***	-88.89	-2131.23***	-1851.67***
	SE	-0.82	-0.02	-0.02	-624.38	-549.69	-87.72	-134.38	-446.75	-267.07
	p-value	0	0	0	0	0.04	0.003	0.512	0	0
	q-value	0.001	0	0	0	0.12	0.013	0.687	0.001	0.001
IV-B-Group	B	6.06**	0.03	0.03	-1956.04***	-3216.30***	864.1	1299.11*	-1874.16*	-756.48
	SE	-2.53	-0.06	-0.06	-604.63	-889.56	-608.34	-732.21	-945.32	-524.20
	p-value	0.022	0.68	0.66	0	0	0.164	0.084	0.055	0.157
	q-value	0.08	0.77	0.73	0.01	0.01	0.351	0.23	0.178	0.34
VI-Individual	b	12.86***	0.33***	0.27***	4795.66***	4029.22***	650.71	134.33	-2099.04	-1548.03
	SE	-4.03	-0.05	-0.02	-709.18	-1087.01	-434.84	-136.67	-2651.93	-1359.81
	p-value	0.003	0	0	0	0	0.143	0.332	0.434	0.262
	q-value	0.014	0	0	0	0.01	0.34	0.53	0.621	0.459

Table 1 *(continued)*

		Hours Worked	CCT Grantee-Spouse is in the Labor Force	CCT Grantee-Spouse is Employed	Household Income per Capita	Wage Income per Capita	Entrepreneurial Income per Capita	Entrepreneurial and Sustenance Income per Capita	Household Expenditure per Capita	Food Expenditure per Capita
VI-Group	b	1.51	0.02	0.01	1363.10*	860.93	180.92**	542.89***	-664.44	-521.69
	SE	-1.3	-0.03	-0.03	-745.39	-894.29	-80.38	-171.52	-973.4	-612.73
	p-value	0.254	0.59	0.85	0.08	0.34	0.03	0.003	0.499	0.4
	q-value	0.449	0.71	0.88	0.23	0.55	0.11	0.014	0.667	0.601
X-Group	b	-0.93	-0.07*	-0.10**	-1048.45	-94.68	-334.31**	-329.47**	988.51*	620.84
	SE	-1.44	-0.04	-0.04	-693.32	-879.46	-160.79	-124.7	-554.61	-469.74
	p-value	0.521	0.09	0.01	0.14	0.92	0.044	0.012	0.083	0.194
	q-value	0.695	0.23	0.06	0.34	0.88	0.148	0.048	0.23	0.377
XII-Group	b	-0.32	-0.09	-0.08	156.1	-433.87	133.26	151.39	-73.26	-114.84
	SE	-1.52	-0.08	-0.08	-1163.01	-1154.24	-118.04	-135.35	-905.62	-615.38
	p-value	0.836	0.24	0.33	0.89	0.71	0.266	0.27	0.936	0.853
	q-value	0.884	0.44	0.53	0.88	0.79	0.461	0.464	0.884	0.884
	Obs	534	2042	2042	2534	2534	2534	2534	2534	2534

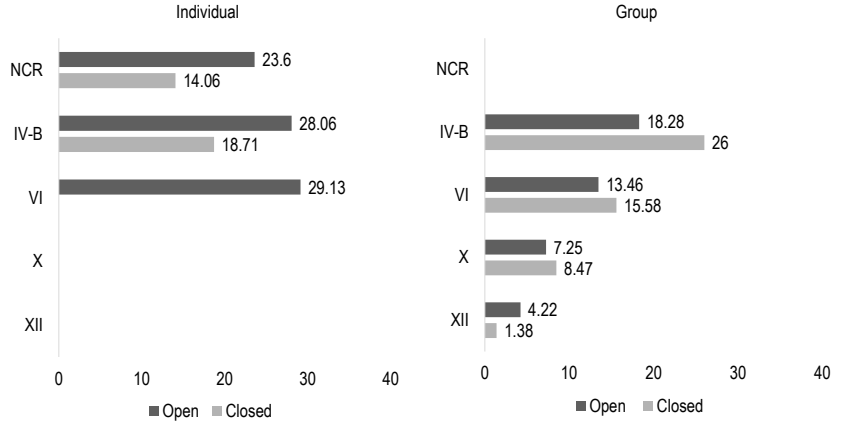
CCT = conditional cash transfer; NCR = National Capital Region; SE = standard error; obs. = number of observations
* indicates statistical significance at 1-percent level.
** indicates statistical significance at 5-percent level.
*** indicates statistical significance at 10-percent level.
Note: There are no group businesses in the NCR subsample and no individually managed businesses in the Regions X and XII subsamples.
Source: Authors' computations

Table 2. Share of treated households whose SLP business was still operating

	Individual		Group	
Region	**Obs.**	**%**	**Obs.**	**%**
NCR	54	37.0	0	-
IV-B	38	44.7	220	97.7
VI	16	100.0	318	54.7
X	0	-	320	81.3
XII	0	-	262	76.7

SLP = Sustainable Livelihood Program; obs. = number of observations; NCR = National Capital Region
Note: There are no group businesses in the NCR subsample and no individually managed businesses in the Regions X and XII subsamples.
Source: Authors' computations

Figure 1. Mean number of hours worked by CCT grantee-spouses by region, business management type, and business status



CCT = conditional cash transfer; NCR = National Capital Region
Source: Authors' computations

Appendix G. Graduation program asset transfers versus SLP MD-SCF

A. Graduation programs evaluated in Banerjee et al. (2015b)

Country/ Evaluation	Estimated Annual Consumption at Baseline (2014 USD PPP)	Asset Transfer Value (2014 USD PPP)	Size of Asset Transfer as % of Mean Baseline Annual Consumption
Ethiopia	3,185.6	1,227.9	38.5
Ghana	5,401.3	451.4	8.4
Honduras	3,264.8	538.9	16.5
India	1,895.1	437.3	23.1
Pakistan	10,004.9	1,043.3	10.4
Peru	6,206.3	854	13.8

B. SLP MD-SCF

	Estimated Mean Annual Expenditure for Households in the Bottom Three Income Deciles* (2018 PHP)	2018 SCF Value (PHP)	Size of Asset Transfer as % of 2018 Household Expenditure
MD-SCF (Philippines)	120,992.58	10,000	8.3

SLP = Sustainable Livelihood Program; MD = Microenterprise Development; SCF = Seed Capital Fund; USD = United States dollar; PPP = purchasing power parity; PHP = Philippine peso
* Derived from half-year estimate of average expenditure for the bottom 30 percent of households from the 2017 Annual Poverty and Indicators Survey, multiplied by 2 and inflated by the Consumer Price Index to 2018 prices.
Sources: Banerjee et al. (2015b) and PSA (2018)

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This study uses a matching design to evaluate the impacts of microenterprise assistance provided by the Department of Social Welfare and Development's Sustainable Livelihood Program to beneficiaries of the *Pantawid Pamilyang Pilipino* Program, the Philippine government's conditional cash transfer program. The evaluation focuses on the Seed Capital Fund, a grant worth up to PHP 10,000 per household that can be used as startup or additional capital for a microenterprise run individually or in a group. Most of the program beneficiaries are women. The study finds that treatment is associated with higher supply of labor hours among household heads' spouses. However, the intervention has no statistically significant effects on household income, expenditure, savings, or capital expenditure. Qualitative findings on business project implementation point to serious issues which support the null estimates. These include a substantial business closure rate, lack of participation among group members in business operation, lack of earning opportunities for group members, management issues, and low profitability. Moreover, the program's benefit-cost ratio is estimated to be substantially less than unity. Governments running similar livelihood programs should weigh whether the modest welfare gains they generate justify the high cost of running them.

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