E-governance, Accountability, and Leakage in Public Programs: Experimental Evidence from a Financial Management Reform in India

Banerjee, Duflo, Imbert, Mathew, Pande (Oct 2016)

Presented by: Vittoria Dicandia

December 11, 2018
The project in a nutshell

- Field experiment of (temporary) reform in within-state fund-flow of India’s federal workfare program MGNREGS.
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- Evaluate impact of increased transparency on corruption
- Reform features:
  - linked fund flow to incurred expenditures
  - reduced numbers of intermediaries involved in fund disbursement
- Findings:
  - lower fund leakage
  - no negative impact on real outcomes
  - no improvement in responding to villager needs
Implementation bottlenecks constrain effectiveness of social programs

Empirical studies on corruption:
- effects of info disclosure, increase in monitoring, monetary incentives [Ferraz and Finan, 2011]
- effects of change in number of functionaries and jurisdictions [Burgess et al., 2012]
- effects of reducing bureaucratic discretion [Duflo et al., 2011]

other aspects of bureaucratic architecture are rarely studied!
The project’s contribution

- Growing literature on administrative reforms in settings with limited state capacity [Bo et al. (2013), Duflo et al. (2013)]
- Recent works on use of information technology or e-governance
- Most related study: Muralidharan et al. (2014)
  - same program, but different reform in different state
  - focus on disbursement process rather than fund flow
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  - same program, but different reform in different state
  - focus on disbursement process rather than fund flow
- Ability to use multiple data sources (including administrative data) and to exploit large scale experimental administrative reform
Background - Decentralized programs

- Involve transfer from higher level of government to local implementing body
- Standard practice: cash-advance systems
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  - delays in payments make programs not implementable
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- Standard practice: cash-advance systems
  - communication is time-consuming with low quality infrastructure
  - delays in payments make programs not implementable
- Local authorities have power over transfers
  - slows the process down
  - increases rent-seeking
Background - MGNREGS

- Established in 2005
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  - provide them work on local infrastructure projects
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largest social protection program in the world
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- Local Gram Panchayat (GP) officials:
  - register beneficiaries
  - provide them work on local infrastructure projects
- largest social protection program in the world
- heterogeneity in implementation quality across states
- focus on Bihar, poor state with poor MGNREGS performance
Fiscal architecture

1. Tranche-wise transfers from central government to state
   • first based on anticipated demand and previous year expenditures
Fiscal architecture

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   - GP originate fund requests that are aggregated up the chain at beginning of each financial year
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     state $\rightarrow$ district $\rightarrow$ block $\rightarrow$ GP $\rightarrow$ workers
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2. Within-state transfers
   - GP originate fund requests that are aggregated up the chain at beginning of each financial year
   - funds move down the administrative hierarchy: state $\rightarrow$ district $\rightarrow$ block $\rightarrow$ GP $\rightarrow$ workers
   - discretion in passing on funds
   - some units lack funds, others accumulate idle amounts
Sample

- Selected 12 districts in the state
  - rural population of 33 million
  - more than 900 thousand MGNREGS workers
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  - rural population of 33 million
  - more than 900 thousand MGNREGS workers
- \( \frac{1}{3} \) blocks per district selected for treatment
- 69 treatment and 126 control block

Analysis from July 2011 till January 2014:
- Pre-reform: 2011 - 2012
- Reform: 2012 - 2013
- Post Reform: 2013 - 2014
Pre-reform system (2011-2012)

Figure 1: MGNREGS Fund-flow in Control Blocks
Post-reform system (2012-2013)

Figure 2: MGNREGS Fund-flow in Treatment Blocks
Reform implementation

Unaffected elements:

- GP send checks and list of beneficiaries to local bank/post office which credits workers’ accounts
- State made payments for materials through CPSMS with districts and blocks as intermediaries
- GP officials required to document jobs spells
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Implementation wasn’t easy nor straightforward

- Lack of adequate IT infrastructure
- Government froze program, GP functionaries were on strike
- Banks slowed down payments process
- ...
Status quo regime - Set up

- Official at tier $i$ of administrative hierarchy: $P$ (GP), $B$ (block), $D$ (district), $S$ (state)
Status quo regime - Set up

- Official at tier $i$ of administrative hierarchy: $P$ (GP), $B$ (block), $D$ (district), $S$ (state)
- $P$ in charge of operations:
  - skim off amount $s$
  - exerting $\frac{1}{2}cs^2$ non-contractible non-pecuniary effort cost
  - with penalty $\pi T s$ in expectation
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  - skim off amount $s$
  - exerting $\frac{1}{2}cs^2$ non-contractible non-pecuniary effort cost
  - with penalty $\pi^T s$ in expectation
- $B$ and $D$:
  - sign off on fund claim
  - commit ex-ante to price $p_i$ for approving every rupee of funds skimmed by $P$
Status quo regime

- $P$ chooses $s$ to maximize for $i = B, D$:

$$ (1 - \pi^T) s - p_i s - p_{-i} s - \frac{1}{2} cs^2 $$
Status quo regime

- $P$ chooses $s$ to maximize for $i = B, D$

\[
(1 - \pi^T)s - p_is - p_is - \frac{1}{2}cs^2
\]

\[\Rightarrow s = \frac{1 - \pi^T - p_B - p_D}{c}\]
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Status quo regime

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\[
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Hence, from solution symmetry, we get:

\[ p_i = (1 - \pi^T) / 3 \]
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and therefore:

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\[ i = B, D \text{ earn:} \]

\[ Y^{iT}(\pi^T) = p_is = \frac{(1 - \pi^T)^2}{9c} \]
Status quo regime - Cont’d

• Hence, from solution symmetry, we get:

\[ p_i = \frac{(1 - \pi^T)}{3} \]

• and therefore:

\[ s = \frac{(1 - \pi^T)}{3c} \]

• \( i = B, D \) earn:

\[ Y^{iT}(\pi^T) = p_is = \frac{(1 - \pi^T)^2}{9c} \]

• \( P \) earns from skimming:

\[ Y^{PT}(\pi^T) = s(1 - 2p_i) = \frac{(1 - \pi^T)(1 + 2\pi^T)}{9c} \]
New regime - Case 1

1. We have $\pi^N > \pi^T$

2. P doesn’t have technological capacity to unilaterally claim the money: **need to collude with** $B$
   
   - $D$ is cut out, i.e. $p_D = 0$
   - Repeating steps as in the status quo regime:
     
     $$Y^{BN}(\pi^N) = \frac{(1 - \pi^N)^2}{4c}$$
New regime - Case 1

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2. P doesn’t have technological capacity to unilaterally claim the money: need to collude with $B$
   - $D$ is cut out, i.e. $p_D = 0$
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$$Y^{BN}(\pi^N) = \frac{(1 - \pi^N)^2}{4c}$$

and

$$Y^{PN}(\pi^N)\frac{(1 - \pi^N)(1 + 2\pi^N)}{4c}$$
Comparison

\[ Y_{BT}^{T} = \frac{(1 - \pi^T)^2}{9c} \quad \text{vs.} \quad Y_{BT}^{N} = \frac{(1 - \pi^N)^2}{4c} \]

\[ Y_{PN}^{T} = \frac{(1 - \pi^T)(1 + 2\pi^T)}{9c} \quad \text{vs.} \quad Y_{PN}^{N} = \frac{(1 - \pi^N)(1 + 2\pi^N)}{4c} \]

2 countervailing effects:
- negative from increase in penalty from skimming
- positive from not having to pay \( D \) (decrease in denominator)

For corruption to decrease, increase in \( \pi \) must be very large in proportional terms
New regime - Case 2

1. $\pi^N > \pi^T$
2. $D$ extracts rents with probability $\alpha < 1$
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If no cap on $p_D$, same solution as status quo:

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Only penalty rate is changed $\implies$ skimming declines
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Unrealistic: if $\alpha \rightarrow 0$, $p_D \rightarrow \infty$

$\implies P$ will pay large amounts out of pocket whenever $D$ has chance to extract rents
New regime - Case 2, Realistic

1. $\pi^N > \pi^T$

2. $D$ extracts rents with probability $\alpha < 1$, up to $\bar{p}_D$
New regime - Case 2, Realistic

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2. $D$ extracts rents with probability $\alpha < 1$, up to $\bar{p}_D$

- $B$ now maximizes:

$$p_B \frac{1 - \pi^N - p_B - \alpha \bar{p}_D}{c}$$

- Repeating same procedure as before:

$$Y^{BN}(\pi^N, \alpha) = \frac{(1 - \pi^N - \alpha \bar{p}_D)^2}{4c}$$
New regime - Case 2, Realistic

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and

$$Y^{PN}(\pi^N, \alpha) = \frac{(1 - \pi^N)(1 + 2\pi^N)}{4c}$$
New regime - Case 2, Realistic

For $\pi^N < 1 - \alpha \bar{p}^D$:
- increase in $\pi^N$ reduces skimming and earnings for $B$ and $P$
- decrease in $\alpha$ increases all 3
New regime - Case 2, Realistic

For \( \pi^N < 1 - \alpha \bar{p}^D \):

- increase in \( \pi^N \) reduces skimming and earnings for \( B \) and \( P \)
- decrease in \( \alpha \) increases all 3
- ambiguous net effect!
New regime - Case 2, Realistic

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Who is affected the most?
New regime - Case 2, Realistic

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Who is affected the most?

$$\frac{Y^{BN}(\pi^N, \alpha)}{Y^{PN}(\pi^N, \alpha)} = \frac{1 - \alpha \bar{p}_D + \pi^N}{1 - \alpha \bar{p}_D - \pi^N}$$
New regime - Case 2, Realistic

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Ambiguous effect again! $\Longrightarrow$ increase in transparency doesn’t necessarily reduce corruption
Data sources

1 Daily financial database associated with CPSMS system
Financial database

- daily credits and debits of each GP savings account
- no distinction between material and labor expenses
- no identification of transfer recipients
Data sources

1. Daily financial database associated with CPSMS system
2. Public accessible electronic data collection system (nrega.nic.in)
category-wise expenditures at the aggregate fiscal year level:
- unskilled labor
- material
- skilled labor
- administrative expenses

beneficiary details
- who has worked in household
- duration and dates of work
- wages paid
Data sources

1. Daily financial database associated with CPSMS system
2. Public accessible electronic data collection system (nrega.nic.in)
3. Socio-Economic Caste Census (SECC)
SECC

Content:
- conducted in 2012, covers 16480 villages in 195 blocks
- include name and age of members of each household

Use:
- match villages with those in dataset 2
- match household names with job-cards in dataset 2

Possibility for errors, but no reason for consistent differences between treatment and control groups
Data sources

1. Daily financial database associated with CPSMS system
2. Public accessible electronic data collection system (nrega.nic.in)
3. Socio-Economic Caste Census (SECC)
4. Affidavit data on GP and block official assets
Affidavit data

Self-reported data on

- personal assets, both movable and immovable
- for all employees of GP and block official assets
Affidavit data

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- for all employees of GP and block official assets

Caution needed but it’s still a useful signal
Data sources

1. Daily financial database associated with CPSMS system
2. Public accessible electronic data collection system (nrega.nic.in)
3. Socio-Economic Caste Census (SECC)
4. Affidavit data on GP and block official assets
5. Independent survey conducted by authors
Independent survey

Main feature:

- Conducted in May-July 2013
- randomly sampled 2 GP per block and 25 households per GP
- total of 10,036 in 390 GPs
- goal to measure participation, employment and payments in MGNREGS
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- total of 10,036 in 390 GPs
- goal to measure participation, employment and payments in MGNREGS

Caveats:

- Low participation in that period
- small sample size leads estimated effects to be imprecise
Randomization check

\[ X_{pd} = \alpha + \beta T_p + \eta_d + \varepsilon_p \]

regress GP treatment dummy and district FE on vector of baseline characteristics of GP \( p \) in district \( d \)

\( \beta \): pre-treatment differences
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\( \beta \): pre-treatment differences

- no significant differences in Census and survey data
- 13\% higher labor expenditure for treatment GP in public access database
- but spending was similar for CPSMS and no statistically significant difference in work days, workers or material exp
- conclude it’s a reporting error

Table 1
Financial data

\[ Y_{pdt} = \alpha + \beta T_p + \eta_d + \varepsilon_{pt} \]

- \( Y_{pdt} \) are balances, expenditures and total debit data
- errors are clustered at block level
- no other controls included
- perform this analysis using both CPSMS and public data portal
Financial data - CPSMS

<p>| Panel A: Total Debit from GP Accounts |</p>
<table>
<thead>
<tr>
<th>Treatment</th>
<th>Before</th>
<th>Set up</th>
<th>Intervention Period</th>
<th>After</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment</td>
<td>-0.502</td>
<td>0.0472</td>
<td>-1.039***</td>
<td>-1.267***</td>
</tr>
<tr>
<td>Mean in Control</td>
<td>14.37</td>
<td>4.122</td>
<td>5.394</td>
<td>4.146</td>
</tr>
</tbody>
</table>

<p>| Panel B: Closing Balance in GP Accounts |</p>
<table>
<thead>
<tr>
<th>Treatment</th>
<th>Before</th>
<th>Set up</th>
<th>Intervention Period</th>
<th>After</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment</td>
<td>-0.0843</td>
<td>0.191</td>
<td>-1.007***</td>
<td>-1.277***</td>
</tr>
<tr>
<td>Mean in Control</td>
<td>4.147</td>
<td>4.407</td>
<td>4.099</td>
<td>4.274</td>
</tr>
</tbody>
</table>

<p>| Panel C: Total Credit to GP Accounts |</p>
<table>
<thead>
<tr>
<th>Treatment</th>
<th>Before</th>
<th>Set up</th>
<th>Intervention Period</th>
<th>After</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment</td>
<td>-0.179</td>
<td>0.251</td>
<td>-2.192***</td>
<td>-1.249***</td>
</tr>
<tr>
<td>Mean in Control</td>
<td>15.27</td>
<td>4.282</td>
<td>5.146</td>
<td>4.006</td>
</tr>
</tbody>
</table>

Note: The unit of observation is a Gram Panchayat (GP). In Panel A the dependent variable is the sum of debits from the savings account of each GP for each period (in lakhs Rupees). In Panel B the dependent variable is the closing balance on the savings account of each GP at the end of each period (in lakhs Rupees). In Panel C the dependent variable is the sum of credits made to the savings account of each Panchayat for each period (in lakhs Rupees). Treatment is a dummy which is equal to one for the blocks selected for the intervention. All specifications include district fixed effects. Standard errors are clustered at the block level.
Financial data - program public data

<table>
<thead>
<tr>
<th>Pre-intervention</th>
<th>Set up and intervention</th>
<th>Post-intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
</tr>
<tr>
<td><strong>0.996</strong></td>
<td><strong>-2.270</strong></td>
<td><strong>-0.271</strong></td>
</tr>
<tr>
<td>(0.495)</td>
<td>(0.760)</td>
<td>(0.729)</td>
</tr>
<tr>
<td><strong>Observations</strong></td>
<td><strong>Mean in Control</strong></td>
<td><strong>Observations</strong></td>
</tr>
<tr>
<td>2,950</td>
<td>2,954</td>
<td>2,950</td>
</tr>
<tr>
<td>7.551</td>
<td>13.66</td>
<td>7.551</td>
</tr>
</tbody>
</table>

Panel A: GP Expenditures on labor from nrega.nic.in

Panel B: GP Expenditures on material from nrega.nic.in

Note: The unit of observation is a Gram Panchayat (GP) The dependent variables are expenditures from MIS reports for financial years 2011-12, 2012-13, 2013-14 (in lakhs Rupees). Data was downloaded from the MGNREGS website (nrega.nic.in) in November 2014. The intervention started in September 2012 and ended on March 31st, 2013. Treatment is a dummy which is equal to one for the blocks selected for the intervention. All specifications include district fixed effects. Standard errors are clustered at the block level.
### Beneficiary outcomes

Was there less work done or just less ghost work?

<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
<td>(4)</td>
<td>(5)</td>
</tr>
<tr>
<td><strong>Panel A: Days worked (nrega.nic.in)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Treatment</td>
<td>91.88</td>
<td>-130.3</td>
<td>-404.6*</td>
<td>-267.8</td>
<td>-672.4*</td>
</tr>
<tr>
<td></td>
<td>(530.3)</td>
<td>(111.5)</td>
<td>(227.6)</td>
<td>(163.3)</td>
<td>(363.6)</td>
</tr>
<tr>
<td>Observations</td>
<td>2,959</td>
<td>2,959</td>
<td>2,959</td>
<td>2,959</td>
<td>2,959</td>
</tr>
<tr>
<td>Mean in Control</td>
<td>10313</td>
<td>1058</td>
<td>2759</td>
<td>2269</td>
<td>5028</td>
</tr>
<tr>
<td><strong>Panel B: Days per working household (nrega.nic.in)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Treatment</td>
<td>-0.0269</td>
<td>-0.712</td>
<td>-0.286</td>
<td>0.187</td>
<td>-0.00410</td>
</tr>
<tr>
<td></td>
<td>(1.010)</td>
<td>(0.605)</td>
<td>(0.805)</td>
<td>(0.701)</td>
<td>(0.930)</td>
</tr>
<tr>
<td>Observations</td>
<td>2,952</td>
<td>2,514</td>
<td>2,728</td>
<td>2,717</td>
<td>2,868</td>
</tr>
<tr>
<td>Mean in Control</td>
<td>36.85</td>
<td>17.35</td>
<td>29.14</td>
<td>25.14</td>
<td>33.65</td>
</tr>
<tr>
<td><strong>Panel C: Number of working households (nrega.nic.in)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Treatment</td>
<td>2.988</td>
<td>-3.132</td>
<td>-10.02</td>
<td>-8.342</td>
<td>-13.60*</td>
</tr>
<tr>
<td></td>
<td>(12.49)</td>
<td>(5.151)</td>
<td>(6.233)</td>
<td>(5.700)</td>
<td>(8.150)</td>
</tr>
<tr>
<td>Observations</td>
<td>2,959</td>
<td>2,959</td>
<td>2,959</td>
<td>2,959</td>
<td>2,959</td>
</tr>
<tr>
<td>Mean in Control</td>
<td>273.6</td>
<td>59.92</td>
<td>91.68</td>
<td>90.37</td>
<td>140.2</td>
</tr>
</tbody>
</table>

Note: The unit of observation is a Gram Panchayat (GP). In Panel A the dependent variable is the total number of days provided. In panel B the dependent variable is the total number of days provided to households reported to have worked. In panel C the dependent variable is the number of households reported to have worked. In panel D the dependent variable is the number of days worked by households who could not be matched with survey households. In Panel E the dependent variable is the number of days worked by households matched with survey households. The data was extracted from Job card information on the nrega.nic.in server. It covers the period from July 2011 to Sept 2013. Treatment is a dummy which is equal to one for the blocks selected for the intervention. All
Incidence of ghost workers

- For each GP compute match rate of job cards with names in SECC
- regress:
  \[ Y_{vd} = \alpha + \beta T_v + \eta_d + \varepsilon_{vt} \]
  1. for all reported working in MGNREGS
  2. for those only during intervention period
  3. for those working in post-reform period
- increase in math rate for single-worker households significant only in first 2 cases (1.87 p.p. and 1.81 p.p. respectively)
### Creation of physical assets

<table>
<thead>
<tr>
<th></th>
<th>Number Registered</th>
<th>Number found</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>All Projects (1)</td>
<td>All Projects (3)</td>
</tr>
<tr>
<td>Treatment</td>
<td>0.0494</td>
<td>0.309</td>
</tr>
<tr>
<td></td>
<td>(0.263)</td>
<td>(0.239)</td>
</tr>
<tr>
<td>Observations</td>
<td>390</td>
<td>385</td>
</tr>
<tr>
<td>Mean in Control</td>
<td>13.80</td>
<td>11.79</td>
</tr>
</tbody>
</table>

Note: the unit of observation is a Gram Panchayat (GP). The dependent variables are the number of projects registered in the public data portal (nrega.nic.in) on May 15, 2013 (1), the number of projects declared as ongoing in nrega.nic.in (2), the number of registered (3) and ongoing (4) projects found by surveyors in June-July 2013. Out of 5390 projects registered in nrega.nic.in for the 390 GP of the survey sample, a random sample of 3900 projects were surveyed (10 per GP). The number of projects found in the survey is scaled up using the number of registered projects divided by the number of sampled projects rate. 5 GP (28 projects) could not be surveyed. All specifications include district fixed effects.
Assets of MGNREGS functionaries

Figure 5: Asset of MGNREGS functionaries: during the intervention

Figure 6: Asset of MGNREGS functionaries: after the intervention

Source: Affidavits of MGNREGS employees 2012-13, Government of Bihar.

Source: Affidavits of MGNREGS employees 2013-14, Government of Bihar.
Summary of findings

- theoretical predictions were ambiguous as per the effect of this reform
- financial data shows that for treatment GPs there was a decline in spending and in number of workdays and workers hired
- decline in spending is mainly driven by a decrease in workers and there is direct evidence of decline in ghost workers
- not accompanied by a decline in MGNREGS assets
- suggestive evidence that patterns are accounted for by reduction in corruption
- seems to be corroborated by wealth reduction for GP and block officials
E-governance, Accountability, and Leakage in Public Programs: Experimental Evidence from a Financial Management Reform in India

Banerjee, Duflo, Imbert, Mathew, Pande (Oct 2016)

Presented by: Vittoria Dicandia

December 11, 2018
\( P \) maximizes:

\[
(1 - \pi^T)s - p_is - p_{-i}s - \frac{1}{2}cs^2
\]

Can be rewritten as:

\[
\begin{aligned}
&\quad \quad s(1 - 2p_i) - \pi^T s - \frac{1}{2}cs^2 \\
\end{aligned}
\]

Given:

\[
Y^{PT}(\pi^T) = s(1 - 2p_i)
\]

\( P' \)'s utility

\[
U^{PT}(\pi^T) = Y^{PT}(\pi^T) - \pi^T s - \frac{1}{2}cs^2
\]
<table>
<thead>
<tr>
<th>Panel A: Census 2011</th>
<th>Control Blocks</th>
<th>Treatment Blocks</th>
<th>Difference</th>
<th>Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Area (hectares)</td>
<td>1101</td>
<td>1129</td>
<td>28.38</td>
<td>2,936</td>
</tr>
<tr>
<td>Number of households</td>
<td>1860</td>
<td>1845</td>
<td>-15.22</td>
<td>2,936</td>
</tr>
<tr>
<td>% SC Population</td>
<td>0.196</td>
<td>0.194</td>
<td>-0.00164</td>
<td>2,936</td>
</tr>
<tr>
<td>% ST Population</td>
<td>0.0112</td>
<td>0.0144</td>
<td>0.00320</td>
<td>2,936</td>
</tr>
<tr>
<td>Literacy Rate</td>
<td>0.64</td>
<td>0.639</td>
<td>-0.000859</td>
<td>2,936</td>
</tr>
<tr>
<td>% With education facility</td>
<td>0.992</td>
<td>0.997</td>
<td>0.00529*</td>
<td>2,936</td>
</tr>
<tr>
<td>% With medical facility</td>
<td>0.668</td>
<td>0.679</td>
<td>0.0114</td>
<td>2,936</td>
</tr>
<tr>
<td>% With post office</td>
<td>0.0394</td>
<td>0.0357</td>
<td>-0.00367</td>
<td>2,936</td>
</tr>
<tr>
<td>% With bank branch</td>
<td>0.352</td>
<td>0.402</td>
<td>0.0496**</td>
<td>2,936</td>
</tr>
<tr>
<td>% With electricity supply</td>
<td>0.426</td>
<td>0.46</td>
<td>0.0344</td>
<td>2,936</td>
</tr>
<tr>
<td>% Land Irrigated</td>
<td>0.53</td>
<td>0.523</td>
<td>-0.00639</td>
<td>2,936</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Panel B: Household Survey</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>% Hindu</td>
<td>0.92</td>
<td>0.89</td>
<td>-0.0268**</td>
<td>390</td>
</tr>
<tr>
<td>% Scheduled Castes</td>
<td>0.26</td>
<td>0.24</td>
<td>-0.0188</td>
<td>390</td>
</tr>
<tr>
<td>% Other Backward Castes</td>
<td>0.59</td>
<td>0.60</td>
<td>0.0162</td>
<td>390</td>
</tr>
<tr>
<td>% House without a solid roof</td>
<td>0.38</td>
<td>0.41</td>
<td>0.0246</td>
<td>390</td>
</tr>
<tr>
<td>% Owns Land</td>
<td>0.58</td>
<td>0.57</td>
<td>-0.0139</td>
<td>390</td>
</tr>
<tr>
<td>% Male Head</td>
<td>0.78</td>
<td>0.76</td>
<td>-0.0129</td>
<td>390</td>
</tr>
<tr>
<td>% Literate Head</td>
<td>0.56</td>
<td>0.55</td>
<td>-0.00884</td>
<td>390</td>
</tr>
<tr>
<td>Household Size</td>
<td>6.52</td>
<td>6.44</td>
<td>-0.0836</td>
<td>390</td>
</tr>
<tr>
<td>Number of adults in the household</td>
<td>3.42</td>
<td>3.36</td>
<td>-0.0664</td>
<td>390</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Panel C: nrega.nic.in reports (April 2011- March 2012)</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>MGNREGS beneficiary households</td>
<td>187</td>
<td>196</td>
<td>9.283</td>
<td>2,950</td>
</tr>
<tr>
<td>MGNREGS work days provided</td>
<td>6290</td>
<td>6673</td>
<td>383.7</td>
<td>2,950</td>
</tr>
<tr>
<td>MGNREGS labor expenditures (lakhs)</td>
<td>7.69</td>
<td>8.68</td>
<td>0.996**</td>
<td>2,950</td>
</tr>
<tr>
<td>MGNREGS material expenditures (lakhs)</td>
<td>6.57</td>
<td>7.07</td>
<td>0.508</td>
<td>2,950</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Panel D: CPSMS reports (Sept 2011- March 2012)</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>MGNREGS funds spent (CPSMS)</td>
<td>9.00</td>
<td>8.73</td>
<td>-0.272</td>
<td>3,025</td>
</tr>
<tr>
<td>MGNREGS funds received (CPSMS)</td>
<td>9.52</td>
<td>9.59</td>
<td>0.0645</td>
<td>3,025</td>
</tr>
</tbody>
</table>

Note: The unit of observation is a Gram Panchayat (GP). Out of 3067 GP from our sample list, we match 2936 GP with census 2011 data (Panel A), we surveyed 390 GP (Panel B), we match 2950 GP with nrega.nic.in data (Panel C) and 3025 GP with CPSMS data (Panel D). The difference between control and treatment blocks is estimated using a regression of each GP characteristic on a dummy equal to one for treatment blocks and district fixed effects. Standard errors are clustered to take into account correlation at the block level. Stars denote significance levels. *, ** and *** denote significant differences at the 10%, 5% and 1% levels respectively.