

# COVID-19 Lockdown and Collective Activities: Evidence from the World's Largest Self-Help Group Program

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## Abstract

The National Rural Livelihoods Mission (NRLM) of India is the world's largest livelihoods program with approximately 80 million women mobilized into self-help groups (SHGs). SHGs under the NRLM engage in regular savings, and over time get connected to the formal banking system. Using monthly block-level administrative data from 2018 to mid-2020, we estimate the impact of the COVID-19-induced nationwide lockdown on savings mobilized by SHGs using an event-study and difference-in-differences design. We find that monthly savings mobilized by SHGs declined by 85% between March and July of 2020, with higher declines in areas with more stringent lockdowns. Additionally, disbursements of resources under vulnerability reduction and other community investment funds were associated with a lower decline in savings. Data from longitudinal phone surveys in six states indicate a 30% decline in consumption and a 26 percentage-point decline in work opportunities for both SHG and non-SHG households during this time. Although SHG households had lower consumption pre-pandemic compared to non-SHG households, both groups were equally impacted by the lockdown, in terms of consumption and income losses. While SHG membership was not associated with resilience against food insecurity during the lockdown, households that received assistance from SHGs in procuring food grain or through community kitchens reported significantly lower rates of food insecurity than households that did not receive assistance.

## I. Introduction

COVID-19 and the associated policy responses have had severe economic effects the world over, especially on the lives of women. In India, the National Government enforced a nationwide lockdown on March 25, 2020, which was gradually lifted after May 2020. While health implications of the pandemic continued and amplified in 2021, the Government avoided reinforcing the nationwide lockdown given its devastating impact on the economy, and especially on the lives of the economically and socially vulnerable. With an already low and persistently declining female labor force participation, emerging data suggest that women who were employed before the nationwide lockdown in 2020 saw larger employment losses than men even after the gradual relaxation of the lockdown in June 2020 (Deshpande 2020; Desai, Deshmukh, & Pramanik, 2021).<sup>1</sup> These job losses are often associated with food insecurity, poverty, indebtedness, asset loss, and isolation (Agarwal, 2021).

During the gradual relaxation of the lockdown, mobility restrictions continued in areas that were experiencing greater spread of the virus; classified as “containment zones” (Ministry of Home Affairs [MHA], 2020). With most of the economy shut down, the country’s gross domestic product (GDP) fell by 24% in the April-June quarter of 2020-21 (National Statistics Office, 2020), leading to an unprecedented economic and social crisis. The functioning of all but the most essential services in the country was disrupted during the initial months. The mobility, health, and economic implications of the lockdown brought into focus the role of country’s formal and informal institutions in supporting resilience, including programs that aim to promote women’s economic empowerment, like savings and credits-based self-help groups (SHGs). Both during and after the gradual relaxation of the lockdown, women’s SHGs in India partnered in response to the pandemic by producing masks and personal protective equipment.<sup>2</sup> SHG members also contributed to efforts for addressing food security, for example by running and managing more than 100,000 community kitchens in India. However, the economic activities of SHG households as well as group functioning was severely impacted. An initial report from May 2020 revealed that SHG savings were getting depleted and job losses during the lockdown resulted in limited income sources leaving little to no money for loan repayment (Tankha, 2020a). In the state of Kerala, women’s microenterprises that invested their savings into mask production were

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<sup>1</sup> In the short term, more men than women lost jobs in absolute terms, however. (Deshpande, 2020).

<sup>2</sup> As of July 2020, SHG members under the National Rural Livelihoods Mission (NRLM) had produced more than 150 million masks and 3 million protective gear, as well as more than 0.5 million liters of hand sanitizer (Ministry of Rural Development, 2020d).

severely impacted due to inventory loss, cancellation of orders, lack of transportation facilities and raw materials, and delayed payments for goods produced on credit (Kudumbashree, 2020).

In this study, we investigate the impact of the COVID-19 induced nationwide lockdown on SHG activities in 2020, and the extent to which SHGs may have contributed to economic resilience during this time. First, we examine the effects of the lockdown on women's SHG savings under the National Rural Livelihoods Mission (NRLM). Almost 80 million rural households in India have been mobilized into 7.4 million women's SHGs by the NRLM, which implements the National Rural Livelihoods Project (NRLP) – the largest public livelihoods program in the world. A recent quasi-experimental evaluation of the NRLP<sup>3</sup> showed that longer duration of program exposure led to positive program effects on various economic outcomes, including income, savings, and access to formal credit (Kochar et al., 2020). At the state-level, State Rural Livelihoods Missions (SRLMs) implement the NRLP by mobilizing women into SHGs of 10-15 women per group. These SHGs start with a period of collective savings to facilitate intragroup lending. With the support of the NRLM, SHGs are gradually connected to formal financial and capital services, production and productivity enhancement services, technology, knowledge, skills and inputs, and market linkages (Reserve Bank of India [RBI], 2018). Group savings serve as the backbone of intragroup lending – regular savings facilitate regular lending, and eventually formal bank linkages (RBI, 2018). Regular savings also are one of the five key elements of SHG practices,<sup>4</sup> which determine groups' eligibility to receive financial assistance from SRLMs and formal loans from banks (RBI, 2018). Disruption of group meetings and regular savings could therefore pose a threat to the sustainability of SHGs. We use administrative data from the NRLM to investigate the change in SHG savings mobilized during the lockdown and shortly after the gradual relaxation of the lockdown.

In addition, we investigate heterogeneous effects by different pandemic responses including the severity of the lockdown and the receipt of any support funds from the SRLMs during the pandemic. Further, we explore differences in early versus late effects by comparing effects during the initial stringency of the lockdown from March—May 2020, and the later relaxation from June—July 2020. It is important to note that COVID-19's second wave in India in 2021 was much more severe with far greater health implications than in 2020. However, the data used for

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<sup>3</sup> The Ministry of Rural Development launched the National Rural Livelihoods Mission (NRLM) in 2012. Within the ambit of this mission, the National Rural Livelihoods Project (NRLP) was formed to build capacity and support its expansion.

<sup>4</sup> These five elements are referred to as the "*Panchsutras*", and include regular meetings, regular savings, regular inter-lending, timely repayment, and up-to-date books of accounts.

this study, both administrative and survey, were not collected after 2020. Therefore, we primarily look at the immediate to six-month effects of the nationwide lockdown, highlighting the potential implications for group-based financial inclusion and social protection programs going forward.

Finally, we examine the impact of the lockdown on consumption, economic activity, and food security, of both SHG and non-SHG households, using three waves of self-reported survey data collected by the World Bank in six Indian states (Jharkhand, Rajasthan, Uttar Pradesh, Andhra Pradesh, Bihar, and Madhya Pradesh). We compare the outcomes across SHG and non-SHG households to investigate the potential role of SHG membership in providing economic resilience. A recent evidence synthesis on women's groups and past covariate shocks (such as drought, floods, or conflict-related shocks) concluded that most evidence on the capacity of SHGs and savings groups to provide member resilience is positive (Walcott, 2021). Specifically, households with exposure to women's groups tend to have lower food insecurity, higher consumption, and higher income after weather shocks (Demont, 2020; Christian et al., 2019; Karlan et al., 2017; Wineman et al., 2017). At the same time, the nature and severity of the 2020 lockdown in India was unparalleled, eliminating the scope for most group-based activities. Therefore, it is important to understand whether and how SHGs supported members and non-members during this time.

We use administrative data from the NRLM to examine the impact of the COVID-induced lockdown on savings mobilized by SHGs. Using web scraping tools, we extracted monthly data on savings mobilized by, and funds disbursed to SHGs by the SRLMs between April 2018 and July 2020 at the block-level (blocks in India are small administrative units comprising a cluster of villages). We combined these data with the Government of India's classification of containment zones to estimate heterogeneous effects by stringency of lockdowns and/or spread of the virus. Extracting monthly data at the block level allowed us to use an event-study design across all blocks in the sample, and a difference-in-differences strategy to compare blocks by different pandemic-related responses.

Our findings suggest that monthly savings mobilized by SHGs declined by almost Rs. 117 (approximately 1.6 USD;  $p < 0.01$ ) per household between March and July 2020. The impact was more severe in blocks that fell under districts with higher number of COVID-19 cases and higher restrictions on mobility and economic activity, and in blocks where SHGs did not receive any support funds from SRLMs. Monthly savings partially bounced back after the gradual relaxation of the lockdown (except in areas with a high number of COVID-19 cases, where savings decreased further) but remained lower than before the start of COVID-19. Additionally, SHGs in

blocks that had some fund disbursements from SRLMs experienced lower reductions in savings compared to SHGs in blocks without disbursement.

Analyses of three waves of household survey data suggest substantial losses in income-generating work for both SHG and non-SHG households. Both groups reported similar declines in work – among non-agricultural households, the proportion that reported no income-generating work increased from 18% pre-pandemic to 71% in May 2020. Both groups also reported declines in household consumption expenditures and food security during and after the lockdown. However, households (both SHG and non-SHG) that reported receiving food support from SHGs during the lockdown reported statistically significantly lower food insecurity.

The results are aligned with the findings from the evidence synthesis suggesting that SHGs and other women's groups focused on financial inclusion may have the ability to mitigate negative economic consequences during covariate shocks, but these same shocks tend to deplete group resources because of reduced savings and credit (Walcott et al., 2021). For example, restriction on public movement and market closures during the Ebola outbreak led to losses in income sources of Savings Groups (SGs)<sup>5</sup> members, where many members had to find new sources of income in addition to extra caretaking responsibilities for women (Androsik, 2020). Further, the joint savings of groups were used to support emergency needs such as burial services or vulnerable family members of those impacted, which further disrupted investments in income-generating activities (Androsik, 2020). In Liberia, the epidemic led to increased absenteeism in meetings, decreased contributions to and availability of funds for loans, and eventually, a suspension of group activities (Langlay, 2014). Some evidence on related shocks in India demonstrates that exposure to a severe cyclone in Odisha led to significant reductions in household expenditure, and while SHG participation was able to mitigate some of these losses (compared to non-SHG households), declines in food expenditures were not mitigated by SHG participation (Christian et al., 2019). Triangulating this evidence with our findings on significant disruptions in group savings during the lockdown, we conclude that SHGs face a critical need to support their long-term sustainability under the NRLM.

The rest of the paper is organized as follows – section 2 describes the NRLM context and government response to COVID-19 spread in 2020; section 3 describes the data sources and

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<sup>5</sup> Similar to SHGs, Savings Groups are a popular mechanism for financial and credit operations in sub-Saharan Africa. Savings Groups are informal groups that are owned and managed by members (primarily women) who contribute savings. The groups provide basic financial services where members can access small loans for personal or income generating purposes (Androsik, 2020).

summary statistics; section 4 presents the empirical methods; section 5 presents the results; and section 6 concludes the paper with policy recommendations.

## II. Context

### NRLM Implementation

The Government of India launched the NRLM in June 2011 with the goal of “creating efficient and effective institutional platforms for the rural poor and enabling them to increase household income through sustainable livelihood enhancements and improved access to financial services” (Ministry of Rural Development [MORD], 2011). The NRLM operates in 28 states through state-level SRLMs, which create and work with women’s SHGs, by mobilizing members, linking them to formal bank accounts, and facilitating institutional and capacity building, financial inclusion, and livelihoods promotion. The NRLM follows a federated structure, a system of functional integration between groups at various levels, in which apex structures perform higher level functions (RBI, 2018). Most SHG federations are organized in a pyramidal structure in which the SHGs are the basic units, which are federated into primary-level federations known as Village Organizations, and Village Organizations are further organized into Cluster Level Federations. These higher-level organizations are designed to support SHGs through collective action and through community investment in undertaking common socio-economic activities, with the ultimate goal of developing community-owned institutions.

To support financial inclusion and other livelihoods activities under the program, the NRLM provides three kinds of funds as resources to SHGs and their higher-level federations (NRLM, 2020). First, the NRLM provides revolving funds as an initial cash grant to SHGs. These revolving funds serve as catalytic capital for leveraging repeat bank finance.<sup>6</sup> Second, SHG federations may receive community investment funds as seed capital to meet the credit needs of the members and to meet the working capital needs of the collective activities at various levels. These collective activities could include livelihoods initiatives, including practicing new agricultural interventions, formation of producer groups, poultry and non-farm interventions, and formation of micro-enterprises (MoRD, 2011; Siwach et al., 2022). Third, NRLM provides vulnerability reduction funds to Village Organizations to address vulnerabilities like food security,

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<sup>6</sup> According to the NRLM, these funds are provided to SHGs that have been practicing the ‘Panchasutra’ (Regular meetings; Regular savings; regular inter-lending; Timely repayment; and Up-to-date books of accounts). We retrieved information on funds from <https://ajeevika.gov.in/en/content/components/financial-inclusion>



health security etc., and to meet the needs of the vulnerable persons in the village. SHGs can use these funds for individual needs of their members or collective action.

## Response to the Pandemic in 2020

In 2020, India's response to the pandemic included a series of measures that resulted in a complete or partial halt in economic activity at various levels, specifically between March 2020 and August 2020. On March 25, 2020, the Government of India (GOI) announced a nationwide lockdown that was initially due to last from 25 March 2020 to 14 April 2020 (phase 1). With the exception of essential services, most public offices and services were closed. On April 14, 2020, the country entered a second phase of the lockdown, which was further extended until May 03, 2020 (phase 2), with conditional relaxation after April 20th for regions with limited or contained spread. On May 04, 2020, the lockdown was further extended for two weeks until May 17, 2020, but many previous nationwide restrictions, like inter-state movement of migrant workers, were relaxed. Because of the relatively low number of cases in rural areas, agriculture activities and industries operating in rural areas were allowed to operate again (Beyer et al., 2020).

During and after May 2020, the stringency of restrictions varied across areas based on the number of diagnosed COVID-19 cases and the rate of increase in cases. On May 01, 2020, the Government of India released an order that classified districts under "Red" (presence of infection hotspots), "Orange" (presence of limited infection hotspots), or "Green" zones (no infection). While most economic activity could resume in Green and Orange zones after May 01, mobility as well as social and economic activity was still restricted in Red zones.<sup>7</sup> On May 17, 2020, the lockdown was further extended in specific areas with increased infection spread, while local areas with reduced spread experienced a greater relaxation. The extent of restriction on economic and social activities was determined mostly by states – including the zoning of containment (and buffer) zones. In June and July 2020, the Government of India gradually began relaxing the nationwide lockdown based on two criteria: manageable caseload and intensity of economic activity. However, states and local authorities continued to impose lockdown restrictions in containment zones.

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<sup>7</sup> Air, rail, metro and inter-state road travel remained prohibited and educational institutions, hospitality services and places of large public gatherings (such as cinemas and malls) remained closed during this period across the entire country.

Following the nationwide lockdown, the Ministry of Rural Development (MORD) issued a series of guidance to the SRLMs.<sup>8</sup> On March 30, 2020, SRLMs were advised to coordinate with the Department of Health and local authorities to enhance efforts on creating community awareness, mask and sanitizer production, providing rations etc. but also to ensure that all activities were conducted, while following the social distancing advisory issued by the Government (MORD, 2020a; 2020b; 2020c). Further, the SRLMs were advised to disburse loans to SHG members who were severely impacted by the pandemic, and if required, to reschedule loans or issue a moratorium period of two to three months for repayment of loans. On April 30, 2020, the MORD advised that SRLMs should prioritize the release of Vulnerability Reduction Funds, Revolving Funds, or Community Investment Funds to SHG federations to ensure the availability of funds for loan disbursement and to support SHG engagement activities in response to COVID-19 (MORD, 2020b; 2020c). Further, the guidance recommended extending the suspension of group meetings in all infected districts and containment zones as a measure towards virus containment.

### III. Data

#### NRLM Data

We collected longitudinal data on NRLM activities by scraping the NRLM block-level Monthly Progress Reports (MPR) reported on the NRLM MIS. These data include monthly block-level<sup>9</sup> information on – reporting status; amount of savings mobilized by SHGs; number of households mobilized into SHGs; amount of revolving funds, community investment funds, and vulnerability reduction funds disbursed and number of SHGs and SHG federations that received these funds. To ensure that we had sufficient pre-March 2020 data (before the onset of COVID-19) to control for seasonal trends, we extracted data for fiscal years 2018-19, 2019-20, and 2020-21. These data, covering 5,627 blocks with NRLM SHGs were extracted in August 2020, enabling us to obtain monthly data from April 2018-July 2020.

We constructed a balanced panel of all blocks that reported data in every month since NRLM implementation in their block. Data extracted from the NRLM MIS vary in terms of quality and consistency across time and blocks, which leads to considerable noise in the outcome variables

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<sup>8</sup> Letters and circulars extracted from the DAY-NRLM

([https://aajeevika.gov.in/en/letterscirculars/letters?combine=&tid=All&date\\_filter\[value\]&date\\_filter\\_2\[value\]&page=1](https://aajeevika.gov.in/en/letterscirculars/letters?combine=&tid=All&date_filter[value]&date_filter_2[value]&page=1)).

<sup>9</sup> Administrative units in India follow a tiered structure, where blocks represent a rural area administratively earmarked for planning and development. In 2012, the country had 6,612 blocks.

of interest. First, not all SRLMs report monthly data through Monthly Progress Reports to the national MIS.<sup>10</sup> Second, among states that do report monthly data, not all blocks have Monthly Progress Reports approved through the MIS monitoring by a District level officer, who is required to verify the data on consistency, reliability, and authenticity. To ensure that we had a sample of blocks with consistent reporting over time, we started by collating data from blocks that had an approved Monthly Progress Report in every month between April 2018 and July 2020, the period of our analysis. However, there was a significant drop in the proportion of blocks that had entered and approved data in July 2020 (see [Appendix Figure 1](#)), likely due to insufficient follow-up time between the monthly entry and our data extraction. Therefore, we retain the sample of blocks that had an approved MPR in every month up to June 2020, while noting that not all blocks in our sample reported data in the final month (July 2020). To investigate whether the results may have been driven by an unrepresentative sample, we performed robustness checks on our primary results by excluding blocks that did not report data in July 2020 but consistently reported data in every month before July 2020.

We were able to construct a sample of 1,841 blocks with consistently collected data in every month between April 2018 and June 2020 across 374 districts and 25 states that had SHGs supported by NRLM; 1,082 of these blocks reported data for July 2020. Starting with the 5,627 blocks that appeared in the NRLM MIS, we dropped all blocks in two states (Andhra Pradesh and Telangana) that do not report monthly progress data at all. In addition, many blocks fail to enter monthly data on time, or completely skip reporting data in some months. Overall, 57% of the 5,627 blocks (N=3,198) had a monthly report entered and approved in every month starting from NRLM implementation in their block. We retained these 3,198 blocks which spanned 480 districts and 25 states, and dropped the remaining 43% of blocks from our sample.<sup>11</sup> Next, we excluded blocks that started NRLM implementation after 2018 (and therefore were not observed for many months in the panel) to retain a balanced panel on blocks, and because new blocks introduced heavy noise in mobilization trends.<sup>12</sup> This resulted in a final sample of 1,841 blocks across 374 districts.<sup>13</sup>

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<sup>10</sup> Specifically, states that have their own MIS may not report separate data on the national MIS. In July 2020, for example, we had no data from Andhra Pradesh and Telangana.

<sup>11</sup> Out of these 3,198 blocks, 3,191 merged to household mobilization data; 3,022 merged to savings data; 3,108 merged to Revolving Funds data; 3,184 merged to CIF data; and 3,184 merged to VRF data.

<sup>12</sup> Specifically, SHG activities vary extensively in the first year of group formation, with a heavy focus on group formation within new blocks.

<sup>13</sup> Our conversations with staff from the World Bank, India, who have been supporting the NRLM MIS data reporting, revealed that the quality of data entered in the monthly progress reports depends on block-level users (data entry

## Data on COVID-19 Cases & Red Zone Classification

To further assess differences by lockdown stringency, we extracted – (1) district level containment zones classification from the Ministry of Home Affairs; (2) biweekly number of confirmed COVID-19 cases at the district level from <https://www.covid19india.org/>; and (3) data on state-level mobility index from Google mobility reports (following Ravindran and Shah, 2020). We merged the district-level containment zone data to COVID-19 case data and Google mobility reports to visually assess the differences across the three containment zones during the lockdown period. As shown in [Figure 1](#), the proportion of COVID-19 cases per million population was highest in Red zones through August 2020, followed by Orange and Green zones, respectively. While COVID-19 cases in all three zones increased steeply between April and August 2020, Red zones retained the highest number of cases in August (at 1,630 cases per million population), with very little difference in cases between Orange zones (1,087 cases per million population) and Green zones (990 cases per million population).

Additionally, Red zones had lower mobility throughout the period of our analysis, as indicated by Google mobility index reports which are available at the state level. These mobility reports chart movement trends over time by geography, across different categories of places like retail, groceries, parks, public transit and workplace. We merged these data to our sample using state names and found that states with a larger proportion of population in districts categorized as Red zones had a greater decrease in workplace mobility between April and August 2020 (findings presented in Appendix Figure 2). Through multiple sources, we conclude that areas under the Red zones had lower mobility and tighter restrictions throughout the period of our analysis. Therefore, in addition to the overall impact of COVID-19 lockdown, we examined the differential impact of COVID-19 on savings mobilized in blocks categorized as Red zones.

We merged our final NRLM sample with the containment zone classification using district and state names. Out of 374 districts in the final sample, 47% (N=177) were classified as Green zones; 37% (N=139) were classified as Orange zones, and 16% (N=58) were classified as Red zones. [Figure 2](#) shows the zone distribution of blocks included in our study sample.

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operators) who are required to punch in aggregate value on a monthly-basis. This process leads to possibilities for significant reporting errors, because of which the NRLM is now moving towards a transactions-based system of data reporting. Most states are currently in the process of shifting towards this new system of reporting. However, the development of this system has faced multiple setbacks and therefore the monthly progress report module continued to be active at the time of our study. Further, as explained in the study, we were able to minimize the scope of errors in the analysis by restricting all analysis on blocks that had an approved report in every month since NRLM inception.

Finally, we compare the characteristics of areas included in the sample and those that were dropped because of insufficient data. As shown in [Table 1](#), included blocks had similar rates of rural population, female to male ratio, and overall district population as the blocks without complete data, but we find considerable differences in COVID-19 classifications and years of NRLM implementation. While 20% of retained blocks and 18% of dropped blocks fell under the Red zones, 40% of retained blocks and 50% of dropped blocks fell under Orange zones, and 41% of retained blocks and 32% of dropped blocks fell under Green zones. These indicators suggest that blocks dropped from the sample may have a higher rate of infection and mobility restrictions, although as we note in Figure 1, Orange and Green zones had similar growth in the number of cases. In terms of year of NRLM implementation, almost half of the blocks dropped from the sample started the program in 2018 or later – which is expected because we intentionally dropped these blocks to retain a balanced panel between April 2018 and June 2020. Among the remaining dropped blocks, most started the program prior to 2012, suggesting that older blocks were less likely to consistently report data during the period of our analysis.

## World Bank Survey Data

To triangulate our findings with information on household economic outcomes, we used three rounds of the “COVID-19 related shocks survey in rural India” collected from six states in India.<sup>14</sup> These data were collected through phone-based surveys in May 2020 (round 1), July 2020 (round 2), and September 2020 (round 3), and include information on demographic characteristics, income, consumption, migration, access to relief, health, and agriculture. The data also include an indicator for the respondent or someone in the respondent’s household being an SHG member. The samples for these surveys were drawn from surveys and impact evaluations previously conducted by the World Bank, the Ministry of Rural Development, India, IDInsight and the International Initiative for Impact Evaluation (3ie). A total of 9,411 respondents participated over the three rounds, out of which 3,482 households reported having an SHG member.<sup>15</sup> The combined dataset follows a repeated cross section design, where the three waves may have included a different set of respondents. The total number of respondents was 4,550 in the first round, 5,005 in the second round, and 5,200 in the third round.

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<sup>14</sup> These sample for the survey data were collected by researchers from IDInsight, in collaboration with the World Bank, the Development Data Lab, and John Hopkins University. States covered in these data include Rajasthan, Uttar Pradesh, Bihar, Jharkhand, Madhya Pradesh, and Andhra Pradesh.

<sup>15</sup> The dummy variable indicating SHG membership is set to one if at least one member of the household is a member of a self-help group. The corresponding question in the survey was: “Are you or anyone else in your household a member of a self-help group?”

Table 2 shows descriptive statistics from the survey data, by SHG household. Overall, SHG households had lower weekly consumption expenditure pre-pandemic (based on recall data) than non-SHG households, and were less likely to have a male respondent to the survey. SHG households also were more likely to belong to Scheduled Caste groups, which is indicative of NRLM's focus on socioeconomically vulnerable groups. We also find substantial variation by state, with most SHG households coming from Bihar and Andhra Pradesh, which is reflective of the large scale of SHGs in these two states. Finally, 40% of both SHG and non-SHG households reported receiving some assistance from SHGs during the lockdown. Although not shown here, the majority of these households reported receiving SHG assistance in accessing face masks, sanitizers, and information about health and hygiene.

## IV. Empirical Strategy

### Impact of Lockdown on SHG Savings

We estimate the impact of COVID-19 and related lockdown on SHG savings using an event study design following:

$$Y_{bmy} = \alpha + \sum_{y=2018}^{2020} (\beta_y \times Post_m) + \gamma_b + \lambda_m + \psi_y + X_{bmy}\delta + \eta_{my} + \epsilon_{bmy} \quad (1)$$

In equation (1),  $Y_{bmy}$  is the amount of savings mobilized per household in month  $m$  of year  $y$  in block  $b$ .  $Post_m$  is a binary indicator which takes the value of 1 for months from March to July. Our identification strategy compares savings per program household before and after March across multiple years from 2018-2020. Hence,  $\beta_{2020}$  is the parameter of interest, indicating the change in savings during March to July 2020, relative to other years. The specification fully controls for block fixed effects ( $\gamma_b$ ), month fixed effects ( $\lambda_m$ ), and year fixed effects ( $\psi_y$ ). Further, we control for block-level NRLM program implementation indicators, including the number of households mobilized into SHGs by a given month and the block-level fiscal year targets of SHG savings. Finally, we control for district-level population and proportion of rural population (extracted from Census, 2011) and month-year trends. This specification controls for seasonal fluctuations by including month fixed effects and year fixed effects in line with Agüero (2020). Last, because the COVID-19 related lockdown measures and zone classification depend upon district and time, we cluster our standard errors at the district-time level, but our primary results are robust to alternative cluster specifications, including block- and district- levels.

We validate the identifying assumption underlying our primary specification in equation (1) through a visual inspection of the pre-COVID-19 trends in monthly mobilization of savings. [Figure 3](#) plots the coefficients from a regression of program households' savings on month-time dummy indicators for fiscal years 2018-19 and 2019-20. These pre-trend coefficients help validate our identification assumption. Relative to February 2020, the omitted category, there is no clear trend in savings mobilized per household between April 2019 and February 2020, except for a small but significant increase in June 2019. Further, the decline in savings started only in March 2020, and accelerated for two months before increasing again. At a glance, the visual trends lend support to our identifying assumption.

As mentioned earlier, we also investigate heterogeneous effects by zone classification depicting the number of COVID-19 cases and severity of lockdown. This specification adds interactions between Post months (March to July) and an indicator for whether a block fell under the Red zone, as shown in equation (2).

$$Y_{bmy} = \alpha + \sum_{y=2018}^{2020} \sum_{r=0}^1 (\beta_{ry} \times Post_m) + \gamma_b + \lambda_m + \psi_y + X_{bmy}\delta + \eta_{my} + \epsilon_{bmy} \quad (2)$$

In addition to the impact on savings over five months post COVID-19, we also explore differences in early versus late effects because of the initial stringency of lockdown between March and May 2020, and the later relaxation of these measures in June and July. We conduct these analyses by including two Post indicators – one for the months of March to May, and a second indicator for the months of June and July. Finally, we explore heterogeneous effects across blocks that reported disbursement of any funds under the revolving funds, community investment funds, or vulnerability reduction funds post COVID-19, and blocks with no fund disbursement.

## SHGs & Economic Resilience

We next assess the change in household economic outcomes for SHG households and non-SHG households, further testing whether SHG households were more resilient to shocks. Specifically, we estimate the following regression:

$$Y_i = \alpha + \beta_1 SHG_i + \beta_2 (SHG_i \times Wave_t) + \beta_3 Wave_t + \beta_4 PreCovid X_i + \epsilon_i \quad (3)$$

In equation (3),  $Y_i$  is the outcome of interest. We consider three outcomes – monthly consumption expenditure of the household, whether the household had no work for pay in that

month, and household food security.<sup>16</sup>  $SHG_i$  is a dummy variable indicating whether the household had an SHG member;  $Wave_t$  indicates each of the three survey waves – May, July, and September 2020;  $PreCovid X_i$  includes respondent characteristics including gender, age, religion, caste, household size, state of residence, and pre-pandemic household assets. We also control for recall values of household consumption. To analyze the role of SHGs in providing resilience against food insecurity, we estimate the impact of receiving food assistance from SHGs – which was reported by both SHG and non-SHG households. While controlling for recall values of household expenditure can help mitigate some concerns about unobserved differences between SHG and non-SHG households, we are unable to verify pre-trends because of lack of data collected over multiple periods. Interpreting the impact estimates of SHG membership on resilience as causal thus requires considerable caution, also because of self-selection and potential spillovers.

## V. Results

### Change in SHG Savings During Lockdown

Monthly savings declined by Rs. 117 (approximately 1.6 USD;  $p < 0.01$ ) per household post March 2020 – an 85% decline from Rs. 135 in February 2020. [Table 3](#) presents these findings using formal estimates from equation (1), with estimates across all blocks in our sample presented in column 2. Column 3 adds interactions with blocks classified as Red zones and indicates that while savings declined by Rs. 105 (USD 1.5) per household in blocks outside Red zones, blocks in Red zones saw a decline of Rs. 163 (a difference of Rs. 58 or USD 0.83;  $p < 0.10$ ) per block. Relative to March-July 2018 (the omitted category), there was no significant change in SHG savings in the same months during 2019 (after controlling for monthly and annual trends).

Beginning in March 2020, savings declined in all areas, with a steeper decline in Red zones where savings fell below non-Red zones over the next two months, indicating that SHGs may face larger sustainability challenges in urban areas. Figure 4 presents the pre- and post-pandemic trends in average savings by Red zone classification. The final two months (June and July 2020) saw an increase in savings, likely due to resumption of group meetings and activities

<sup>16</sup> We classify a household as “food insecure” if the respondent reported yes to any of the following – because of lack of money or resources, the household – (1) limited portion size or reduced meals; (2) ran out of food; (3) someone in the household was hungry but did not eat; (4) someone in the household went without eating for a whole day.



while lockdown restrictions gradually relaxed. Before March 2020, blocks in Red zones consistently reported higher savings than other blocks. This is not completely surprising given that areas with a higher prevalence of COVID-19 tend to be more urban – in our sample, the rate of rural population in Red zones was 60% compared to 77% in blocks outside Red zones. We find seasonal variation with a shift in trends in April 2019 – the beginning of a new fiscal year, and relatively stable trends for the entire year thereafter. To account for these changes over time, we break down the post-COVID-19 estimates by early and late effects.

Estimates shown in in [Table 4](#) suggest that the average decline in savings per household was Rs. 108 (USD 1.54) per month during early months (March to May 2020) and Rs. 53 per month (USD 0.76) in later months (June to July 2020), suggesting that savings bounced back during the gradual relaxation of the lockdown. However, the difference between households in Red zones and other zones became steeper and significant in the later months, with Red zone households seeing an additional Rs. 80 (USD 1.1) decline in savings mobilized per household. This difference is likely reflective of the variation in the degree of lockdown relaxation in later months, where economic activities resumed with greater intensity in areas that had relatively contained spread of the virus, while areas with a large number of cases were still experiencing large restrictions.

### **Fund Disbursement**

As a measure to provide resilience against the pandemic induced shocks, the Government of India advised SRLMs to release vulnerability reduction funds<sup>17</sup> to all severely affected Village organizations and among vulnerable populations, as either low-interest loans or as grants, depending upon the vulnerabilities. As described earlier, the SRLMs were also advised to increase disbursement of other funds as needed, including the revolving funds and the community investment funds. However, less than 10% of all blocks in our sample reported any fund disbursement (any among the three types of funds) post COVID-19. Appendix Figure 3 shows trends in fund disbursement in our sample. We next estimate whether the decline in savings post COVID-19 varied across blocks by fund disbursement status.

As shown in Figure 5, a visual inspection of trends in savings shows virtually no change in savings mobilized per household in blocks with positive fund disbursement post COVID-19.<sup>18</sup> However, savings declined dramatically in blocks with no fund disbursement. We formalize

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<sup>17</sup> The advisory issued in April 2020 was to release VRF upto Rs. 150,000 per VO.

<sup>18</sup> We do see a spike in blocks with fund disbursement in 2019 – usually coinciding with start of a new fiscal year, coinciding with new fiscal year targets.

these findings in [Table 5](#), which reports estimates from equation (2) separately for blocks by fund disbursement status. Findings indicate that blocks with any fund disbursement post COVID-19 did not have a statistically significant decline in savings, while blocks with no fund disbursement had a decline of Rs. 137 (USD 1.96) in the initial months ( $p < 0.01$ ) and Rs. 64 (USD 0.91) in later months ( $p < 0.01$ ), with an additional Rs 84 (USD 1.20) decline for households in Red zones ( $p < 0.10$ ).

### **Robustness Checks**

We conducted several robustness checks. First, because COVID-19 related restriction “zoning” was initiated at the district level, we controlled for district specific linear time trends in our primary specification. Second, we restricted the sample of blocks to those that had an approved MPR in every month upto July 2020 (1,082 of 1,841 blocks). [Table 6](#) depicts the findings. We find no meaningful changes in our primary findings after controlling for district-specific linear time trends (column 1). While the overall effects became somewhat smaller when we restricted the sample to a balanced panel of blocks that reported data in every month upto July 2020 (column 2), the effects on savings for households in Red zones became stronger in both initial and later months. These differences may suggest that blocks that failed to report monthly progress information in July 2020 were more negatively impacted by the shocks on average, indicating that the impacts we present may underestimate the effects of COVID-19.

## **SHGs & Economic Resilience**

Although our findings show that SHG savings were significantly impacted following the COVID-19 lockdown, the source of this decline is not immediately clear. Because group meetings were suspended during lockdown, lower savings mobilized could be a consequence of groups not coming together physically to contribute savings, or due to a loss of income sources causing members to divert resources towards regular consumption, and likely due to both reasons. To analyze the decline in household resources during COVID-19, we first visually assess the change in economic outcomes of both SHG and non-SHG households based on three rounds of phone survey data.

As shown in Figure 6, both SHG and non-SHG households reported significant declines in income-generating work and consumption expenditure during the lockdown. While both outcomes improved in July and September, they remained significantly lower than their pre-pandemic levels. Recall data reported on pre-pandemic economic outcomes (for Feb. 2020) suggest that SHG households had lower consumption expenditure before the pandemic,

indicating that they may have been more economically vulnerable, and therefore potentially more susceptible to economic shocks induced by the lockdown. In terms of food security, slightly over 60% of households were food secure during the lockdown, which increased to over 75% by September 2020.

We found no discernible difference in food security by SHG membership, however, households that received SHG assistance with food access were more likely to be food secure compared with those who did not receive any SHG assistance. While approximately 42% of the sample reported at least one household member with SHG membership, around 5% of the sample reported receiving assistance from SHGs in procuring food grain, or food through SHG's community kitchens and other means. There are two caveats concerning the household survey data – first, unlike consumption and employment indicators, the surveys did not collect recall data on food security. Second, the question about primary occupation was only asked to non-agricultural households, therefore the likelihood of being out of work is only observed for this subsample. The proportion of non-agricultural households was 33% in round 1, 40% in round 2, and 39% in round 3.

Results based on estimating equation (3) shown in Table 7 indicate that SHG households had lower consumption expenditure compared to non-SHG households in February 2020 (pre-lockdown) and May 2020, but there was no additional difference in July and September, indicating that while SHG households started worse off, consumption expenditure for non-SHG households declined much faster during and after the lockdown. On the other hand, we did not find any difference in the likelihood of being out of work for SHG and non-SHG households before and during the lockdown. SHG households were 6 percentage-points more likely to be out of work than non-SHG households in July, but the difference faded away by September.

Analyses of the extent to which SHGs may have contributed to mitigating food insecurity indicate that households that received assistance from SHGs in procuring food grain or accessing community kitchens were 7 percentage-point more likely to be food secure, but during the lockdown SHG members had slightly lower rates of food security (2 percentage-point difference). We report these results in [Table 8](#), which indicates that both SHG and non-SHG households had significantly higher food security in July and September, compared with lockdown months. These outcomes are only reported for lockdown months, and July and September of 2020.

Overall, our findings suggest that despite being more economically vulnerable, SHG households were almost similarly impacted by the COVID-19 lockdown as non-SHG households. Although

SHG households had lower consumption expenditures before the pandemic, they were likely able to tap into their group savings and/or substitute away from their monthly savings towards household consumption in later months. At the same time, the lockdown resulted in substantial loss of employment for non-agricultural households, and decline in monthly savings by SHGs, indicating that longer-term effects may be more detrimental, especially in areas that continue to impose temporary shutdowns in response to the continually evolving public health situation.

## VI. Discussion & Conclusion

Using administrative data from the NRLM's Monthly Progress Reports, this study presents empirical evidence on how COVID-19 and the associated policy response, including the lockdown and the gradual relaxation of the lockdown, affected SHG savings activities in India. Using a 26-month panel across 1,841 blocks, we show that monthly savings mobilized reduced by almost 85% between March and July 2020. The decline in savings mobilized was larger in areas with a higher prevalence of the virus (with a higher prevalence in urban areas) and more stringent lockdown policies, and in blocks with no disbursement of the vulnerability reduction funds or community investment funds from state rural livelihoods missions. Triangulating administrative data with household survey data from six Indian states, our results suggest that a loss in income sources may have been the primary reason for the fall in savings, but that fund disbursement by SRLMs may have been able to mitigate some of the savings losses.

While our analysis shows large interruptions in savings and losses in income and consumption for SHG households, SHG membership may have contributed to member resilience against some of these shocks. Our findings suggest that SHG assistance in the form of community kitchens and other services may have provided households (both SHG and non-SHG) with means to combat food insecurity at the time of the pandemic. Indeed, early anecdotal evidence from the field suggested that trained SHG women provided rural citizens with information and support on COVID-19 relief programs such as the availability of free rations at Public Distribution System (PDS) shops, distribution of free food packets for children enrolled in government anganwadis, and availability of free gas cylinders under the Ujjwala Yojana (LEAD at Krea University, 2021). Our analysis suggests that while potentially effective, these instances were not widespread enough to improve average food security outcomes for SHG members relative to non-members (possibly also because of spillovers).

The overall findings are in line with findings from a small survey of a selected sample of SHG members in Odisha conducted in July (Sanyal et al., 2021). Survey responses indicated that women-led sources of income, such as daily wage work, cattle rearing, domestic work and small businesses, showed a sharp decline during lockdown; 63% of SHG women reported that they had either completely stopped earning or were earning less than subsistence level. A large majority (83%) of respondents were also at high risk of food insecurity,<sup>19</sup> and a significant proportion (11%) reported that they will not be able to recover from the economic shocks of the pandemic.<sup>20</sup> The same survey also revealed that SHGs were preferred avenues for women to access emergency loans and savings, and gain information during time of crises (Sanyal et al., 2021). An evidence synthesis on women's groups and past covariate shocks (such as drought, floods, or conflict-related shocks) concludes that most evidence on the capacity of SHGs and savings groups to provide member resilience is positive. Specifically, households with exposure to women's groups tend to have lower food insecurity, higher consumption, and higher income after weather shocks (Demont, 2020; Christian et al., 2019; Karlan et al., 2017; Wineman et al., 2017). However, while SHGs and savings groups may help members absorb some shocks, group membership seldom fully mitigates the effect of the shock. Some studies included in the evidence synthesis also did not find statistically significant differences in change in economic outcomes across SHG and non-SHG households in response to shocks (Ksoll et al., 2016; De, 2011). The synthesis also shows that acute covariate shocks can deplete group resources resulting in challenges for group sustainability (Walcott et al., 2021). When group members divert their resources towards consumption in time of crisis, it becomes imperative to understand the longer-term implications for group savings – which are the central activity of most economic groups like SHGs and savings groups. Declines in savings can have adverse consequences for group sustainability as shown in the evidence synthesis (Walcott et al., 2021).

Our study has some important limitations. First, we used administrative data on monthly progress reports reported by NRLM blocks in the national MIS. Several experts familiar with these data whom we consulted pointed out that MIS data are not always updated on time, as confirmed by our analysis. In our starting sample of 5,627 blocks, only 3,198 blocks had an MPR approved in every month starting from NRLM implementation in their block to June 2020. We also found a lag in approval of MPR reports. Almost half of the blocks did not have an MPR

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<sup>19</sup> 83% reported that they will not have the ability to buy more food once their current stock of food runs out.

<sup>20</sup> At the time of the survey, most (54%) of SHG households reported that it was still difficult for them assess how the lockdown had affected their income: 30% believed they would be able to recover from the economic shocks in less than a year while 11% reported that they would not be able to recover.

for July 2020 approved in August of 2020. Further, not all states report MPR data on the national MIS. Specifically, Andhra Pradesh (and now Telangana) started implementing their own SHG program<sup>21</sup> prior to the launch of the NRLM, and do not report data to the national MIS, limiting our ability to access data from these states for this study. As a result, our sample includes 25 of the 29 states in the country, and excludes two states that have India's longest running and likely some of the highest quality SHG programs. In addition, we restricted the study to blocks with consistently approved reports in every month between implementation start and June 2020. From an analysis of the demographic and program characteristics, we found that blocks that had entered the NRLM prior to 2012 were less likely to consistently report data during the period of our analysis, but there were no differences in terms of population characteristics.

Second, our analysis extends up to September 2020 and longer-term effects of the pandemic on group functioning and economic security require longer-term research. While SHG savings began to rise again in July, they remained lower than the pre-pandemic levels. Similarly, household-reported income generating activities were still substantially lower until September 2020. Further, while the nationwide lockdown was lifted and SHG meetings have now resumed, local areas continued to see sporadic periods of interrupted temporary shutdowns (with a higher prevalence in urban areas). More research on longer-term effects is needed to inform subsequent policymaking to mitigate the effects of the pandemic.<sup>22</sup>

Despite these limitations, our findings have several important implications for policymakers. Our findings indicate that the pandemic and the related lockdowns had significant negative effects on the core activity of a program that has reached over 60 million women nationwide. It will be crucial to understand whether and how these disruptions affect the longer-term institutional capacity of the NRLM and the sustainability of its 6 million plus SHGs. First, there is a need to update and track the NRLM MIS data on a timely and comprehensive basis and to analyze how group savings activities are being affected. In our analysis, we were only able to obtain longitudinal data for a sub-sample of blocks because of incomplete reporting. More regular updating of the MIS can help policy makers track SHG savings more accurately. Second, we find that blocks with positive fund disbursement post-COVID-19 did not see a significant decline

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<sup>21</sup> Earlier called the *Indhira Kranthi Patham*, or the District Poverty Initiatives Project (DPIP). A second phase of the program was called the Rural Poverty Reduction Project or RPRP. See Deininger & Liu (2013).

<sup>22</sup> At the time of completing this study (December 2021), block-level data on NRLM savings were not available on publicly accessible MPRs any longer.

in savings, suggesting that support from the SRLMs in form of vulnerability reduction funds or community investment funds may have mitigated some of the shocks. Combined, our study suggests that SRLMs could monitor and set thresholds of collective savings and other vulnerability indicators, below which SHGs would receive either a revolving fund or an unconditional cash transfer, with appropriate monitoring to ensure groups are not incentivized to reduce savings. There have been ongoing efforts to compile information on state-specific and SRLM responses to the COVID-19 crisis, including disbursement of funds, ending moratorium on loans, and digitizing communication and reporting of SHG activities (Tankha, 2020b). Future research should apply these state-level differences to study the effects of different policy responses on SHG functioning and members' outcomes, and on determining the capability of SHGs to mitigate the economic shocks introduced by the COVID-19 pandemic. Finally, SHG involvement in community responses can be strengthened by leveraging the large network of Community Resource Persons in villages, and by providing market linkages for food enterprises during the crisis.

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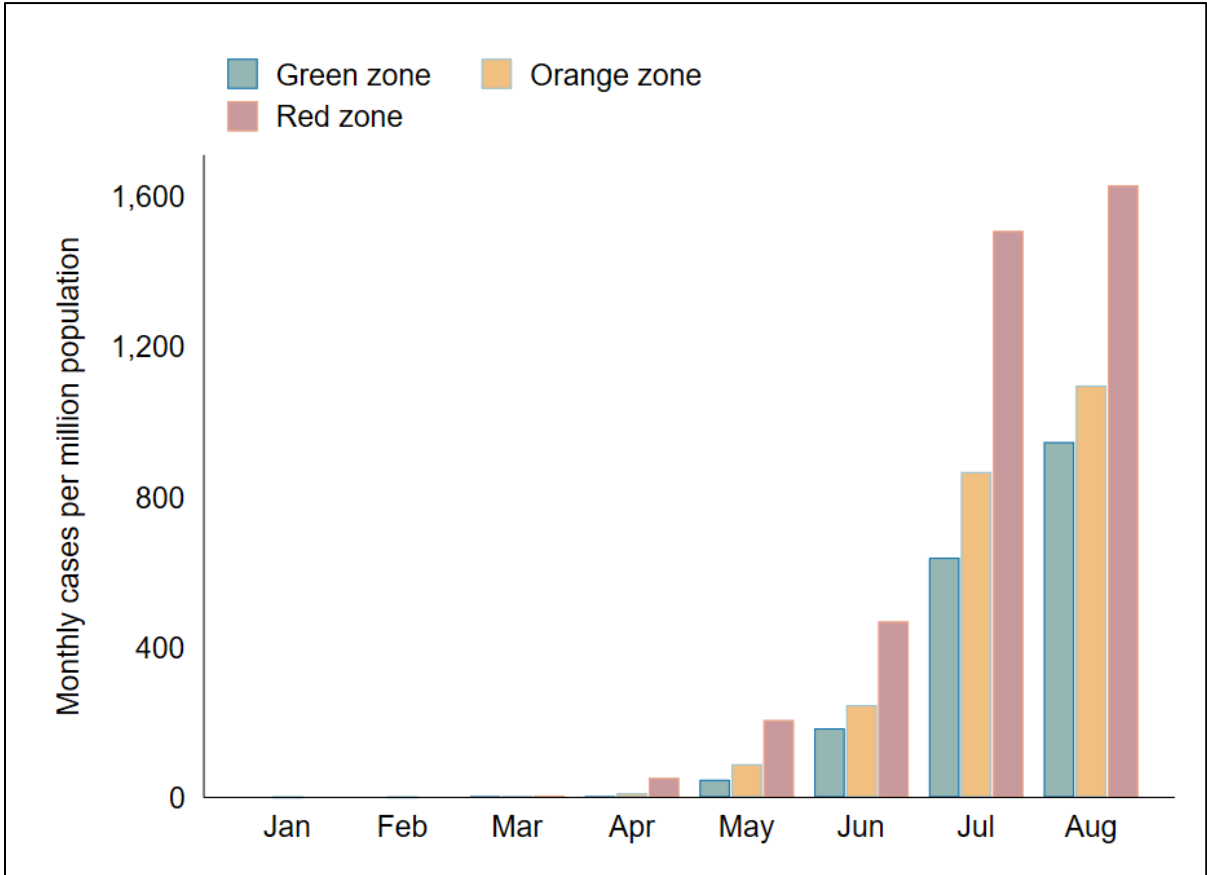
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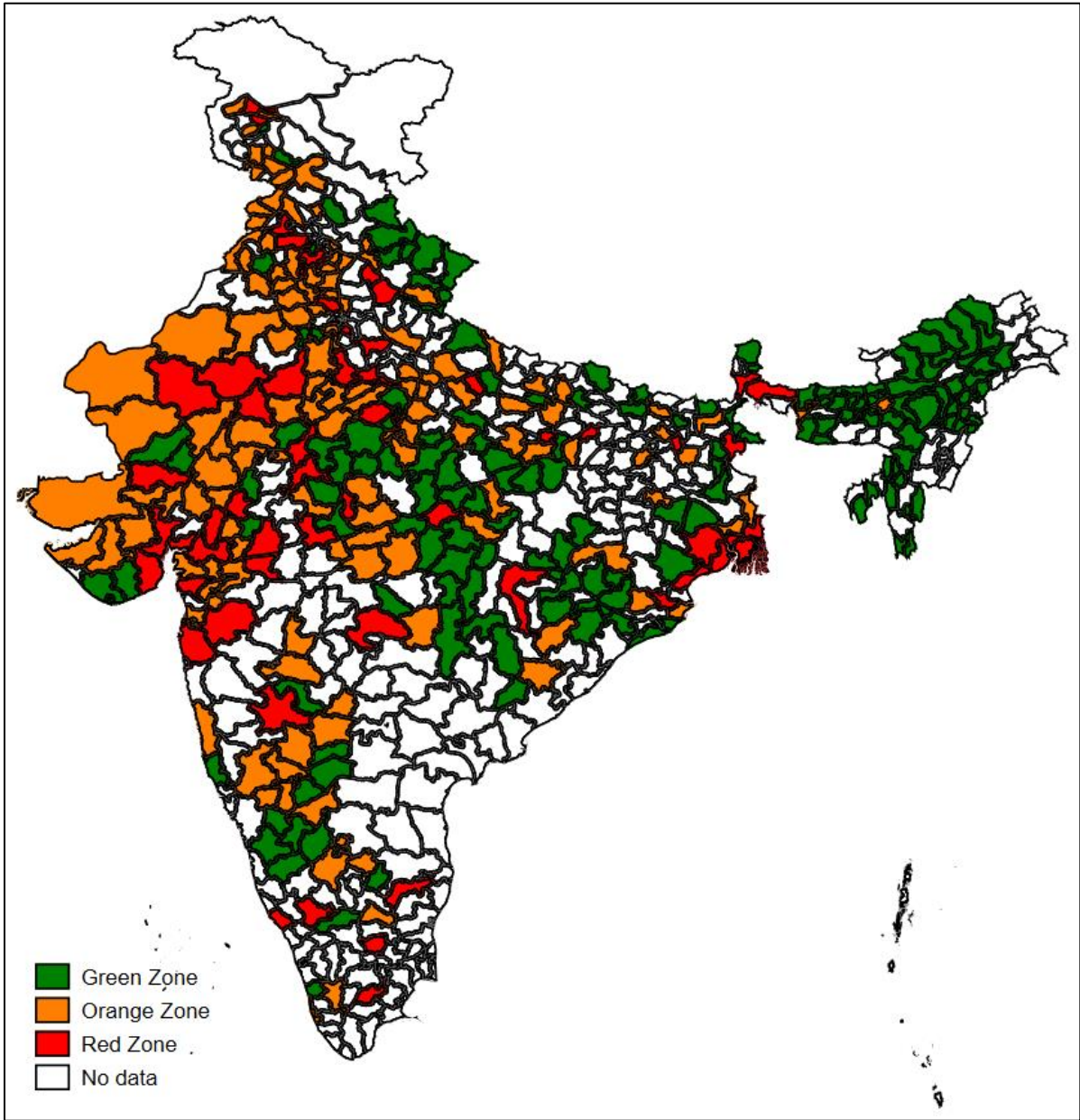
# Figures & Tables

Figure 1. COVID-19 Monthly Registered Cases by Containment Zone, Jan to August 2020



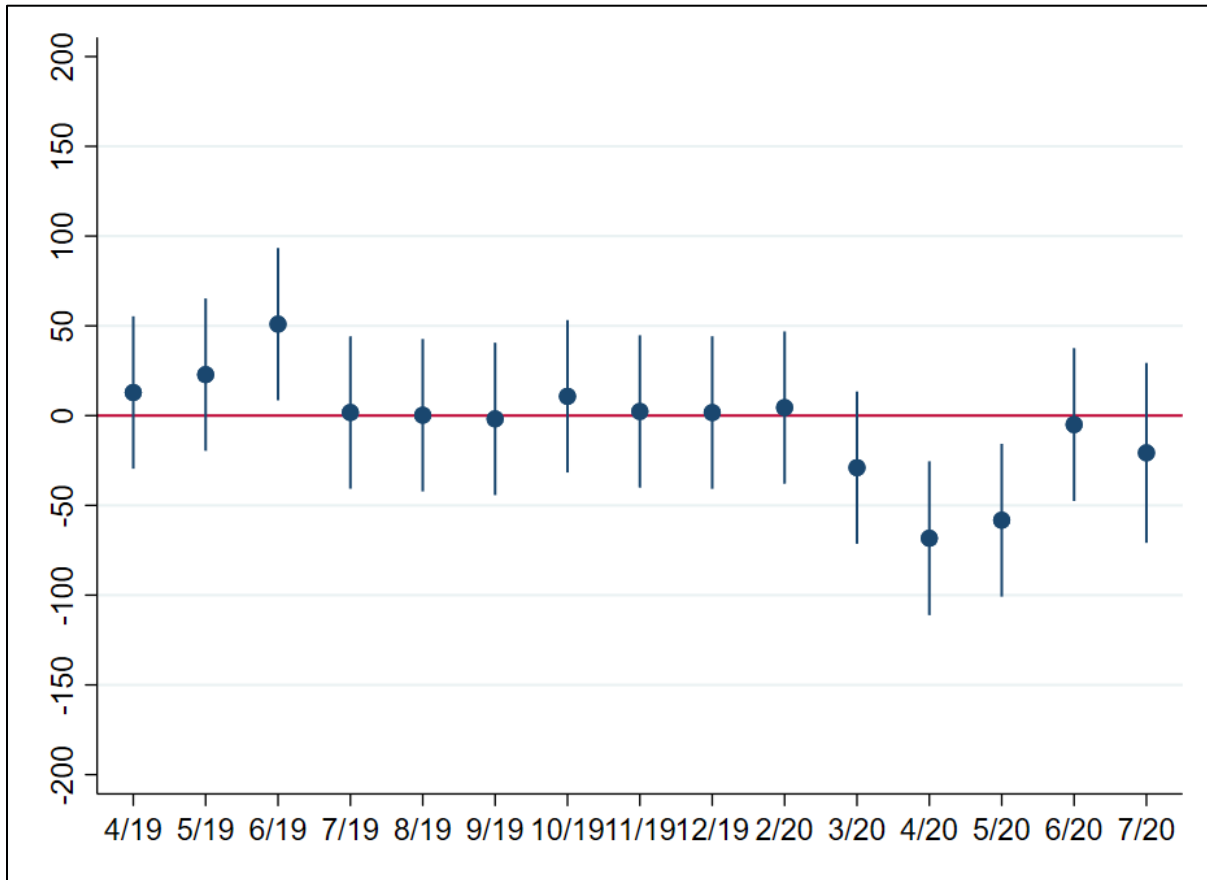
Note. Total sample includes 667 unique districts.

Figure 2. Distribution of Containment Zones – Final Districts in Sample



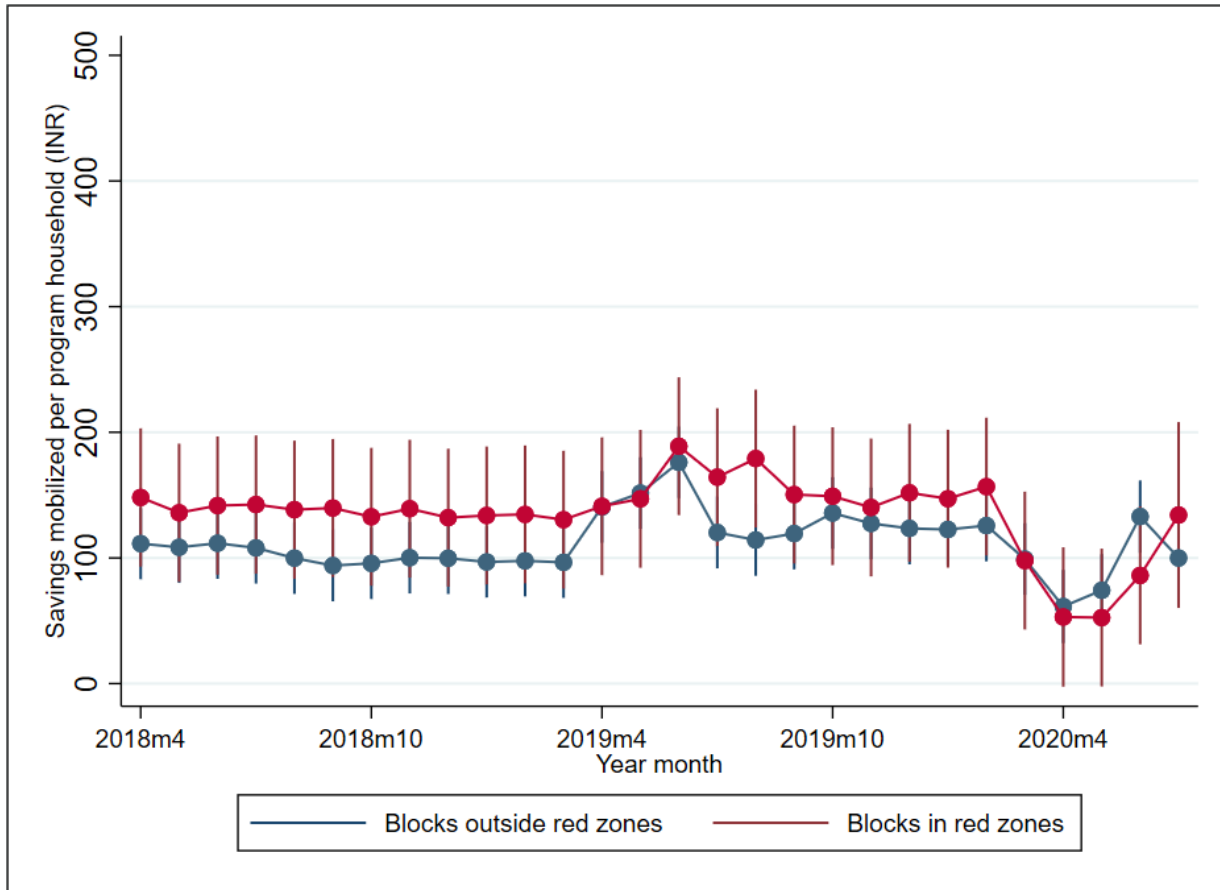
Note. The chart shows districts included in the final sample by containment zone classification. No data indicates districts that were excluded from our final sample.

Figure 3. Savings Per SHG Member – Verifying Pre-Pandemic Trends



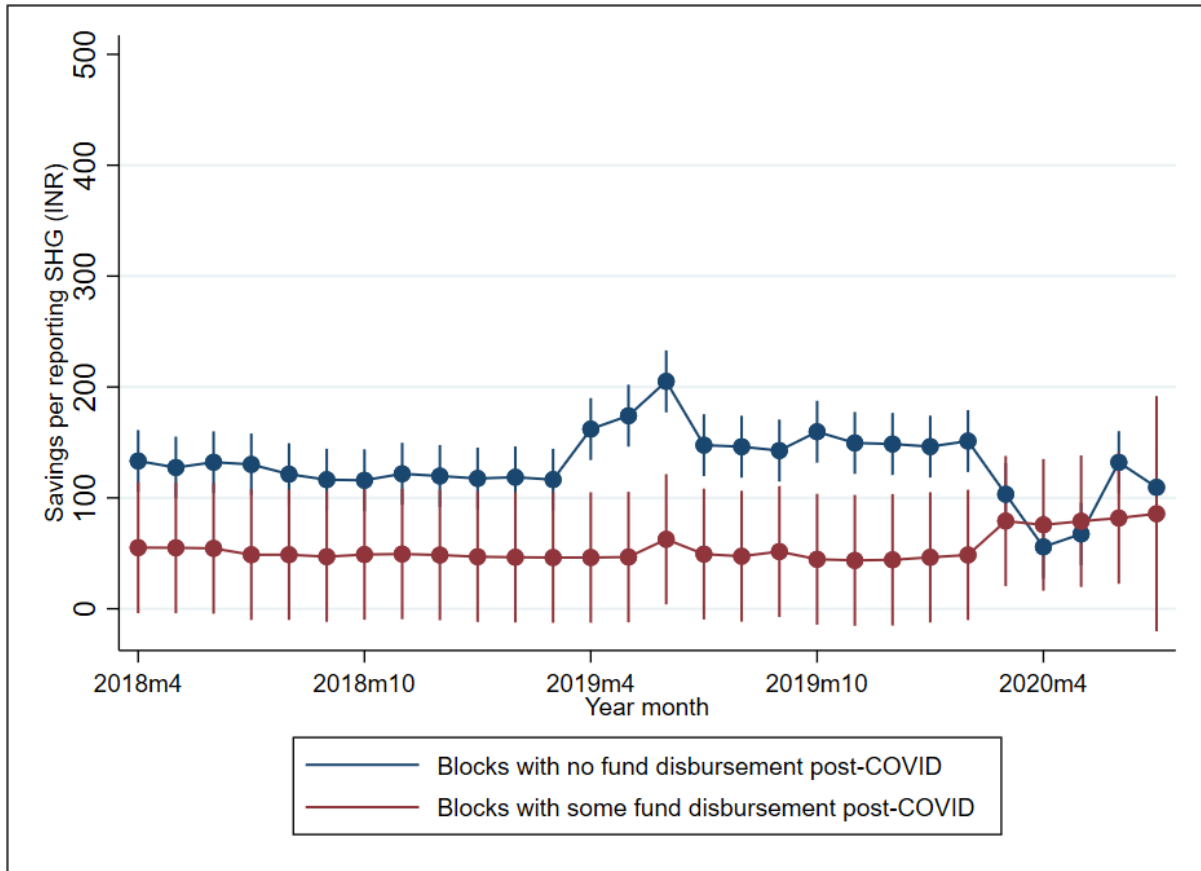
Note. The sample includes 1,841 blocks that entered NRLM before 2018. X-axis denotes Month/year. Blue bars indicate 95% confidence intervals around point estimates.

Figure 4. Savings Mobilized Per Program Household by Red Zone Classification



Note. The sample includes 1,841 blocks that entered NRLM before 2018, with 363 blocks falling under Red zones, and 1,478 blocks under non-Red zones. X-axis denotes Year and month number. Bars around point estimates indicate 95% confidence intervals.

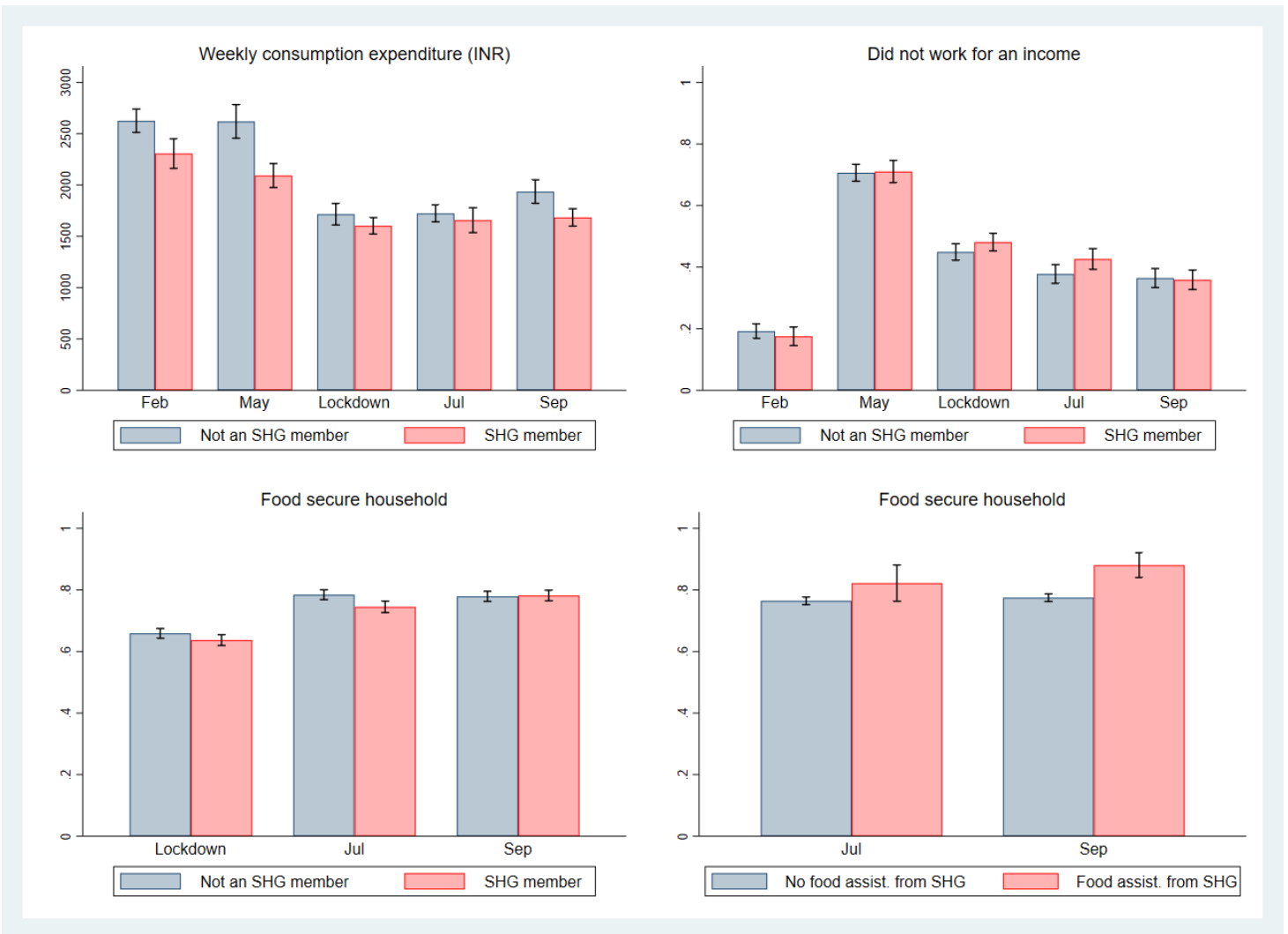
**Figure 5. Savings Mobilized Per Program Household by Fund Disbursement Status**



Note. The sample includes 1,841 blocks that entered NRLM before 2018, with 115 receiving some fund disbursement post-COVID, and 1,716 blocks receiving no funds post COVID. X-axis denotes Year and month number. Bars around point estimates indicate 95% confidence intervals.



**Figure 6. Household Economic Outcomes Before & After Lockdown**



Note: Surveys do not include any recall data on food security. Work for income is only asked to non-agricultural households.

**Table 1. Block Characteristics by Attrition Status**

|                                     | Blocks retained in sample | Blocks dropped from sample |
|-------------------------------------|---------------------------|----------------------------|
| <b>District demographics</b>        |                           |                            |
| Percent population rural            | 77%                       | 76%                        |
| District population                 | 2,139,131                 | 2,529,098                  |
| Female to male ratio                | 95%                       | 96%                        |
| <b>COVID-19 zone classification</b> |                           |                            |
| Red zone                            | 20%                       | 18%                        |
| Orange zone                         | 40%                       | 50%                        |
| Green zone                          | 41%                       | 32%                        |
| <b>Year of NRLM implementation</b>  |                           |                            |
| 2012 or before                      | 15%                       | 21%                        |
| 2013                                | 13%                       | 9%                         |
| 2014                                | 7%                        | 7%                         |
| 2015                                | 13%                       | 2%                         |
| 2016                                | 15%                       | 6%                         |
| 2017                                | 37%                       | 6%                         |
| 2018 or later                       | 0.1%                      | 49%                        |
| Total number of blocks              | 1,841                     | 3,776                      |

Note. District demographics are based on 2011 Census.

**Table 2. Summary Statistics – SHG & Non-SHG Households**

|  | SHG     | Non-SHG |
|--|---------|---------|
| <b>Household economic characteristics</b>  |         |         |
| N household members                        | 6.47    | 6.55    |
| Respondent age                             | 38.62   | 39.93   |
| Weekly consumption expenditure in Feb      | 2306.33 | 2626.13 |
| Asset score                                | 0.14    | 0.10    |
| Didn't work for an income in Feb           | 0.17    | 0.19    |
| Agricultural household                     | 0.59    | 0.62    |
| <b>Demographic characteristics</b>         |         |         |
| Male respondent                            | 0.81    | 0.89    |
| Caste: General                             | 0.11    | 0.19    |
| Caste: SC                                  | 0.37    | 0.28    |
| Caste: ST                                  | 0.13    | 0.13    |
| Caste: OBC                                 | 0.38    | 0.40    |
| Caste: Other                               | 0.01    | 0.01    |
| State: Rajasthan                           | 0.10    | 0.29    |
| State: UP                                  | 0.19    | 0.21    |
| State: Bihar                               | 0.24    | 0.17    |
| State: Jharkhand                           | 0.18    | 0.14    |
| State: MP                                  | 0.18    | 0.16    |
| State: AP                                  | 0.10    | 0.03    |
| Religion: Hinduism                         | 0.88    | 0.89    |
| Religion: Islam                            | 0.06    | 0.07    |
| Religion: Other                            | 0.05    | 0.04    |
| <b>SHG assistance during lockdown</b>      |         |         |
| Received assistance (any form) through SHG | 0.40    | 0.39    |
| Number of households                       | 3,842   | 4,859   |

**Table 3. Impact on Savings Mobilized per Household – All Post COVID-19 Months**

|  | (1)                  | (2)                   | (3)                   |
|--|----------------------|-----------------------|-----------------------|
| March to July 2019                       | 2.91<br>(11.94)      | -54.72<br>(36.03)     | -51.74<br>(35.87)     |
| March to July 2020                       | -79.22***<br>(14.13) | -116.85***<br>(32.92) | -105.08***<br>(32.77) |
| Blocks in Red Zones * March to July 2018 |                      |                       | -3.10<br>(6.30)       |
| Blocks in Red Zones * March to July 2019 |                      |                       | -16.21<br>(18.44)     |
| Blocks in Red Zones * March to July 2020 |                      |                       | -57.89*<br>(31.02)    |
| Observations                             | 44,539               | 44,539                | 44,539                |
| R-squared                                | 0.57                 | 0.57                  | 0.57                  |
| Dep. Var. Mean                           | 120.1                | 120.1                 | 120.1                 |
| Month FEs                                | Y                    | Y                     | Y                     |
| Month-year FEs                           | N                    | Y                     | Y                     |
| Interactions with red zones              | N                    | N                     | Y                     |

\*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ . Robust standard errors clustered at district-time level in parentheses. Estimates control for month fixed-effects, month-years fixed-effects, and interactions with red zones.

**Table 4. Impact on Savings Mobilized per Household – Early versus Late Effects**

|   | (1)                  | (2)                   | (3)                   |
|---|----------------------|-----------------------|-----------------------|
| March to May 2019                       | -9.04<br>(15.55)     | -2.09<br>(47.33)      | 2.37<br>(48.44)       |
| March to May 2020                       | -95.07***<br>(19.07) | -116.85***<br>(32.92) | -107.54***<br>(32.84) |
| June to July 2019                       | 13.82<br>(17.21)     | -7.62<br>(13.88)      | -7.28<br>(14.97)      |
| June to July 2020                       | -60.13***<br>(16.03) | -69.75***<br>(20.61)  | -53.53***<br>(20.02)  |
| Blocks in Red Zones * March to May 2018 |                      |                       | -3.28<br>(7.47)       |
| Blocks in Red Zones * March to May 2019 |                      |                       | -24.05<br>(16.85)     |
| Blocks in Red Zones * March to May 2020 |                      |                       | -46.52<br>(41.10)     |
| Blocks in Red Zones * June to July 2018 |                      |                       | -2.92<br>(7.51)       |
| Blocks in Red Zones * June to July 2019 |                      |                       | -4.44<br>(37.58)      |
| Blocks in Red Zones * June to July 2020 |                      |                       | -79.70*<br>(45.14)    |
| Observations                            | 44,539               | 44,539                | 44,539                |
| R-squared                               | 0.57                 | 0.57                  | 0.57                  |
| Dep. Var. Mean                          | 120.1                | 120.1                 | 120.1                 |
| Month FEs                               | Y                    | Y                     | Y                     |
| Month-year FEs                          | N                    | Y                     | Y                     |
| Interactions with red zones             | N                    | N                     | Y                     |
| District-wise linear time trend         | N                    | N                     | N                     |

Robust standard errors clustered at district-time level in parentheses. Estimates control for month fixed-effects, month-years fixed-effects, and interactions with red zones. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**Table 5. Impact on Savings per Program Household – by Fund Disbursement Status**

|   | (1)<br>Funded blocks | (2)<br>Unfunded blocks |
|---|----------------------|------------------------|
| March to May 2019                       | -11.92<br>(46.19)    | 9.40<br>(59.02)        |
| March to May 2020                       | 26.99<br>(36.16)     | -136.52***<br>(40.26)  |
| June to July 2019                       | 6.92<br>(12.79)      | -7.62<br>(18.30)       |
| June to July 2020                       | 5.95<br>(28.82)      | -63.82***<br>(23.28)   |
| Blocks in Red Zones * March to May 2018 | -9.50<br>(7.11)      | -0.94<br>(8.80)        |
| Blocks in Red Zones * March to May 2019 | -1.31<br>(4.98)      | -29.64<br>(20.54)      |
| Blocks in Red Zones * March to May 2020 | -33.89<br>(22.30)    | -44.32<br>(48.40)      |
| Blocks in Red Zones * June to July 2018 | -5.72<br>(6.41)      | -1.64<br>(8.90)        |
| Blocks in Red Zones * June to July 2019 | -15.57<br>(10.23)    | -4.49<br>(44.71)       |
| Blocks in Red Zones * June to July 2020 | -35.63<br>(35.12)    | -84.37*<br>(50.57)     |
| Observations                            | 8,264                | 36,275                 |
| R-squared                               | 0.45                 | 0.59                   |
| Dep. Var. Mean                          | 54.01                | 135.1                  |

Robust standard errors clustered at district-time level in parentheses. Estimates control for month fixed-effects, month-years fixed-effects, and interactions with red zones. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**Table 6. Robustness Checks on Effects on Savings Mobilized per Program Household**

|   | (1)<br>Robustness check – 1<br>Controlling for district-<br>specific linear time trends | (2)<br>Robustness check – 2<br>Restricting to balanced<br>panel of blocks |
|---|---|---|
| March to May 2019                       | 0.57<br>(46.10)   | -8.15<br>(62.94)  |
| March to May 2020                       | -112.11***<br>(31.92)   | -87.02*<br>(46.81)  |
| June to July 2019                       | -9.19<br>(15.81)  | -1.40<br>(23.45)  |
| June to July 2020                       | -60.35***<br>(20.46)  | -39.36<br>(25.54)   |
| Blocks in Red Zones * March to May 2018 | -14.40<br>(16.84)   | -8.95<br>(12.32)  |
| Blocks in Red Zones * March to May 2019 | -25.08<br>(16.99)   | -4.15<br>(18.64)  |
| Blocks in Red Zones * March to May 2020 | -36.20<br>(35.76)   | -117.62*<br>(69.63)   |
| Blocks in Red Zones * June to July 2018 | -12.28<br>(11.12)   | -1.38<br>(12.58)  |
| Blocks in Red Zones * June to July 2019 | -3.20<br>(38.95)  | 40.87<br>(58.82)  |
| Blocks in Red Zones * June to July 2020 | -59.71*<br>(35.42)  | -111.88*<br>(63.15)   |
| Observations                            | 44,539  | 25,521  |
| R-squared                               | 0.57  | 0.63  |
| Dep. Var. Mean                          | 120.1   | 129   |

Robust standard errors clustered at district-time level in parentheses. Estimates control for month fixed-effects, month-years fixed-effects, and interactions with red zones. Column 1 also controls for district-wise linear time trends. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**Table 7. Change in Consumption and Employment during and after the Lockdown**

|                                     | (1)<br>Weekly consumption<br>expenditure | (2)<br>Did not work for an<br>income |
|-------------------------------------|--|--------------------------------------|
| May 2020 (compared to pre-lockdown) | 13.87<br>(88.47)                         | 0.52***<br>(0.02)                    |
| Lockdown months                     | -863.38***<br>(77.76)                    | 0.26***<br>(0.02)                    |
| July 2020                           | -873.26***<br>(69.27)                    | 0.18***<br>(0.02)                    |
| September 2020                      | -607.48***<br>(85.91)                    | 0.17***<br>(0.02)                    |
| SHG household                       | -160.85*<br>(94.57)                      | -0.01<br>(0.02)                      |
| SHG * May 2020                      | -224.75*<br>(132.23)                     | 0.02<br>(0.03)                       |
| SHG * Lockdown                      | 144.41<br>(117.40)                       | 0.02<br>(0.03)                       |
| SHG * July 2020                     | 176.52<br>(120.23)                       | 0.06**<br>(0.03)                     |
| SHG * September 2020                | -6.17<br>(131.84)                        | 0.01<br>(0.03)                       |
| Observations                        | 17,789                                   | 8,067                                |
| R-squared                           | 0.05                                     | 0.13                                 |
| Dep. Var. Mean                      | 2030                                     | 0.427                                |

Robust standard errors in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1



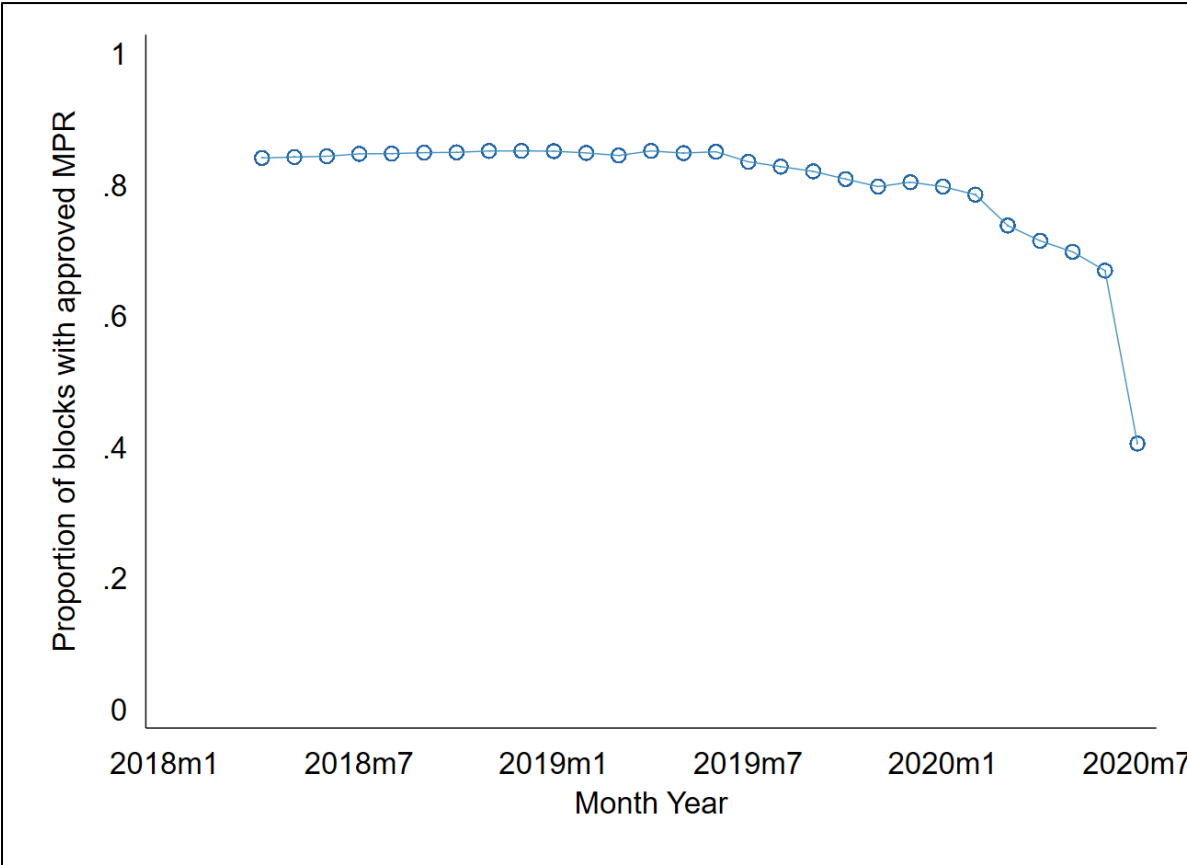
**Table 8. Change in Food Security during and after the Lockdown**

|                                    | (1)<br>Food Secure | (2)<br>Food Secure |
|------------------------------------|--------------------|--------------------|
| July 2020                          | 0.11***<br>(0.01)  |                    |
| September 2020                     | 0.11***<br>(0.01)  |                    |
| SHG household                      | -0.02*<br>(0.01)   |                    |
| SHG * July 2020                    | -0.01<br>(0.01)    |                    |
| SHG * September 2020               | 0.01<br>(0.02)     | 0.00<br>(0.01)     |
| Received food assistance from SHGs |                    | 0.07***<br>(0.02)  |
| Observations                       | 12,493             | 7,623              |
| R-squared                          | 0.04               | 0.02               |
| Dep. Var. Mean                     | 0.748              | 0.791              |

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

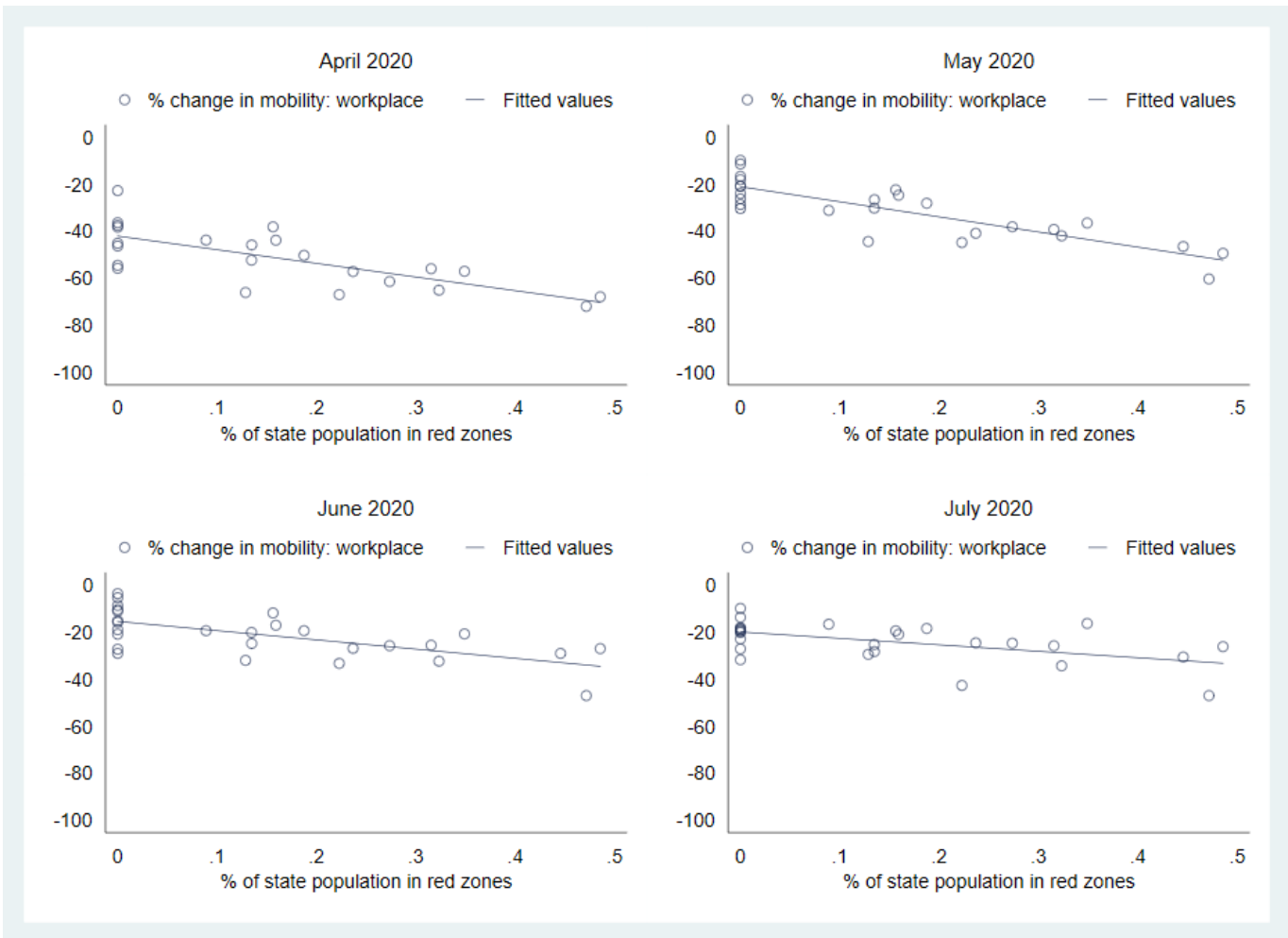
# Appendix

Appendix Figure 1. MPR Reporting by Month-Year

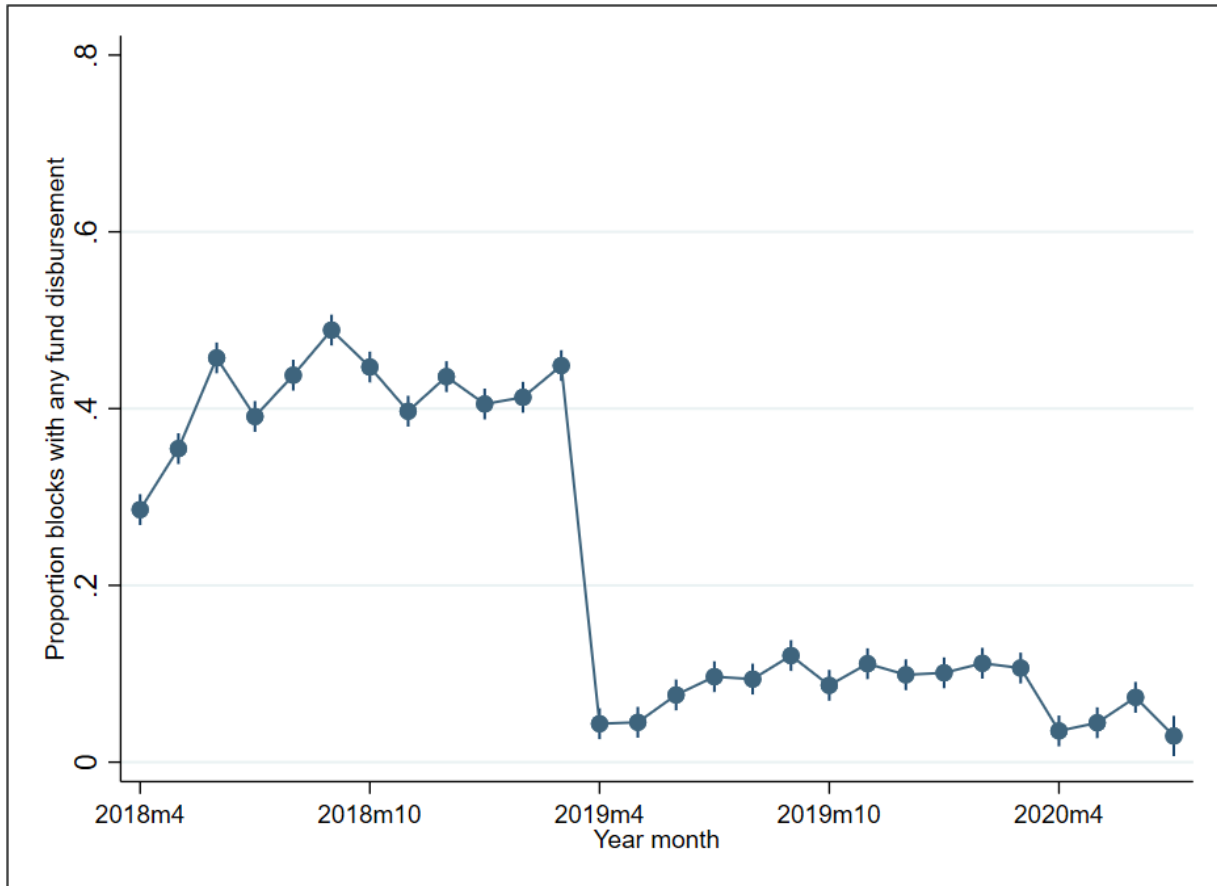


As shown in the figure, the proportion of blocks with approved MPR is lower for more recent months suggesting a lag between data entry and data approval.

## Appendix Figure 2. Workplace Mobility and Containment Zone



**Appendix Figure 3. Trends in Fund Disbursement**



The graph shows that while about 40% of blocks disbursed at least some funds in 2018, fund disbursement among the blocks in our sample has been relatively low starting fiscal year 2019-20, with further decline in 2020-21, albeit a small increase in June 2020. The low rates are not completely surprising given the variation in NRLM start year across blocks.

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