

Voter and Politician Responses to a
Large-Scale Sanitation Intervention in
Bangladesh

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Evidence on “Voter Irrationality”

- Voters in India respond to exogenous shocks (like rainfall) in their voting behavior. (Cole et al, *JDE* 2012)
- Also true for voters and shareholders in the United States:
 - U.S. gubernatorial elections
 - CEO pay in the US responds strongly to luck (i.e. economic shocks beyond the CEO’s control) (Bertrand and Mullainathan *QJE* 2001)


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Links to Broader Questions




Bill & Melinda GATES foundation

"I have identified the specific investments that are needed [to end poverty]; found ways to plan and implement them; [and] shown that they can be affordable."



DAMBISA MOYO

"After \$2.3 trillion over 5 decades, why are the desperate needs of the world's poor still so tragically unmet? Isn't it finally time for an end to the impunity of foreign aid?"



PAUL H. MILLER

**BILL & MELINDA
GATES** *founders*



Links to broader questions

- Aid disbursement may be worse than useless if...
 - aid extends the tenure of corrupt, incapable leaders by allowing them to keep constituents happy.
 - If voters have trouble separating luck from skill, then aid money may undermine political accountability and prevent the root cause of poverty from getting diagnosed and fixed.
- Implicit assumption: voters do not know, or they can be fooled. We should explore this rigorously.

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Endogenous Politician Response

- Literature shows that development programs change voter attitudes, but it has not studied politician responses
- Leaders may endogenously respond to random events, and voters rationally respond to the information revealed by the leader's action:
 - Politicians reveal their type after shock occurs
(e.g. Katrina vs Sandy)
 - CEOs solicit outside offers when the market does well
 - H. M. Ershad prayed for rain
- Reduced form regressions of voter behavior on random events may get mis-interpreted:
 - Non-zero coefficients not necessarily evidence of less-than-full rationality.

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Implication

- We study both politician and voter responses to a large-scale RCT on sanitation
 - Program covers an entire sub-district and is large enough to potentially affect politician behavior
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Context

- Tanore, Bangladesh. 32% of households engage in open defecation. Public health externality.
- OD rates lower overall in Bangladesh (<15%)
- However, the open defecation rate in India is 55%
 - Significantly associated with stunting

Research Design

- Cluster Level (**Non-Public**) Randomization:
 - 115 villages (372 clusters, or neighborhoods) randomly allocated to Control, Information, Subsidies
- Individual-Level (**Public**) Randomization
 - Public lotteries for toilet vouchers held only in subsidy clusters



Information Treatment (LPP)



Latrine Promotion Program, similar to Community-Lead Total Sanitation (CLTS)

Public Subsidy Lottery



Lottery outcome and tin distribution

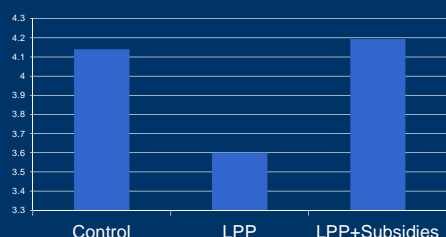


UP chairman present, gave a speech

Basic Program Effects

- The sanitation program works –
 - Leads to greater investments in improved sanitation by households
 - Households receiving the program report greater satisfaction with their sanitation situation

Satisfaction with UP Chairman's Performance in Providing Sanitation



- Informing villagers about an unmet need increases accountability
- We can replicate the reduced form regression

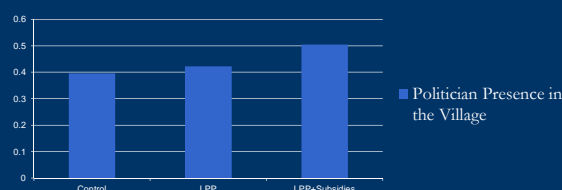
Theory of Politician Behavior

- What I just showed is not *necessarily* evidence of voter irrationality.
- In a model with the very mild set of assumptions (e.g. no complementarity between exogenous program shock and politician action), we show that:
 - When there is uncertainty about the contribution of politician skill in bringing the program, a skilled politician may *separate* from unskilled by putting in more effort in response to the program

Testable Hypotheses from Model: 1

- When voters are uncertain about the politician's true contribution to a (random) event that increases their welfare, leaders may react to take credit for the event
- Rational voters' perceptions of their leaders may change as a result.
- Voter perceptions should move in the same direction as the leader action.
- Ignoring the leader's action, we should be able to replicate the reduced-form result found in the literature on voter irrationality: that voters express greater satisfaction with a positive random shock.

Have you Seen or Interacted with the UP Chairman in the last 3 months?

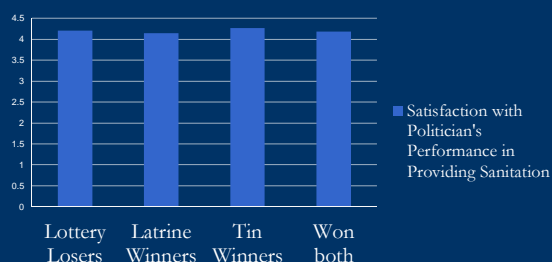


- The UP Chairman (and Ward members) spend more time in subsidy villages
- Those attending Tin distribution ceremonies are most likely to have seen UP Chairman

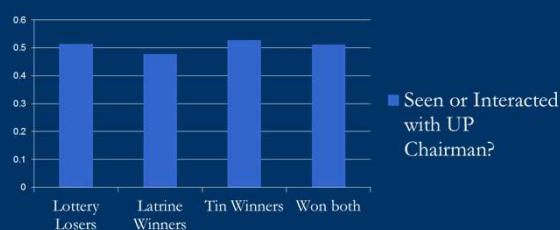
Testable Hypotheses: 2

- When there is no uncertainty about the leader's contributions, rational voters should not reward (or punish) leaders for the occurrence of an event that is transparently random.
- In our empirical application, we will conduct:
 - a 'shrouded' lottery (with legitimate room for uncertainty in the voter's minds about the politician's true contribution), versus
 - a 'transparent' lottery (where voters themselves select the random draw) to provide sanitation services

Winners of Transparently Random Lotteries don't give any extra credit to politician

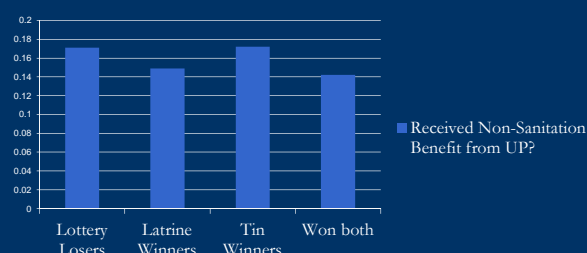


Politicians Spend no extra time with winners over losers in subsidy villages



- Tin distribution ceremony was an efficient way for UP chairmen to interact with villagers

UP Chairmen Compensate Lottery Losers and those they interact with



- Something good comes out of the UP chairman spending more time in subsidy villages: he provides special benefits to those he sees,

Table 7: Asked UP for sanitation-related help in last 6 months (R2)

	(1) Omitted: control eligibles	(2) Omitted: lottery losers
Lost both	-0.031 (0.021)	
Latrine only	-0.045** (0.020)	-0.015 (0.012)
Tin only	-0.026 (0.021)	0.005 (0.013)
Won both	-0.060*** (0.020)	-0.029** (0.011)
Omitted category mean	0.185	0.154
Omitted category std. dev.	0.389	0.361
Number of observations	10,327	7,956

Notes: All regressions include indicators for randomization strata. Standard errors clustered at the level of the randomized treatment. For control villages, this is the village. For treatment villages, where the lottery was conducted at the household level, this is the household. * p<0.1, ** p<0.05, *** p<0.01.

There is no way to know whether the leader's targeting is socially efficient, but their selection of beneficiaries does reflect demand conditions. Lottery winners are less likely to request help.

Summary

- The portrait of rural Bangladeshis that emerges from our empirical work is one of rational voters.
- Both politicians and voters react to a random shock in ways predicted by a model of rational voters:
 - In an experimental environment where politicians' contributions (type) is uncertain, skilled politicians change the allocation of their time to signal their quality.
 - Voters respond to the signal in the right direction.
 - Voters do not react in this way when the experiment is designed to remove any uncertainty about the role of luck rather than politician skill.
 - An information treatment increases political accountability.

Testable Hypotheses on Heterogeneity

- In the uncertain environment, the model predicts *heterogeneity* in the reactions of different types of leaders to the arrival of a large random program.
- *Effective* politicians will spend more time with voters, and voters will update positively about that leader's performance.
- *Ineffective* leaders will spend less time, and the voters will update negatively.
- In either case, politician action and voter perceptions will move in the *same* direction.

Heterogeneity Results

- We find some support for this in the individual behaviors of the four UP chairs in 4 unions:
 - Two of the leaders increase their effort in the treatment villages, and voters reward this behavior.
 - In one union, the leaders spend less time in the subsidy villages following the RCT program implementation, and accordingly, the voters 'punish' these politicians.
 - 4th UP chairman shows up more in LPP-only villages, and engages in other compensatory actions

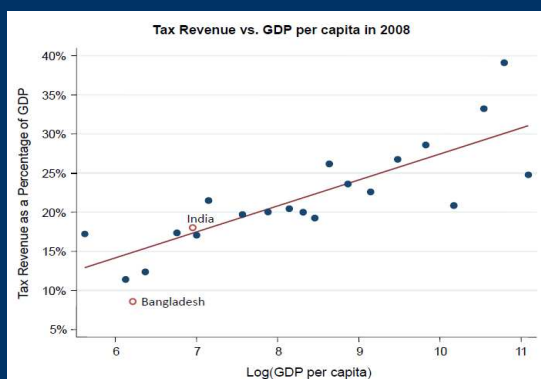
Using Social Incentives to Collect Taxes: A Field Experiment with Firms in Bangladesh

Raj Chetty, Harvard University
 Ghulam Hossain, Bangladesh National Board of Revenue
 Mushfiq Mobarak, Yale University
 Monica Singhal, Harvard University
 Aminur Rahman, IFC
 Nasiruddin Ahmed, Bangladesh National Board of Revenue

Use some
 psychology
 and
 economics
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 people
 about the
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Low Revenues in Bangladesh



Why?

- Low Capacity to enforce
 - The system is informal



The Idea

- Traditional punishment-based methods (fines, audits) to improve compliance not feasible to implement
- Can we leverage interest in social recognition to stimulate tax payments?
 - Think of things that are cheap for us to provide, but which firms may value
 - Publicize compliance information among peers
 - Reward cards that help firms establish credibility
 - Encourage peer monitoring and peer pressure (group rewards)

2 x 2 x 2 Experimental Design

	No Recognition	Peer Recognition
No Reward	Control: Letter with information on firm's own records	Publicizing information on registration and tax payments of every firm in cluster (neighborhood)
Group Reward	Reward cards if the firm <i>and</i> the cluster behaves well, in terms of registration and payment	Publicize information + Reward Cards

- All groups receive baseline letter with information about their own registration and payment status (with an opportunity to correct info)
- Letters vary in describing subsequent treatments
- After 6 weeks, firms receive letters and rewards every 6 months
- All treatments crossed with information on average compliance

Use some psychology and economics to excite people about the VAT recognition program

VAT FILER REWARD PROGRAM* Sample Taxpayer Reward Cards

Benefits of a Taxpayer Reward Card:



You can carry the card in your wallet to your meetings with government officers and bank officers to clearly demonstrate that you are a registered business or a regular VAT payer.



You can display the card in your store using the display holder provided so that your customers recognize that their purchases are contributing to the tax base of the economy, and that you are a responsible businessman carrying out your civic duties.



GOLD CARD



SILVER CARD



BRONZE CARD

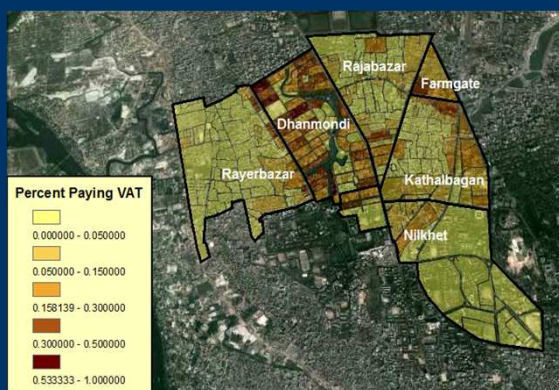
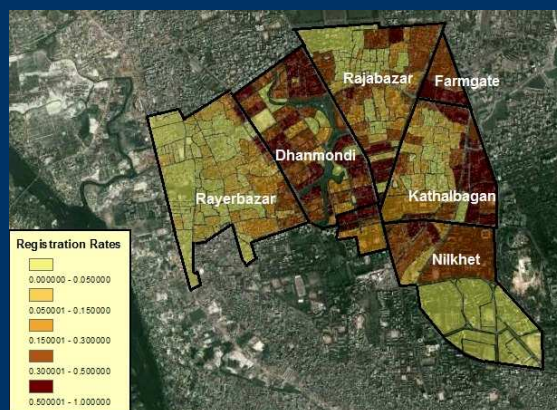
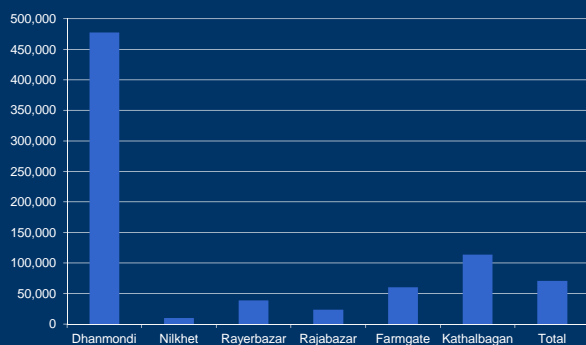


Table 12: Overview Information By Market

Market Name	Ave. Payment	Tot. Payment	Reg. Rate	Payment Rate	No. Firms
Alpana Plaza	371	39,709	68.2%	1.9%	107
Aziz Super Market	11,392	2,939,058	76.4%	12.4%	258
Bakusha Harkers Market	25	12,000	11.3%	0.2%	485
Bashundhara City	60,798	60,980,378	63.5%	26.4%	1,003
Dhanmondi Hawkers Market	4,843	678,011	67.9%	45.7%	140
Eastern Mollika	2,806	836,786	40.8%	9.2%	292
Eastern Plaza	12,205	4,577,019	64.8%	14.4%	375
Farmview Super Market	1,097	473,184	59.5%	12.7%	237
Gaouchiya Market	1,921	466,792	53.5%	14.4%	243
Gausul Azam Super Market	523	75,798	23.4%	2.1%	145
Islamiya Market	40,409	9,294,010	2.6%	0.4%	230
Ismail Mansion	525	80,292	26.8%	2.0%	153
Metro Shopping Mall	20,745	2,855,560	82.3%	20.8%	96
Motaleb Plaza	1,712	366,378	57.5%	7.0%	214
Multiplex Center	4,857	1,607,549	59.8%	2.7%	331
Nahar Plaza	3,682	298,278	49.4%	3.7%	81
Noor Mansion	6,222	1,281,804	56.3%	9.2%	206
Priyangan Shopping Centre	20,783	2,992,815	36.1%	5.6%	144
Rayer Bazar	0	0	7.3%	0.0%	300
Sezan Point	637	89,204	39.3%	3.6%	140
Siddik Mansion	573	8,600	60.0%	6.7%	15
Suvastu Arcade	141	10,865	67.5%	1.3%	77
University Market	1,484	283,538	39.8%	1.0%	191
Total	16,520	90,247,628	47.5%	11.0%	5,463

Average payment per firm¹



1. Figure shows the average total VAT payments per firm for the whole period for which we have digitalized

Average payment per firm, Quarterly¹

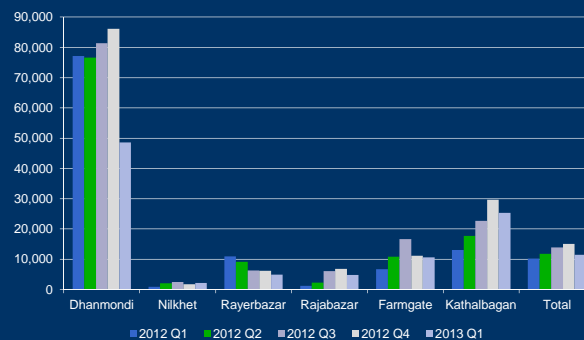
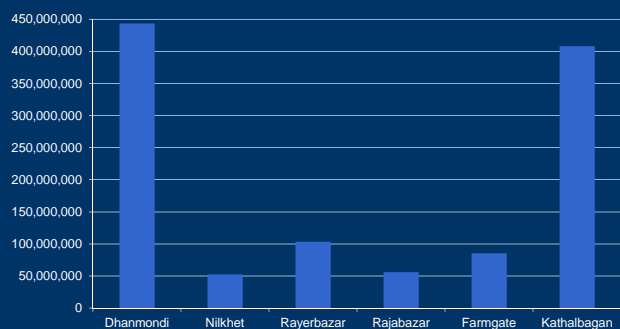


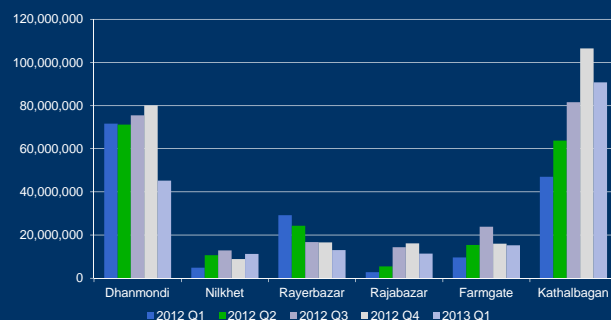
Figure shows the average total VAT payments per quarter from 2012 and onwards.

Sum of total payment by Tax Circle¹



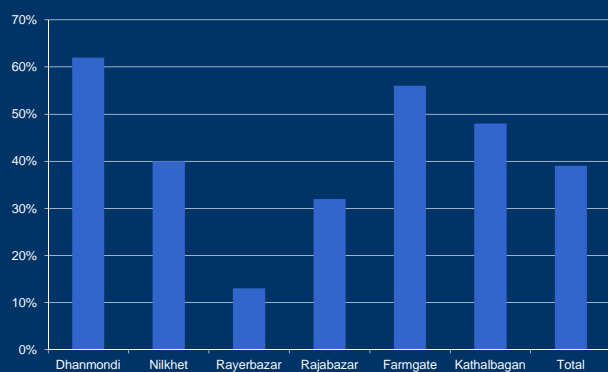
1. Figure shows the sum of total VAT payments (not divided by the number of firms) in the different Tax Circles

Sum of total payment, Quarterly¹

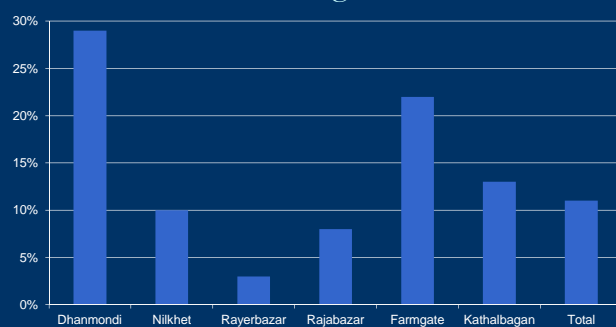


1. Figure shows the sum of total VAT payments (not divided by the number of firms) in the different Tax

Registration Rates in May 2013



Percentage of firms having paid VAT at least once in digital records¹



1. The digital records go back until 2011, but the data for 2011 is not complete