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Accountability in the delivery of guaranteed employment through MGNREGA in rural India

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Abstract

We use the uneven roll-out of accountability measures to identify their impact on the provision of guaranteed employment in rural Andhra Pradesh and Telangana, India. The public information campaign in the first stage of the accountability intervention led treated households to increase workdays during the non-lean agriculture season. This timing, contrary to the interests of local employers, suggests a more demand-driven provision of days worked. After the addition of an NGO supported grievance mechanism, treated households also work relatively more days during the lean season. These estimates, based on three rounds of Young Lives survey data, suggest that the combination of accountability measures enhanced the fulfillment of work entitlements. The paper further discusses the implementation of India's workfare program, accountability failures, and the design of the accountability measures.

Keywords: Administrative processes, Corruption, Information and Knowledge, Labor Supply, Workers' Rights

JEL Code: D73, D83, J22, J83

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1 Introduction

Lack of accountability is a common reason for the failure of anti-poverty programs and laws in developing countries (Burguet et al. (2016)). The Mahatma Gandhi National Right to Employment Guarantee Act (MGNREGA) in India, is one of the world's biggest public works schemes, covering around 11 percent of the world's population, and accounts for a significant proportion of India's annual public spend (Niehaus and Sukhtankar (2013)). Yet, even over 17 years into its implementation, the Act suffers from leakages, low participation rates and the rationing of work (Sukhtankar (2016); Dutta et al. (2014); Shariff (2009)).

Common cited reasons for this lack of accountability include lack of awareness by beneficiaries, lack of independent monitoring of agent behavior, lack of redress grievance mechanisms and disempowered clients. For instance, Dutta et al. (2014) and Jha et al. (2015) identify the lack of information awareness on MGNREGA by potential beneficiaries as one of the barriers in ensuring the successful implementation of the act. Ravallion et al. (2013) find that while people were aware that MGNREGA existed, there was low knowledge on the details of the act.

While promising, the effectiveness of information campaigns to redress these issues in the delivery of development programs is not clearly established in the empirical literature. On one hand, Banerjee et al. (2015) find that providing information directly to citizens is cost-effective in improving government performance. The findings by DiRienzo et al. (2009) indicate that information awareness by beneficiaries can limit the discretionary powers of the government, as it increases the transparency of the scheme, enabling a more efficient delivery of the scheme. Banerjee et al. (2020) find that making information available on a real-time basis reduced leakage of payments in MGNREGA and thereby costs, however recipients' benefits were unclear.

On the other hand, Banerjee et al. (2010) and Ravallion et al. (2013) find that awareness, while necessary, may not be sufficient to overcome issues of accountability. In a randomized control trial study on an information awareness campaign on MGNREGA in Bihar, India, Ravallion et al. (2013) find that while the information campaign increased

knowledge of the act, it did not translate into improving the performance of the scheme in Bihar. Ravallion et al. (2013) argue that for information to influence the implementation of a program, individuals need to be empowered enough to actually put the information to use. However, there is little empirical evidence on how information in the hands of individuals mobilized to use the information affects the prevalence of corruption. In addition, there is limited evidence on the impact of grievance redress mechanisms on program delivery (Ringold et al. 2012).

In this paper, we contribute to the empirical evidence on bottom-up monitoring approaches for public work schemes. We focus on a sequence of two accountability measures that aim to empower beneficiaries to access their entitlements. Drèze (2023) argues that this active participation by beneficiaries in MGNREGA is central to its functioning. Households are first exposed to an information campaign, which is in a second step complemented by a grievance mechanism. The grievance mechanism is facilitated by an NGO and can be used if a household's rights are not upheld. While the first measure increases household access to information on their entitlements, the second measure changes how beneficiaries can interact with the system when they have a problem. Through this, both measures increase the expected cost of deviation (corruption) for the local MGNREGA agent.

Using three rounds of survey panel data, we test the impact of the information and grievance mechanism by observing the total and seasonal distribution of days worked through MGNREGA. Given the sufficient shelf of work projects in Andhra Pradesh (Leelavathi and Hanumantha Rao (2010)), we follow Sukhtankar (2016) and attribute the initially low number of days worked through MGNREGA to deviations in the provision of labor on the village level. Therefore, we hypothesize that lower local corruption leads to, first, an increase in the total number of days worked and, second, the time of the year when households access work. During the 9 months of the non-lean season, local employers have an interest to pressure agents into withholding work to reduce competition. Therefore, without this pressure, employment through MGNREGA should be higher and more evenly spread throughout the year as the wage is typically higher than

for alternative employment.

Our identification strategy exploits the spatial variation in the implementation of the two-step accountability intervention as not all areas were treated by the NGOs.[1] Using one round of household panel data before the information campaign, one between the two treatments, and one round after the implementation of the grievance mechanism, we can compare the development of MGNREGA outcomes of those exposed to the accountability intervention, to those in non-treatment areas. We observe no significant difference between treated and non-treated areas across several outcome variables before treatment, with the average of total days worked through MGNREGA being almost identical (41.45 to 41.72 days per year).

Our data set combines information on treated areas and household data from the Young Lives panel survey for Andhra Pradesh and Telangana.[2] The survey in India collects extensive demographic, consumption, income, assets and job information at the individual and household level since 2002, from urban and rural household in 20 mandals. We limit our analysis to 1225 rural households in the younger cohort that did not move mandals during survey rounds, 3,4, and 5.[3] This is merged with state government data on the MGNREGA information campaign, which was carried out in 6 of these 15 mandals between 2011 and 2016.[4]

The first main result from this paper is treated households worked more days during

[1]From the monitoring and evaluation data from the Government, we do not know for most areas why they did not get treatment. Some NGOs received more areas than they could cover. Other areas were not allocated for treatment by the state government even if an NGO applied for it. We see no significant statistical differences between the areas before treatment. More details are given in Section 5.1.

[2]Prior to June 2, 2014 Andhra Pradesh and Telangana were one state. After the split, while the names of the department and NGO coalition changed, their structure did not. Therefore given this, we expect that implementation in both states should have continued as such, as did the intervention. The sample framework of the study was designed to account for the three different regions of AP, where one was Telangana.

[3]We only use the younger cohort from the Young Lives survey as the survey followed the child versus the household, therefore given that children from the younger cohort were born in 2001-2002, the survey for this cohort was more likely to track the same household over all rounds, while for the older cohort, it switched households if the child married and started their own household, then the survey followed them, versus their parent's household.

[4]A mandal is the second layer of the three-tier local Panchayat Raj system within an Indian State. A mandal has an administrative capital, other villages and potentially other towns within its boundaries. capital state. The population size and number of villages in a mandal can vary. For instance, Mandasa mandal in Andhra Pradesh has 83 villages with a total of over 17,000 households (`http://vlist.in/sub-district/04776.html`), while Bukkapatnam has a total of 41 villages with a total of 40,000 households (`http://www.onefivenine.com/india/villag/Anantapur/Bukkapatnam`).

the non-lean season post phase one of the intervention, the roll-out of the information campaign, compared to households in non-treated areas. We find no significant impact on days worked during the lean season in this round. This result suggests that a more demand driven allocation of days worked, where households are more likely to receive workdays when they request it, versus only during the lean season, which only constitutes 3 months of the year but contained 58% of days worked before the intervention.

After phase two of the intervention, where the grievance mechanism is added, we find that treated households work more total days in the year compared to non-treated households. This increase is now driven by total lean days worked. When we look at this result by gender, we find that the estimated effect for men is insignificantly larger.

We carry out several robustness checks and confirm that the results hold. When we run the same estimation for households who had a job card in at least one survey round, our results hold. When we vary the estimation model used in the paper through using household fixed effects and a Poisson estimation, we find that the results hold.

We interpret the implementation of MGNREGA in Andhra Pradesh (AP) in a principal-agent-client setting: government, local agent, and beneficiaries. The government-designated agent, who implements the program at the local level, can take self-motivated decisions that result in the misallocation or loss of resources to the client (Burguet et al. 2016). This local agent can collude with local elites or engage in favoritism with clients (Dutta 2015). As a result of this, a local agent may shirk their duty (Reinikka and Svensson 2011), take bribes (Mauro 1995) or misuse their role for private gains (Treisman 2000). The costs of this misalignment undermine the benefits of the intended programs. Jha et al. (2015) find significant program capture of the Rural Public Works and Food for Work Programs in India, reflecting a degree of collusion between program agents and the village elite.

Ravallion et al. (2013) argue that any initiative to address accountability must make the client's demand of program entitlements binding. From the supply side, one way to do this is through increasing the expected cost of deviating for local implementers. The discretionary power of local agents, along with the clarity and complexity of the program,

are factors that influence their expected cost of deviating. Therefore, an accountability initiative that makes the rules of a program clearer and simpler, while also creating a mechanism to hold local agents to account when they do not follow the rules can decrease the discretionary power of a local agent through increasing their expected cost of deviating (Ryvkin and Serra 2012).

The accountability campaign studied here, as rolled out in Andhra Pradesh, addresses several of the concerns on the distribution of MGNREGA work and on the effectiveness of enforcement measures. First, information is provided directly to eligible households informing them on their specific rights to demand work. This empowers households to demand a right from a local agent, who in turn is aware of the new information symmetry. Second, if households feel their rights have not been respected, they are given the opportunity to complain in monthly meetings with NGOs in their own village. As these NGOs operate on a supra-village level, the discretionary power of the local agent and risk of collusion between agents and village elites is lowered. As a third leg of the accountability campaign, these two mechanisms were preceded by the grouping of individual households to facilitate the supply of labor. Although arguably an important element, this component is discussed but not empirically evaluated in this paper as it was implemented in all areas. Importantly, all accountability measures had the political support of the state government.

The remaining part of this paper is structured as follows. Section 2 provides a short overview of MGNREGA in India, its impacts, and the barriers in implementation. As part of this section, we go into detail on how MGNREGA is implemented in AP and on the accountability intervention rolled out by the state. Section 3 goes over the conceptual framework used in the paper and how it applies to the implementation of MGNREGA in AP. This is followed by Section 4, which provides an overview of the data used in this paper and summary statistics of the main variables of interest. Section 5.1 lays out the identification strategy and Section 5.2 presents the empirical specification used to study the impact of the accountability intervention on MGNREGA outcomes. The main results are presented in Section 6, which includes robustness checks. Section 7 concludes the

paper.

2 The role of accountability in guaranteeing employment in India

In 2005, the Indian Government passed the National Rural Employment Act, where any rural household could demand up to 100 days of employment per year. The Mahatma Gandhi National Right to Employment Guarantee Act (MGNREGA), as it was later called, was designed as a demand driven Act with universal access across rural India.[5] Through this Act, the Government provides the rural poor with a type of self-targeting social safety net underpinned by guaranteeing work for a set number of days.[6] Over the last two decades, MGNREGA generated a lot of interest as one of the largest anti-poverty programs in the world, between 2012 - 2013, it had a cost of US $7.5 billion, which was around 0.5 percent of India's GDP for that year (Klonner and Oldiges 2022).

Yet, there are glaring problems in the implementation of the Act 17 years after it was started. For instance, participation remains uneven across India. For states such as Haryana and Maharashtra, the participation rate for MGNREGA is between 9 - 12 percent for those classified as poor (Dutta et al. 2014).[7] Tellingly, even states that share a border have a major disparity between them on the take-up of the scheme and the number of workdays obtained. For instance, the participation rate was only 8.2 percent in Karnataka, while for AP it was over 38 percent (Shariff 2009). Yet, given that Karnataka has a higher percent of households below the poverty line than AP, one would expect it to have more households taking up MGNREGA work.[8]

[5] In 2006, MGNREGA was rolled out in the 200 poorest districts in India, 130 more districts were added in 2007 - 2008, while the remaining districts came under MGNREGA in 2008-2009 (Azam 2012).

[6] Other critical features of this Act was that it set a minimum wage and conferred other workplace rights on workers, including childcare, workplace insurance, distance to work and so forth.

[7] Any household in a rural area is eligible to work under MGNREGA. The participation rate captures the extensive margin of the outcome variable, as it tells us the percent of rural households who take up work under MGNREGA. This does not tell us anything about the number of days a household works under MGNREGA. It only reflects from all eligible households, what percent actually takes up work under the Act. The percent of poor in Haryana is 11.16, while in Maharashtra it is 17 percent (Reserve Bank India 2013).

[8] In 2013, 9.2 percent of households in AP were classified as poor, compared to 20.9 percent in Karnataka (Reserve Bank India 2013).

On the intensive margin, the total number of workdays obtained in 2018 through the scheme is also lower than the 100 day threshold for all states (Reddy et al. 2021).[9] For instance, in AP and Telangana, rural households obtained an average of 51 and 47 days of work respectively from the potential 100 days available to them (Reddy et al. 2021).[10] This could suggest that for those who are participating, either they are not demanding additional work and/or the demand for work is not being met. The evidence seems to suggest the latter explanation. Nationally, of the total number of rural households who demanded work, only 56 percent received work (Dutta et al. 2014). One of the cited reasons for this gap is that local officials are rationing the number of workdays given (Sukhtankar 2016). In the 200 poorest districts of India, only 3.2 percent of the registered households received the guaranteed annual 100 days of employment (Gaiha et al., 2010).[11]

Even with implementation gaps, the impact of MGNREGA on poverty is substantial. Zimmermann (2013) found that MGNREGA acts as a safety net for households in the face of a negative economic shock. In the short run, Deininger and Liu (2013) found that participants increased their level of protein and energy intake, while in the medium term they accumulate more non-financial assets. Imbert and Papp (2015) found that in the early implementation districts private sector wages increased, which resulted in large welfare gains for the poor even beyond the program effects of MGNREGA. This impact by MGNREGA is not just limited to the current generation. MGNREGA increases the educational outcomes of children whose mothers participated in the scheme (Afridi et al. 2012). Similar to the above, Klonner and Oldiges (2022) found that MGNREGA led to large increases in seasonal consumption, as well as increases in adolescent schooling, in states where the program was implemented intensely.

Given that the existing research points to the important welfare impacts of MGNREGA on households, a key question is why do households who want to work not obtain this work, and whether they obtain the work when they need it, and what can be done to facilitate this demand. Making MGNREGA function more efficiently can have a sig-

[9] In this paper, intensive margin refers to the the number of days worked.

[10] This means that these households had 49 to 53 more days that they were entitled to work.

[11] Even by 2021, only 4.1 percent of households in India had obtained the 100 days of guaranteed employment (Bhardwaj and Deshpande 2021).

nificant impact on poverty. Ravallion et al. (2013) argue that poverty could be reduced by up to 12 percentage points as a result of income gains from MGNREGA in Bihar.

2.1 Implementation of MGNREGA in Andhra Pradesh and Telangana

Andhra Pradesh (AP) and Telangana in South India, are two of the stronger MGNREGA performers (Dutta et al. 2014). With both states having between 61- 65 percent of their population rurally based (Office of the Registrar General & Census Commissioner, India 2011, Government of Telangana 2022), MGNREGA has important implications for rural households and poverty levels.

Since the introduction of MGNREGA, AP, which at that point included Telangana, was active in the prevention of corruption in MGNREGA. First, it took a transparent approach by making all program information accessible and traceable online for the public (Deininger and Liu 2013).[12] In addition, to minimize potential for corruption in payments the state streamlined the payment system (Deininger and Liu 2013). Furthermore, in 2008, AP started implementing social audits to uncover any fraud or other problems in the delivery of the Act, an initiative that both States maintained post separation.

Yet, even with these steps, Masiero and Maiorano (2017) argue that the power structure of MGNREGA at the village level left scope for local capture. In either State, as per the Act, any rural household can demand up to 100 days of paid work per year. Also, per the guidelines of the Act, any rural household who wants to work must first apply for a job card.[13] Once this household receives a job card, they can apply for work.

It is in the application for work where these power dynamics become important. In order to apply for work, until 2010, a household had to submit a written application to the Field Assistant, the key government appointed official at the village level.[14] A duplicate

[12] As early as 2007, this online system was piloted in AP (Kumari et al. 2008). Both States maintained the online systems but with difference domain names

[13] It is important to note that a job card can only be obtained at the household level and that the 100 days is per household, not individual.

[14] The Field Assistant is the main government official who manages the scheme at the village level and is the point of contact for the households (Masiero and Maiorano 2017). The roles and responsibilities of the Field Assistant: "Assists the Panchayat Secretary, supervises the works, maintains the muster

of the submitted application is created, which the Field Assistant signs and then submits to the Mandal level official.[15] At this point the application is computerized and entered into the MGNREGA monitoring system. Within 15 days of the application, work must be sanctioned, if not the household has the right to apply for (less attractive) unemployment benefits.[16]

Therefore, in both States, the Field Assistant has a certain degree of discretionary power on what information is being inputted into the computer system (Masiero and Maiorano 2017). Masiero and Maiorano (2017) argue that the system in AP enables the Field Assistant to retain their power at the village level and undermine the empowerment of households who want to work. This then has important implications for the number of workdays supplied to these jobseekers and when these workdays are supplied.

The Accountability Intervention: Information Awareness and Monitoring Campaign

In their commitment to ensuring that MGNREGA benefits reached the intended beneficiaries, in 2010, the AP Government took their approach one step further and introduced a bottom-up accountability mechanism.[17] The Government ran an intervention that reformed how clients could access work under MGNREGA and that provided information to clients on MGNREGA, including on their entitlements and how to address their MGNREGA related grievances. They set up a civil society and government collaboration called the AP NGO Alliance (APNA) to deliver this intervention.[18] APNA's original objective was to "mobilize the rural poor and empower them to fully use the entitlements provided

rolls, gives mark outs at work sites, maintains the register of material procured, maintains the village information boards." (Government of Andhra Pradesh 2013).

[15] As mentioned earlier, a mandal is the second layer of the three-tier local Panchayat Raj system within an Indian State.

[16] It would seem that there is little incentive to push for an unemployment payment given the following two points. First according to the Act this unemployment payment is only a fraction of MGNREGA wages per day (Babu et al. 2014). Second, each day of unemployment payment counts towards the 100 days of entitled workdays.

[17] This intervention was separate to social audits and it was implemented in addition to the ongoing social audit program.

[18] This initiative was separate and independent of the social audit intervention. After the formation of Telangana, they called their collaboration Telangana NGO Alliance (TSNA).

by the Act" (Government of Andhra Pradesh 2010b).

This intervention had significant potential to change the power structure of MGNREGA implementation through changing how informed jobseekers were, how they applied for work and how Field Assistants were monitored. First, as part of this intervention, the structure of how work was applied for was reformed. Starting in mid-2010, APNA NGOs organized individual households into fixed labor groups (FLGs). Between 10 to 15 households were brought together into one FLG. Once a household was part of an FLG, they had to apply for work together to the Field Assistant and they no longer could apply for work as an individual household. This step is very important because it addresses a supply side constraint, in order for work to be sanctioned a minimum number of households have to apply to make the work feasible. By having a group that fulfills the minimum threshold number, it makes it easier to supply the work. This step of the intervention was done in all areas of AP.[19] If there was no alliance NGO covering a particular mandal, the Field Assistant reorganized participating households into FLGs.

The next component of the intervention was to increase knowledge on the Act. Between May 2011 and August 2012, APNA NGOs carried out an information awareness campaign to the FLGs. The purpose of this campaign was to educate the workers on their rights and entitlements under the Act and on how they could access their entitlements from the Act (Government of Andhra Pradesh 2010b).[20] Each FLG had to select four representatives that would attend these sessions. A total of five FLG groups would attend each session, so the NGO trained 20 people per session.[21] The NGO would send their staff member (who was not from the village) to the village to provide the training. Guidelines from the government were provided to each NGO on the materials to be covered but how the NGO delivered the information was up to them. At the end of the training, the NGO had to submit a completion report back to the government. As for the FLGs representatives, their role was to share the information with those not at the training and then apply the information for the benefit of their FLG group.

[19]This also applies to Telangana as it was then part of AP.

[20]Information in the paragraph is based on GO 80 (Government of Andhra Pradesh 2010b).

[21]Around 50 to 65 households would be covered by each training that was given as part of the information campaign.

The final component of the intervention was a monitoring and grievance mechanism, where NGOs had monthly meetings with the groups to check in on implementation of the Act in the village. Through these meetings the NGO would note down grievances, observe irregular behavior and carry out fact-finding missions on any complaints brought up about implementation of MGNREGA within the village. This component of the intervention was initiated in September 2013, and continued till September 2016.[22]

As an example for the work done by NGO's work in the field, *Watershed Support Services And Activities Network* (WASSAN)'s description of its activities under APNA helps clarify both what the intervention entailed, as well as why such an intervention had the potential to change the power structures at the village level, particularly the Field Assistant's level of discretionary power. According to WASSAN, first, they trained FLGs on how to maintain and update records at the village level. Second, they conducted regular FLG meetings at the village level. Third, they supported FLGs in identifying what works could be done on their land. Fourth, they encouraged job card holders to use the toll-free complaint number in voicing their grievances. Fifth, they mobilized wage seekers to be involved in following up with the mandal administration for the implementation of identified works.[23]

3 Conceptual Framework

The impact of any accountability measure depends on its nature and the situation on the ground, for instance, whether information is given publicly (Reinikka and Svensson 2011; Banerjee et al. 2015) and whether citizens or government employees are targeted (Banerjee et al. 2015). In this section, we explore how the accountability intervention implemented can change the outcomes of MGNREGA.

We analyze accountability in the setting of a principal-agent-client framework. In the implementation of MGNREGA, the principal, the central and state government, laid out

[22]In AP it was conducted by NGOs who were part of APNA, while in Telangana it was done by those who were part of TSNA.

[23]This information is taken from National Consortium on MGNREGA (2016) at `http://www.nregaconsortium.in/wassan-and-partners/`.

the conditions under which the client can access work and the total days they are entitled to each year. The principal wants the program to be implemented as designed, yet is unable to oversee the rollout of the program in all locations, especially at the village level where the program is implemented.

To ensure implementation, the principal can hire an agent to oversee the implementation and to ensure that clients access the program according to the rules and regulations of the program. In this way, the principal delegates decision making power to the agent.[24] The agent, appointed by the principal for the implementation of MGNREGA at the village level in AP, is the field assistant. This field assistant serves for as many years as the field assistant wants unless the principal decides to replace the assistant. The field assistant receives a wage for each period for performing the delegated responsibilities.[25] If the field assistant is replaced, any future income is forfeited.

The client is entitled to a certain level of benefit. If a client chooses to work under MGNREGA, they have the right to demand 100 days of entitled work per household per year at a guaranteed wage. The field assistant then provides the number of days demanded. Supply of work should not be an issue because the Act stipulates a shelf of works that can be given when work is requested. Leelavathi and Hanumantha Rao (2010) find that there were enough works on the shelf to meet the demand for work in Andhra Pradesh.

However, there is a problem of information asymmetry. First, the client and agent may have vested interests which the principal does not know about and cannot observe. The principal only observes realized outcomes, not actual demand and supply. Second, the client may not be fully aware of the all the rules and regulations governing their entitlements. On the other hand, the field assistant knows the client's entitlements and

[24]For this section we draw on the paper "The Microeconomics of Corruption. A Review of Thirty Years of Research." by Burguet et al. (2016).This paper reviews microeconomic research on corruption, laying out the main theoretical models of corruption, the incentives for bureaucracies, the measurement of corruption and finally the empirical evidence on corruption.

[25]The government has two purposes in setting wage, to prevent corruption and to ensure that the official implements the program as designed (Burguet et al. 2016). We assume that the type of wage provided is a reservation wage that doesn't stop corrupt officials from accepting bribes or deviating from program design (Burguet et al. 2016). In order to prevent officials from taking any bribe Burguet et al. (2016) state that the principle has to pay an efficiency wage

level of benefits.

Given the client's and principal's information deficit, the field assistant may decide to deviate from the behavior intended by the principal, with implications for the client (Burguet et al. 2016). More specifically, the field assistant can collude with local elites to the disadvantage of the client, but also engage in favoritism with clients (Dutta 2015). As a result, a field assistant may shirk their duty (Reinikka and Svensson 2011), take bribes (Mauro 1995) or misuse their role for private gains (Treisman 2000). However, depending on the type of decision made by the field assistant, the outcome may also be beneficial to some of the clients (Burguet et al. 2016). From the principal's perspective, either deviation from the program design is not viewed as optimal (Burguet et al. 2016).

The field assistant's decision can be seen as a function of costs and benefits (Ravallion et al. 2013). Benefits include avoiding a penalty by a powerful local constituency, such as the local farmers, if the provision of work or the timing of work is not in this constituency's interest. A potential penalty can take different forms, such as reputation slander or putting additional pressure on the field assistant by various members of the group.

On the other hand, the cost of deviation is determined by the field assistant's level of discretionary power, how clear the rules of the program are, how simple it is to access the entitlements under the program, and how easy it is to hold the field assistant to account, if they do not abide by the rules. A higher discretionary power or unclear program rules lower the cost for the field assistant (Ryvkin and Serra 2012). Therefore, any accountability initiative that makes the rules of a program clearer, that makes knowledge on the program more public or that decreases the discretionary power of a field assistant should raise the expected cost of deviation (Ravallion et al. 2013; Ryvkin and Serra 2012). This should in turn impact the outcome of the program.[26]

If the field assistant decides to deviate, the field assistant could decide to ration the workdays by either not providing the full 100 days even if demanded or only providing work at certain times. For example, the field assistant may not provide work during

[26]Furthermore, if an initiative changes future expectations about discretionary power and the cost of deviation, this would also impact current behavior (Niehaus and Sukhtankar 2013). The intuition laid out by Niehaus and Sukhtankar (2013) is that the expectation of future wages affects the incentive to cheat today. In their paper, they find that future rent expectations matter on the agents current behavior.

harvest times, even if the client has demanded work. During harvest, local farmers need to hire people, so they may put pressure on the field assistant to withhold work during this period. As a result, one would see very few days of work being provided in the non-lean seasons, July to February, and the majority of the days during the lean season, March to June.

We argue that as the information campaign directly tackles public knowledge, the expected cost of deviating should increase.[27] The clients now have increased knowledge on the Act, including on what their entitlements are, the associated rules and regulations and a better understanding on the complaints mechanism. Furthermore, given that the information was provided through public training, both the field assistant and the client now know that the other knows the entitlements and rules of the program. This should decrease the discretionary power of the field assistant.

Ravallion et al. (2013) state that for an information intervention to be effective, in addition to being informed, clients need to be empowered to use this information. As discussed earlier, prior to the information campaign being rolled out in 2011 - 2012, AP had a change in how households applied for work, resulting in a change in group size in 2010. This change from households applying individually for work, to applying as a group of 10-15 households, should have directly affected the expected cost of deviation in all areas because it affected the workers level of empowerment factor. In addition, it might have increased the effectiveness of the information campaign.

The level of empowerment of workers should increase, as they no longer act as individual households but as a collective. If the group decides to react to a deviation by the field assistant, they no longer need to act alone. The second implication of this is that if the field assistant was previously favoring one client (household), given that client is now part of a group of 15 households, the field assistant has to deal with all 15. If the field assistant continues to favor one, it is very likely that the others will complain. Furthermore, if the field assistant favors one group, it is likely other groups will notice

[27]This is because if the field assistant is engaging in an indiscretion it is more likely post intervention that the behavior comes to light and the punishment at the village level is usually the replacement of the agent.

and complain as a group.

The next important shift for the agent's expected cost of deviation is the monitoring component of the accountability intervention. Through regular monitoring by an external actor, an NGO, of the agent's behavior, any irregularities could be highlighted to the principle through the established grievance mechanism, thereby increasing the agent's potential cost. Yet given that this only happened in 2013, we would expect that if there are any changes in MGREGA outcomes pre-2013, these outcomes are driven by the change in group size and public knowledge, while any changes post 2013 are additionally driven by the introduction of this new monitoring component.[28] As the accountability campaign was not rolled out in all areas, we see the differences between MGNREGA outcomes between treatment and non-treatment areas as caused by an increase in the knowledge of MGNREGA post intervention, and, after 2013, by the introduction of the monitoring component.[29]

We argue that as a result of this increase in knowledge and monitoring in treatment areas, the expected cost of deviation in these areas for the field assistant should increase. Under the assumption of effective supply side constraints, that is, before the intervention, workers wanted to work more days and spread the days more evenly over the year, we hypothesize the following changes in work patterns.

- *Hypothesis 1:* An increase in the expected cost of the agent's deviation increases the total days worked in treatment areas, within the entitled limit (100 days).
- *Hypothesis 2:* An increase in the expected cost of deviation increases the number of days worked in the non-lean season in treatment areas.

[28] The size of the punishment did not change but post-intervention clients were mobilized and informed about their rights, entitlement and that there was a grievance mechanism. In addition, now the field assistant is aware that the clients know their rights and, post 2013, that their actions are being monitored. Therefore, the likelihood of punishment changes, i.e. the expected cost of deviation, even if the size of punishment has not. As it is more likely in the case of an indiscretion that clients complain or act on it, or for the field assistant the threat point of complaining and punishment has increased. Therefore, the expected cost of deviation changes through the channel of increased knowledge, level of empowerment and enforcement.

[29] All areas were affected by the change in group size, therefore if there is any difference in MGNREGA outcomes, this difference should be driven by the change in level of awareness and the ability of APNA to monitor the agent's behavior.

4 Data Description

For this paper, we use three of the five rounds of the Young Lives panel survey from AP and Telangana, India.[30] Since 2002, the survey in India has collected extensive demographic, consumption, income, assets, and job information at the individual and household level from 3000 households in 87 villages from 20 mandals across seven districts in AP and Telangana.[31] Of these mandals, five are urban and are therefore not included in this study as MGNREGA is only implemented in rural areas. The survey is representative of the geographical regions and the poverty distribution within the two states (Galab et al. 2011).

For the main estimation model, we use a panel of 1,225 households, collected from Young Lives rounds three to five. Since 2009/10 (Round 3), the survey collected information on MGNREGA, including total number of workdays obtained under MGNREGA for each individual in the household, as well as total days worked by lean and non-lean seasons.[32] This data was also collected in 2013/14 (Round 4) and 2015/16 (Round 5). With these three rounds of data, we are able to look at the total days worked under MGNREGA and by season across all areas. For our main regressions, our sample consists of all rural households who did not move between Round 3,4 and 5.

Table 1 shows us that by Round 3, 85 percent of households in our sample had job cards. This increased to 93 percent by Round 4 and to 95 percent by Round 5. From Table 1, one can see that between 2009 (Round 3) and 2015 (Round 5), the number of households with job cards engaging in MGNREGA work decreased from 70 to 67 percent. For those that did work, the total number of days they worked in the prior 12 months

[30] As mentioned earlier, in 2002 when the first round of the survey was collected, AP and Telangana were one State. In 2014 they were split into two. Though the sample framework of the study was designed to account for the three different regions of AP, where one was Telangana, so we can control for this through including a regional dummy.

[31] In each village around a 100 households are surveyed. The attrition rate for the households is relatively low, with an overall attrition rate of between 0% - 2% between the four rounds (Galab et al. 2014).

[32] While the 2006/2007 (Round 2) survey also collected MGNREGA data, MGNREGA had not been rolled out in all survey areas. MGNREGA had been running for under a year in 4 of the 6 rural districts included in the Young Lives survey. In 2006, Anantapur, Kadapa, Mahbubnagar and Karimnagar were brought under MGNREGA, in 2007 Srikakulam was brought in and West Godavari was brought in by 2008 (Berg et al. 2018)

Table 1: Descriptive Statistics on MGNREGA, Round 3 & 4, Young Lives Survey Data

	Full Sample Mean	Round 3 Mean	Round 4 Mean	Round 5 Mean
NREGA Figures by Round				
Got Job Card	0.91	0.85	0.93	0.95
Did NREGA work	0.68	0.70	0.68	0.67
Got NREGA Unemployment Benefit	0.07	0.04	0.10	0.05
Total NREGA days worked	42.81	41.56	46.31	40.55
Total NREGA Non-Lean Days	11.90	17.51	9.91	8.26
Total NREGA Lean Days	30.92	24.08	36.39	32.29
NREGA Days by Females	25.32	24.39	26.88	24.70
NREGA Lean Days by Females	18.44	14.15	21.46	19.70
NREGA Non-Lean Days by Females	6.89	10.24	5.42	5.00
NREGA Days by Males	17.59	17.19	19.44	16.14
NREGA Lean Days by Males	12.58	9.93	14.95	12.87
NREGA Non-Lean Days by Males	5.01	7.26	4.49	3.27
Observations	3,675	1,225	1,225	1,225

increased from 41.6 to 46.3 days between 2009 and 2013, before decreasing to 40.6 in 2016.[33] Table 1 also shows us that the total days worked in the non-lean seasons, which is from July to February, decreased between the rounds, while the days worked during the lean season increased overall from 2009. This seems to suggest that either people are only demanding working during the lean season, or that work is only provided during the lean season. Additionally, the days worked by women is higher than those worked by the men.

We merge the survey information with data obtained from Government orders and monitoring reports on which mandals received the accountability intervention, and by which NGO.[34] A significant number of NGOs applied to be part of APNA and 330 NGOs were accepted into the initiative (Government of Andhra Pradesh 2010a). A total of 703 out of the 1098 mandals in Andhra Pradesh were included in this initiative (Government of Andhra Pradesh 2010a). Though not all who were included in the initiative implemented it. Based on MIS reports from the government, we are able to determine which mandals received the treatment and by which NGOs.[35] Of the 15 rural mandals in the Young Lives

[33]Round 3 was collected at end 2009-beginning 2010, Round 4 was collected end 2013-beginning 2014, Round 5 was collected end 2015-beginning 2016

[34]NGO's had to deliver the information training to all villages in a mandal from June 2011 to May 2012, while the monitoring and grievance component only started in 2013 and ran till 2016.

[35]Main reports used to obtain this information was R12.11.4 Grievance Report, R7.2 APNO NGO

survey, a total of 6 areas received the accountability intervention, while the other 9 did not.

5 Empirical Strategy

5.1 Identification - allocation of treatment

We use the spatial variation in the implementation of the accountability campaign to identify the impact of information awareness on MGNREGA outcomes. The variation in treatment arises from over-commitment of NGOs that were allocated more areas than they were able to deliver, or from non-allocation of areas by the state government.

Generally, we do not know why an area did not get treatment. Following up with NGOs on this, one explanation NGOs received for non-allocated areas was if a mandal bordered another state, it was not allocated. From mandals that were not allocated we can see that Gudibanda and Dhahur borders Karnataka, Mandasa borders Orissa, finally while Kataram doesn't border Maharastra directly it is just the next mandal over. This accounts for 4 of the 6 non-allocated mandals. Importantly, these mandals are not less accessible or remote than other mandals per se. For instance, Gudibanda is near Bengaluru in neighbouring Karnataka. We find no significant differences in the allocated versus non-allocated areas across the points raised below.

Other than this, we are not aware of a conceptual connection between the failure to provide treatment to an area and MGNREGA outcomes expected in the absence of treatment. We test and find no factors that statistically explain treatment allocation before treatment.[36] Given the considerations below, we conclude that our estimates reflect treatment effects and not diverging trends between areas.

In the following, we check our main concerns about potential endogeneity between MGNREGA outcomes and the probability of treatment. First, we compare the implementation of MGNREGA across treatment and non-treatment areas before treatment.

- Wise Performance Report, MIS reports of State and District level meetings which list NGOs who participated and mandals they were from in each State.

[36] As MGNREGA was not implemented in all areas prior to Round 2 (2006/2007), we are unable to test for parallel trends for our sample of treated and non-treated households

If there are large differences in MGNREGA outcomes between these areas, particularly on the intensive margin, areas might be structurally different in the implementation of MGNREGA and parallel trend assumptions are less likely to hold. Other areas of concern include whether treatment is determined by the reach of NGOs, where NGOs are more likely to treat areas if their presence in the area is high. This could also correlate with opportunity costs of taking up MGNREGA work if other options are available. In addition, access could determine treatment and harder to reach areas are less likely to be treated. We address these points below by comparing pre-treatment summary statistics, as well as through our robustness checks.

Table 2: Balance Table on MGNREGA, Non-treatment versus treatment, Round 3, 2010

	Full Sample Mean	Non-Treated Mean	Treated Mean	p-value
NREGA Figures				
Got Job Card	0.85	0.85	0.86	0.69
Did NREGA work	0.70	0.68	0.72	0.60
Got NREGA Unemployment Benefit	0.04	0.05	0.03	0.25
Total NREGA days worked	41.56	41.45	41.72	0.97
Total NREGA Non-Lean Days	17.51	16.40	19.11	0.38
Total NREGA Lean Days	24.08	25.10	22.61	0.59
NREGA Days by Females	24.39	25.00	23.50	0.70
NREGA Lean Days by Females	14.15	15.26	12.55	0.28
NREGA Non-Lean Days by Females	10.24	9.74	10.95	0.52
NREGA Days by Males	17.19	16.50	18.19	0.59
NREGA Lean Days by Males	9.93	9.84	10.05	0.92
NREGA Non-Lean Days by Males	7.26	6.66	8.13	0.34
Observations	1,225	724	501	

For the balance table standard errors are clustered at the community level.

We first address the performance of MGNREGA in treatment versus non-treatment areas. Table 2 tells us that treatment areas are not more likely to have job cards pre-intervention, compared to non-treatment areas. We do not find any significant differences in having done NREGA work in the prior 12 months for treated versus non-treated households, pre-intervention. Similarly for the intensive margin, there is no significant difference in the annual, lean or non-lean days they work between treatment versus non-treatment areas.

Another concern one may have is that NGOs are more likely treat a mandal if their

reach is high in the area. In the setup of the alliance, the criteria for participation in APNA from the Government was that while any NGO could apply to be part of APNA, they had to have experience working on rights-based issues. Round 2 of the Young Lives survey collected information on whether a locality had an NGO working there in 2002, and in 2006, they collected what type of NGO it was. Table 3 shows that the difference between treated and non-treated areas on whether an NGO is working in the area and by what type of NGO it is, including if it is a rights-based NGO, is not statistically significant.[37]

Table 3: NGO Figures, Non-treatment versus treatment, Round 3, 2010

	Full Sample Mean	Non-Treated Mean	Treated Mean	p-value
NGO Details				
NGO in area, 2002	0.48	0.40	0.59	0.16
NGO in area, 2006	0.48	0.43	0.55	0.37
Rights based NGO, 2006	0.13	0.12	0.15	0.79
Observations	1,225	724	501	

Standard errors are clustered at the community level. For this table, we only include households that have a job card or worked in all rounds

Another issue could be about the opportunity cost of taking up work under MGNREGA. One outside option for households is work in factories. We look at the difference in treatment versus non-treatment households in their access to a factory, as well as the difference in households with waged salary. Factories provide an option for longer term work for households. If a higher percentage of households work in a factory, maybe there is less demand for MGNREGA. What we find is that while non-treatment households are significantly more likely to have a factory within 5 km of their village, non-treatment households are not more likely to have waged non-agriculture employment nor salaried employment. In our estimations we control for having a factory within 5 km of their village.

Finally, it could be an issue of access. Treatment areas may be physically different to non-treated areas, which also could impact the outcome variables. Accessibility is

[37]These questions were only asked in the 2006 Young Lives survey, not in the follow-up surveys. While these numbers may have changed by Round 3 in 2009, we do not expect to see a big change given that the changes between 2002 and 2006 were relatively small.

key because areas that were less accessible may be harder to treat but also harder to implement MGNREGA in. To see if this is determining the delivery of the treatment, we look at access to these areas and the size of the mandals. When we look at accessibility, the key takeaway from Table 3 and Table 5 is that all these areas are accessible and we find no significant difference between areas in regard to motor accessibility. This is critical as an NGO would have to visit all parts of the mandal over the intervention years.

Table 4: Household & Village Characteristics, Non-treatment versus treatment, Round 3, 2010

	Full Sample Mean	Non-Treated Mean	Treated Mean	p-value
Household characteristics				
Female Household Head	0.05	0.06	0.04	0.13
Household Size	5.63	5.74	5.48	0.23
Household Head Years of Education	5.96	5.33	6.87	0.02
Household Head Age	38.68	38.87	38.42	0.60
Wealth Index of Household	0.45	0.46	0.44	0.28
Household was non-agri wage employment	0.23	0.24	0.21	0.36
Household was salaried employment	0.17	0.16	0.17	0.75
Village Characteristics				
Experienced Natural Disaster Prior Yr	0.39	0.40	0.39	0.95
Village is Motor Accessible	0.94	0.91	0.97	0.14
Village Has Factory	0.25	0.41	0.02	0.00
Observations	1,225	724	501	

Standard errors are clustered at the community level.

in regard to size, in Table 5, one can see that while the mean number of households in treated mandals is larger, the total number of villages in these mandals is almost the same. So, the number of villages that an NGO would need to cover in their training would be the same. While the mean number of villages for treatment areas is higher than non-treatment mandals, the number of households in non-treatment areas is larger. On average treatment mandals are not very different in terms of accessibility or size to non-treated mandals.

5.2 Estimation Specification

The conceptual framework laid out that the accountability intervention should affect the expected cost of deviating for the field assistants who supply work to the clients. We do

Table 5: Mandal Descriptive Statistics, Non-treatment versus treatment, Round 3, 2010

Mandal Name	Total Number of Households	Total Number of Village	Distance from District HQ	Year MGNREGA Started
Amrabad	10,469	44	115 km	2006
Atlur*	6,771	99	33 km	2006
Bukkapatnam*	9,712	41	68 km	2006
Buttayagudem*	12,813	50	69 km	2008
Chapad*	9,595	62	40 km	2006
Devarkadara	9,851	39	25 km	2006
Dharur	7,851	56	37 km	2006
Gudibanda	9,917	58	110 km	2006
Kataram	7,719	58	100 km	2006
Kotabommili	15,871	43	39 km	2007
Mandasa	17,814	75	103 km	2007
Nawabpet	8,929	72	27 km	2006
Regidiamadalavalasa	15,451	66	37 km	2007
Seethampeta*	11,388	113	55 km	2007
Vajrakarur*	9,671	28	51 km	2006
Mean of Treated Mandals	9,992	66	53 km	
Mean of Non-Treated Mandals	11,541	58	66 km	

Note: * indicates treated mandals. Information on each mandal comes from `http://www.onefivenine.com/` and `http://www. census2011.co.in/census/state/andhra+pradesh.html`

not measure this increased cost of deviating for the field assistant directly and turn to MGNREGA outcomes instead that should reflect better compliance of field agents with local demand.

A successful accountability intervention should affect the total days supplied to households who want to work. If one can see an increase in the number of days worked (Hypothesis 1), or an increase in the total days provided during the non-lean season (Hypothesis 2), this would signal an increase in the field assistant's expected cost of deviating.

Each household is entitled to a total of 100 days of work yearly, however, the average household in our sample only takes up around 40 days of MGNREGA work. If this difference is driven by the local agent's rationing of days, then a relative increase in MGNREGA workdays after treatment provides evidence that the expected cost of deviation for agents has increased. The distribution of work better reflects demand now.

We also expect a take-up of MGNREGA throughout the year since similar jobs for many households are less well paid. If we see an increase in non-lean days worked this, therefore, signals that work allocation reflects demand better. Households are able to obtain work when they want work.

We estimate a linear difference-in-differences model as our main specification, while providing alternative specifications as robustness checks. For each of the dependent variables we use the empirical specification laid out in Equation 1.

$$y_{iat} = \beta_t TA_i \times R_t + \delta TA_i + \rho_t R_t + X_{iat}\gamma + \alpha_a + \epsilon_{iat} \quad (1)$$

where y_{iat} is our outcome of interest for household i, living in area a, at time t. TA_i is a dummy variable that indicates whether household i is located in a treated area. R_t are dummies for survey round, that is time period. α_a are area or regional fixed effects. X_{iat} contains further household and regional control variables. This includes the education level, age and gender of household head, the total size of the household, the wealth index of the household, and whether the household experienced a natural disaster. These variables help control for any changes in the household's circumstances, separate to the impact of the accountability intervention, that affects MGNREGA take up of work. On the village level, we include whether there is a factory within 5 km of the village and whether the village is accessible to a motorized vehicle. This helps address whether there are any time varying factors at the village level that could affect the likelihood of work alternatives and therefore the take-up of work under MGNREGA. ϵ_{iat} is the individual error term and standard errors are clustered at the community level.

The β_t coefficients, in Equation 1, are our main estimates of interest. For round 4, β_4 tells us to what extent there is a differential change in the work obtained by households in treatment areas after the information campaign, while β_5 captures the impact of implementing the NGO monitoring and grievance mechanism, in addition to long-term effects by the information campaign.

Finally, we also estimate the impact of the campaign on the extensive margin, the likelihood of the household having a job card and then we look at whether the intervention affects their likelihood of working in the prior 12 months. As the information was provided to already participating groups of MGNREGA households, we do not expect the intervention to affect our extensive measures of MGNREGA.

6 Results

6.1 Main results

Table 6 provides our key estimates. Across all areas, we see an increase in the number of days worked during the lean season from survey round 3 to round 4 and 5. However, in non-treatment areas, this largely reflects a shift from the non-lean to the potentially less desirable lean season. By contrast, in the treatment area, the days worked in the non-lean season are estimated to remain largely stable. Overall, total days worked are estimated to increase in treated and non-treated areas.[38] However, the estimated increase of 6.5 days (round 4) and 4 days (round 5) in the non-treatment areas is lower than the equivalent numbers in the treatment areas, where households work 14 and 15 days more than in round 3.

The significant increase in days worked during the non-lean season between areas following the information component of the treatment is consistent with Hypothesis 2, that the information campaign affected the timing of the supply of MGNREGA jobs. This suggests that MGNREGA is closer to the envisioned demand driven program, instead of being supply driven.

The lean season is when there is little agriculture work to be obtained, hence any MGNREGA work created at this time creates little competition for other employers looking to hire the same workers. The non-lean season on the other hand accounts for 9 months of the year and during this time there is the planting, harvesting and other farm-related activities. One would expect though that not all these months have a need for labor, therefore there will be times during the non-lean seasons where people would want work under MGNREGA. Given that MGNREGA is meant to be a demand driven program, households should be provided work when they request it, regardless of season. Yet, households may not be aware of this, or the field manager may not feel pressure to provide it. In either case, more informed job groups are more likely to request work outside of the lean season and/or field managers may not feel they can deny it, if they

[38] In the raw data, they increase in round 4 but decrease in round 5.

Table 6: MGNREGA Outcomes

	(1)	(2)	(3)
	Ttl days worked	Ttl days lean	Ttl days non-lean
Treatment Area (TA)	1.154	0.928	0.178
	(6.10)	(4.53)	(2.91)
TA × Round 4	7.759	1.668	6.148*
	(8.48)	(6.93)	(3.49)
TA × Round 5	10.925**	7.598*	3.384
	(5.32)	(4.19)	(4.10)
Round 4	6.521	14.370***	-7.902***
	(4.26)	(3.58)	(2.41)
Round 5	3.854	10.508***	-6.711***
	(3.87)	(3.23)	(2.33)
Observations	3,673	3,673	3,673
Regional Dummies	Yes	Yes	Yes
Household and Village Controls	Yes	Yes	Yes
Treatment in 4+5	18.68	9.267	9.531
P value	0.151	0.337	0.167
Mean Control R4	44.16	37.49	6.663
SD Control R4	47.94	44.12	17.88
Mean Control R5	36.35	30.28	6.066
SD Control R5	39.08	33.79	16.83

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

Standard errors are clustered at the community level.

know the job cardholders are aware of their rights.

Round 5 reflects the combined impact of the information campaign and of the NGO monitoring and grievance mechanism. We find that households in treatment areas increase their days worked by almost 11 days, relative to the non-treated group, during this survey round. This result is consistent with Hypothesis 1. We interpret the statistically significant and large increase as a success of the accountability measures in lowering corruption in the implementation of MGNREGA at the village level. This increase is primarily driven by an increase in total days worked during the lean season.

Last, we explore the extent to which the accountability intervention changes the likelihood to participate in MGNREGA on the extensive margin. From column (1) in Table 7, we see that households in treatment areas see no significant increase in the likelihood of having a job card. As discussed previously, given how the accountability intervention targeted households already working, this result is not surprising. We expect the accountability intervention to influence MGNREGA outcomes on the intensive margin. Similarly, in column (2) of Table 7 we find that treatment does not affect the likelihood of a household working under MGNREGA in the prior 12 months.

6.2 Gender and Alternative Estimation Specifications

In our sample, women work almost 96,000 days within a MGNREGA program, while men work around 66,000 days. Men have a slightly lower ratio of lean to non-lean days, that is 2.5 as opposed to 2.7 for women. Women are expected to demand more MGNREGA work as the wage differential to the regular labor market is larger. However, it is not clear from this whether easier access to guaranteed work affects the female-male ratio of days worked. If supply is low pre-intervention, the limited days might have been filled by women within households. An increased supply would then lead to a catch-up effect by men working more days. However, other factors could have led to female days being relatively more restricted relative to their higher demand.

The estimates in Table 8 are not clear-cut. The estimated treatment effect is higher for men, but the difference is not statistically significant. However, since women work

more days pre-intervention, we may conclude that men have a larger relative increase in days worked.

To test how the choice of functional form and estimation method may be driving our results, we first run a linear time and household fixed effects model and find that our positive impact on total days worked in Round 5 remains for treated households. However, the impact on days worked during the non-lean season in Round 4 is no longer significant (Table 9).

Next, we re-estimate our results with a difference-in-difference Poisson for total days worked, and during the lean and non-lean season. As this is testing the proportional effect, we see a much stronger change for the non-lean season. Households are estimated to double the days worked during the non-lean season in Round 4, after the information component of the campaign. This is in line with the result from our main specification. Due to the higher baseline days worked during the lean season, the proportional increase is much smaller and also not significant in the Poisson specification shown in Table 9, Column 4-5. In Round 5, we find that the total number of days are estimated to be about 30 percent higher in the last round, after the introduction of the information and grievance mechanism. Again, this result is in line with our main specification. The smaller increase in the previous round is not statistically significant, in line with the linear specification shown before.

We also run three robustness tests to gauge how sensitive our results are to changes in the sample in Table 10 in the appendix. We first restrict our sample to households that had at least a job card in one round (Column 1-3), and next we restrict our sample to households that had job cards in all the three survey rounds (Round 3,4, and 5). We find that in limiting our sample to having a job card in at least one round to all rounds, the magnitude of our effect increases, while the level of significance stays the same or increases for our impact on days worked in the non-lean season during Round 4 and total days worked in Round 5. Overall, these estimates, therefore, confirm the patterns observed under the main specification.

7 Conclusion

In this paper, we explore how an accountability intervention provided to beneficiaries, who are empowered to use the information, affects the implementation of a national employment guarantee Act. The empirical literature has been inconclusive on the role of information and monitoring mechanisms in increasing accountability in the delivery of anti-poverty programs. On one hand increased beneficiary awareness has been found to increase the accountability and delivery of programs (Banerjee et al. 2015; DiRienzo et al. 2009), on the other hand, others have found that increased awareness by itself is not enough (Banerjee et al. 2010; Ravallion et al. 2013). This second body of research has suggested that for information campaigns to be effective, individuals need to be empowered to use the information (Ravallion et al. 2013).

This paper contributes to the empirical literature by showing that an information campaign can affect the delivery of a program when individuals are organized to use the information. Exploiting the variation in the implementation of an accountability intervention in Andhra Pradesh and Telangana, India, this paper analyses the difference in MGNREGA outcomes for households who were exposed to this intervention versus household who were not exposed to it. Prior to the roll out of the intervention, all rural households in these areas accessing MGNREGA work were reorganized into working groups. It is likely that the structure of the working groups makes these households more mobilized to benefit from the intervention.

We find that as a result of this intervention, when households are better informed of their rights under MGNREGA, it affects the timing of when households work. We find evidence that post the information campaign in Round 4, the total days they work in the non-lean season increases relatively, though the increase in the total days they worked and during the lean season is not statistically significant during this round. The effect during the non-lean season suggests that MGNREGA is working more as the demand driven act it was designed, instead of limited by supply on the village level. We also find evidence that once an NGO monitoring and grievance mechanism is introduced, total days worked over 12 months increase for treated households overall.

This finding has important implications for the implementation of MGNREGA in other states of India. It provides evidence that the combination of informing workers and providing them with access to a monitoring and grievance mechanism can affect the ability for households to access work when they want it. This also has implications for other anti-poverty programs in developing countries. In addition, it would be important to conduct research on similar interventions, in order to see if these results hold across different programs and country contexts.

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Figures

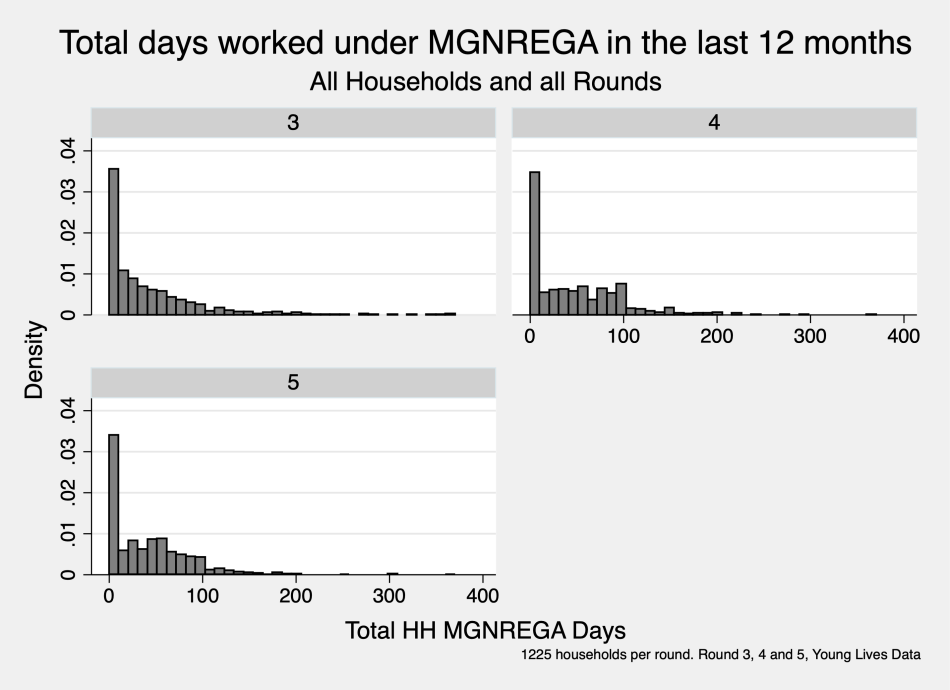
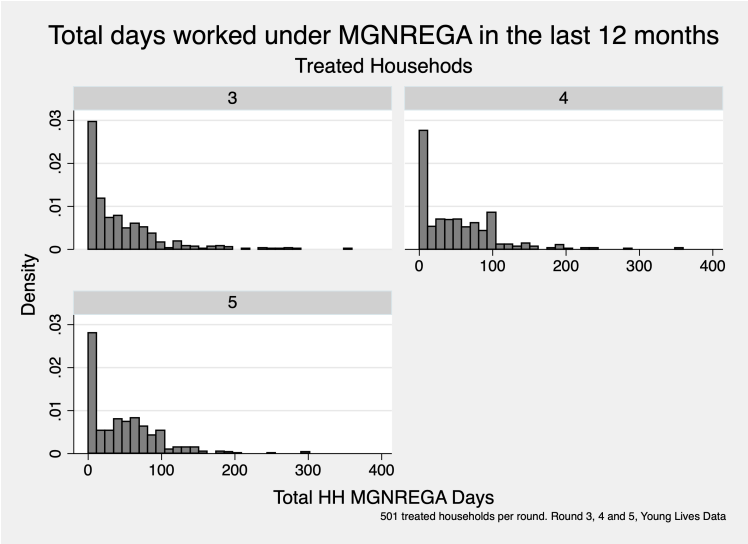


Figure 1: Total days worked under MGNREGA in the last 12 months by Round



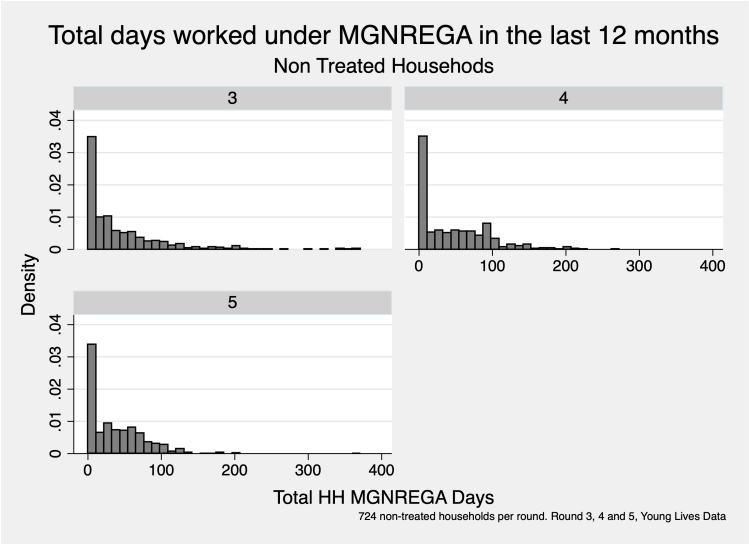


Figure 2: Total Days Worked for treatment and Non-treatment Households by Survey Round

Tables

Table 7: Extensive Margin: Having a Job Card & Working in the last 12 Months

	(1)	(2)
	JCard	NREGA Work
Treatment Area (TA)	-0.053	0.035
	(0.04)	(0.06)
TA × Round 4	-0.012	0.058
	(0.03)	(0.07)
TA × Round 5	-0.027	0.006
	(0.03)	(0.05)
Round 4	0.119***	-0.014
	(0.02)	(0.04)
Round 5	0.167***	0.038
	(0.03)	(0.05)
Observations	3,673	3,673
Regional Dummies	Yes	Yes
Household and Village Controls	Yes	Yes
Treatment4+Treatment5	-0.0385	0.0634
P value	0.531	0.580
Mean Control R4	0.936	0.646
SD Control R4	0.244	0.478
Mean Control R5	0.959	0.657
SD Control R5	0.199	0.475

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

Standard errors are clustered at the community level.

Table 8: MGNREGA Outcomes by Gender

	(1)	(2)	(3)	(4)	(5)	(6)
	Fem Ttl Days	Fem Lean Days	Fem N-Lean Days	Mal Ttl Days	Mal Lean Days	Mal N-Lean Days
Treatment Area (TA)	1.161	0.645	0.517	-0.117	0.244	-0.361
	(3.54)	(2.48)	(1.74)	(3.01)	(2.32)	(1.42)
TA × Round 4	3.493	1.051	2.442	4.378	0.655	3.724**
	(4.70)	(3.72)	(2.02)	(4.19)	(3.44)	(1.81)
TA × Round 5	4.201	2.731	1.470	6.306**	4.374**	1.932
	(3.16)	(2.48)	(2.26)	(2.73)	(2.05)	(2.05)
Round 4	3.080	8.094***	-5.014***	3.410	6.298***	-2.889**
	(2.54)	(2.10)	(1.48)	(2.09)	(1.71)	(1.12)
Round 5	3.032	7.247***	-4.215***	1.304	3.800**	-2.496**
	(2.27)	(1.93)	(1.24)	(2.00)	(1.61)	(1.22)
Constant	30.205***	18.206***	11.999***	22.075***	13.713***	8.362***
	(6.13)	(4.34)	(2.49)	(4.86)	(3.38)	(2.14)
Observations	3,673	3,673	3,673	3,673	3,673	3,673
Regional Dummies	Yes	Yes	Yes	Yes	Yes	Yes
HH and Village Controls	Yes	Yes	Yes	Yes	Yes	Yes
Trt4+Trt5	7.694	3.782	3.912	10.68	5.029	5.656
P value	0.294	0.478	0.319	0.100	0.291	0.102
Mean Control R4	26.82	22.67	4.148	17.34	14.82	2.515
SD Control R4	31.64	27.91	13.28	25.20	23.01	7.897
Mean Control R5	23.84	19.78	4.064	12.99	10.99	2.003
SD Control R5	29	24.34	11.88	23.43	21.27	7.943

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

Standard errors are clustered at the community level.

Table 9: Robustness checks with Estimation Variations

	(1) Fixed Effects Ttl days worked	(2) Fixed Effects Ttl days lean	(3) Fixed Effects Ttl days n-lean	(4) Poisson Ttl days worked	(5) Ttl days IRR	(6) Poisson Ttl days lean	(7) Ttl days IRR	(8) Poisson Ttl days n-lean	(9) Ttl days IRR
Treatment Area (TA)				0.019	1.019	-0.002	0.998	-0.061	0.941
				(0.15)	(0.150)	(0.19)	(0.190)	(0.18)	(0.167)
TA × Round 4	5.997	0.857	5.199	0.169	1.184	0.089	1.093	0.700***	2.014***
	(8.203)	(6.895)	(3.334)	(0.19)	(0.227)	(0.25)	(0.271)	(0.26)	(0.533)
TA × Round 5	10.682**	8.065*	2.671	0.259**	1.295**	0.255	1.290	0.529*	1.698*
	(5.348)	(4.541)	(3.943)	(0.13)	(0.168)	(0.16)	(0.212)	(0.32)	(0.540)
Round 4	3.333	12.224***	-8.934***	0.152	1.164	0.467***	1.596***	-0.752***	0.471***
	(3.897)	(3.441)	(2.238)	(0.10)	(0.117)	(0.11)	(0.183)	(0.22)	(0.102)
Round 5	-3.087	5.980*	-9.106***	0.080	1.083	0.365***	1.441***	-0.699***	0.497***
	(3.690)	(3.345)	(2.080)	(0.10)	(0.105)	(0.12)	(0.167)	(0.22)	(0.108)
Observations	3,673	3,673	3,673	3,673	3,673	3,673	3,673	3,673	3,673
R-squared	0.017	0.043	0.051						
Number of childid	1,225	1,225	1,225						
Regional Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Household and Village Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

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

Standard errors are clustered at the community level.

Table 10: Robustness checks with Sample Variations

	(1)	(2)	(3)	(4)	(5)	(6)
	JC one round min			JC all rounds		
VARIABLES	Ttl days Worked	TotDaysLeanMG	TotDaysNonLeanSMG	Ttl days Worked	TotDaysLeanMG	TotDaysNonLeanSMG
Intervention2	3.425	2.412	0.962	2.733	1.791	0.884
	(6.71)	(5.02)	(3.10)	(7.24)	(5.38)	(3.46)
Treated households round 4	7.945	1.758	6.247*	10.909	4.020	6.957*
	(8.87)	(7.26)	(3.66)	(9.13)	(7.52)	(4.02)
Treated households round 5	11.412**	8.100*	3.370	15.618***	11.726**	3.960
	(5.51)	(4.45)	(4.37)	(5.64)	(4.46)	(4.85)
Round = 4	5.981	14.407***	-8.482***	0.863	11.035***	-10.236***
	(4.37)	(3.71)	(2.50)	(4.03)	(3.47)	(2.80)
Round = 5	2.312	9.760***	-7.508***	-4.393	5.080	-9.542***
	(3.89)	(3.30)	(2.40)	(3.81)	(3.27)	(2.65)
Constant	46.914***	27.794***	19.058***	46.080***	27.415***	18.589***
	(9.81)	(6.98)	(4.14)	(11.00)	(7.75)	(4.65)
Observations	3,490	3,490	3,490	3,130	3,130	3,130
Regional Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Household and Village Controls	Yes	Yes	Yes	Yes	Yes	Yes
Treatment4+Treatment5	19.36	9.858	9.618	26.53	15.75	10.92
P value	0.153	0.328	0.187	0.0552	0.121	0.177
Mean Control R4	46.06	39.11	6.951	46.79	39.29	7.505
SD Control R4	48.06	44.35	18.21	48.69	44.93	18.99
Mean Control R5	37.92	31.59	6.329	37.46	30.77	6.685
SD Control R5	39.16	33.91	17.14	37.02	31.22	17.56

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

Standard errors are clustered at the community level. Columns 1-3 include household with at least 1 job card in the 3 rounds, while column 4-6 have households that have jobs cards in all rounds.