

# Do Informed Voters Make Better Choices? Experimental Evidence from Urban India

Abhijit V. Banerjee, Selvan Kumar, Rohini Pande and Felix Su\*

November 11, 2011

## Abstract

In the run-up to elections in a large Indian city, residents in a random sample of slums received newspapers containing report cards on politicians. The report card for a jurisdiction presented information, obtained under India's disclosure laws, on the performance of the incumbent legislator and the qualifications of the incumbent and two main challengers. Relative to the control slums, treatment slums saw higher turnout, reduced vote buying, and higher vote share for better performing incumbents and relatively more qualified incumbents. Moreover, voters demonstrated sophistication in how they use report card information to judge performance and qualifications – they used their knowledge on the incidence of public good spending in slums to evaluate jurisdiction-level information on public good spending by the incumbent, and used challenger qualifications as a yardstick to judge incumbent qualifications.

---

\*The authors are from MIT (Banerjee), Carnegie Mellon University (Kumar) and Harvard University (Pande). We thank our partners Satark Nagrik Sangathan, Delhi NGO Network and Hindustan and especially Anjali Bharadwaj, Amrita Johri and Mrinal Pande for enabling this study, Shobhini Mukherji for providing field oversight and Jeff McManus and Swapna Reddy for exceptional research assistance. We thank the William and Flora Hewlett Foundation and the Empowerment Lab at CID, Harvard for financial support and Tim Besley, Pascaline Dupas, Esther Duflo, Alan Gerber, Dominic Leggett, Tom Palfrey, David Stromberg and seminar participants for helpful comments.

# 1 Introduction

The poor numerically dominate the electorate in many low-income democracies, yet have largely failed to translate their political weight into effective service delivery and other economic gains (Olken and Pande, 2011). Explanations for this failure abound. By targeting clientelistic policies along ethnic lines, politicians may encourage poor voters to value a candidate’s group identity over his other qualifications (Horowitz, 1985; Chandra, 2004; Banerjee and Pande, 2009). Weak electoral institutions may allow the political elite to subvert democracy by stuffing ballots, buying votes and intimidating voters (Acemoglu et al., 2010; Simpser, 2008). Finally, voters may be unable to identify politicians who would serve them well, either because they lack information (Djankov et al., 2010) or because they are unable to interpret the available information.

The empirical challenge in distinguishing between these possible culprits – weak institutions, clientelistic policies and poorly informed voter populations – is that they so often coexist. In this paper we use data from a field experiment conducted in urban India to isolate and evaluate one channel of influence – low levels of information about politician performance and qualifications. We ask whether providing such information in media reports influences voter turnout and incumbent vote share and the use of vote-buying as an electoral strategy.

Our field experiment occurred in the run-up to the 2008 state legislature elections in Delhi, India’s capital city. The last decade has witnessed the adoption of stringent disclosure laws in India, prominent among them being India’s Right to Information Act and judicially mandated disclosure requirements for all candidates for elected office. Information obtained under these laws was published as jurisdiction-specific report cards in a leading vernacular newspaper.

Each report card contained information about incumbent performance along three dimensions: legislative activity, committee attendance and spending of discretionary jurisdiction development funds across eight public good categories. It also provided information on the wealth, education and criminal record of the incumbent and the two main challengers in that jurisdiction. In a random sample of 200 slums, households received a pamphlet on legislator responsibilities and a free copy of a newspaper that featured the report card for their jurisdiction. Households in the 575 control slums did not receive any informational material.

Relative to control slums, we observe several significant changes in voter behavior in treat-

ment slums. First, average voter turnout increased by 3.5 percent, or two percentage points (from 57.5% to 59.5%). Second, cash-based vote-buying was 19 percent less likely to occur in treatment polling stations. Third, while the campaign did not influence the average incumbent vote share, worse performing incumbents and those facing better qualified challengers received significantly fewer votes. The increases in turnout were relatively higher in treatment slums located in jurisdictions where the incumbent was a worse performer.<sup>1</sup>

The richness of the performance and qualification data allows us to examine how voters use available information. Voters *only* react to performance information along dimensions that have a clear and direct connection to their well-being. They reward legislators with a better attendance record in oversight committees (for fair price shops and police) but do not react to their attendance record in the legislature. Equally, across a variety of public goods they condition their vote on the extent of spending in slums and *not* on overall spending. Finally, when possible, voters benchmark the performance of their legislator: Each newspaper contained report cards for two neighboring jurisdictions. Voters compare their legislator's attendance record in committees with that of the neighboring legislator in deciding who to vote for. In contrast, perhaps because they have no way of knowing the extent of slum spending in other jurisdictions, we do not observe benchmarking for spending behavior.

Voters also benchmark candidate qualifications. They condition their vote on incumbent qualifications *relative* to challengers in the jurisdiction: Incumbents who are richer or less educated than their challengers receive fewer votes. Moreover, consistent with rational learning, voters do not react to qualification information about irrelevant candidates (challengers in the neighboring jurisdiction).

Existing political economy models have tended to examine how more information influences either electoral accountability or on turnout. Our evidence and theoretical reasoning, however, suggests that information should influence both margins of voter behavior. One contribution of this paper is to provide a model which identifies the conditions under which information increases electoral accountability when turnout is endogenous. We consider an economic environment in which a sub-population of ethical voters face a cost of voting but may still choose to vote in order

---

<sup>1</sup>This finding resonates with several U.S. political economy papers which find that voters are often more energized by worse performers (Bloom and Price, 1975; Washington, 2006; Hastings et al., 2007).

to maximize group welfare. We assume that these voters favor politicians whom they expect to perform better, where performance is measured along the lines framed by the report cards. More precise information about incumbent performance increases the expected benefits from voting for the preferred candidate and, therefore, typically increases turnout and reduces vote-buying. More precise performance and qualification signals also boost the vote share of better performing incumbents under reasonable conditions. Finally, how turnout varies with incumbent performance depends on voters' priors. If, for instance, voters' priors led them to favor the challenger but the performance signal raises voters (relative) valuation of the incumbent, then turnout can go down.

A growing political economy literature demonstrates a net positive impact of information on policy outcomes in democratic settings (Besley and Burgess, 2002; Stromberg, 2004). Snyder and Stromberg (2010) show that improved newspaper coverage improves politician behavior across US jurisdictions (from a voter's perspective). Access to more informative media sources, in turn, increases turnout (Stromberg, 2004; Gentzkow, 2006). Turning specifically to electoral accountability, Ferraz and Finan (2008) use detailed Brazilian electoral and audit data to show that disclosure of audit reports that identify certain politicians as being corrupt substantially reduces the probability of reelection for the corrupt incumbents. These effects are stronger in areas with greater radio coverage.

These papers suggest that increased transparency about politician performance may be a powerful accountability mechanism but leave open several questions. First, can less educated voters, who form the majority in many low-income countries, correctly process and act upon the relatively coarse information generally available from the media? Or is their ability to hold a politician accountable limited to relatively clearcut cases of corruption like the case analyzed by Ferraz and Finan (2008)? This question is salient because while countries increasingly mandate disclosure laws for politicians and introduce other transparency measures (Djankov et al., 2010), the norm is to rely on publicly available information and self-declarations of politicians rather than targeted investigations of politician malfeasance.<sup>2</sup> In this paper we show that less-educated voters are able to process coarse information in a relatively sophisticated manner, suggesting that increased transparency, even if relatively coarse in nature, can enhance electoral accountability.

---

<sup>2</sup>Arguably, the latter, while surely more revealing, is much more expensive and challenging to institutionalize.

Second, do electoral malpractices limit the power of information? This question is of central importance in evaluating the impact of transparency mechanisms in settings characterized by weak institutions. Our experiment occurred in slums which witnessed widespread vote-buying. However, we also observe decline in the incidence of vote-buying when more information is provided. Thus, in our setting, electoral malpractices do not undercut the positive effects of increased transparency on electoral accountability.

Finally, our paper contributes to a growing experimental literature on voter behavior in low income countries (for an overview, see Pande (2011)). Building on insights of the Get Out the Vote literature for the U.S. (Gerber and Green, 2000), this literature has found significant turnout effects for nonpartisan motivational campaigns (Gine and Mansuri, 2010; Banerjee et al., 2010) and campaigns that exhort voters to use their vote to protest against malpractices (Collier and Vicente, 2008). Evidence on whether information disclosures improve electoral accountability is more limited but tends to support the view that citizens seek to base their voting choices on incumbent performance (Chong et al., 2010; Humphreys and Weinstein, 2010).

The rest of this paper is structured as follows: Section 2 provides a conceptual framework to help interpret what we find. Section 3 describes the context, the experimental intervention and empirical design. Section 4 provides the results and Section 5 concludes.

## 2 Conceptual Framework

The appropriate model for voting decisions in large elections remains debated. On one hand, Feddersen and Pesendorfer (1996) argue that, with costless voting, a pivotal-voter model in which uniformed voters voluntarily abstain can explain turnout and the direction of voting.<sup>3</sup> On the other hand, Feddersen (2004) has himself argued that in large elections the assumption of costless voting is hard to support, and that in the presence of voting costs rational voting

---

<sup>3</sup>In complementary work Feddersen and Pesendorfer (1999) show that if voters have asymmetric information and diverse preferences then increasing the fraction of informed electorate may increase abstention (newly informed voters may no longer prefer to vote to cancel partisan bias). Battaglini et al. (2010) use laboratory experiments to show that several strategic implications of Feddersen and Pesendorfer (1996) and Feddersen and Pesendorfer (1999) hold in small elections. In contrast, Coate and Conlin (1994) show that the pivotal voter model predicts closer winning margins than reality for small elections in Texas and, therefore, argue in favor of a model of expressive voting where voters are rule utilitarians. Such models can easily yield the prediction that with more information fewer group members need to vote and so turnout reduces with information.

models cannot explain the levels of turnout observed in large elections (like the one we study). Hence, he argues for a rule-utilitarian approach which emphasizes the idea that citizens balance normative reasons to vote against the physical cost of voting (Feddersen and Sandroni, 2006).<sup>4</sup> In this tradition, we follow Coate and Conlin (1994) and deploy a *group rule utilitarian* approach wherein voter groups define and follow a group norm about how to vote.

## 2.1 Basics

Our unit of observation is a neighborhood within a jurisdiction. We develop a two period voting model for a single jurisdiction comprised of a continuum of neighborhoods. A single legislator is elected via plurality rule. In period  $p$  the incumbent legislator with characteristic  $\theta$  produces output  $y_p$  using a technology  $y_p = \theta$  for all neighborhoods in the jurisdiction.<sup>5</sup>

Each neighborhood is populated by a continuum of voters with measure one. A fraction  $\mu$  are partisan and vote for the candidate from their preferred party. Of these, the partisan vote share of the incumbent is  $\xi$ , which is uniformly distributed on  $[\frac{1}{2} - \bar{\xi}, \frac{1}{2} + \bar{\xi}]$ , where  $0 < \bar{\xi} < \frac{1}{2}$ . The rest are ethical voters. Ethical voters are risk neutral and their individual payoff is  $E(y_p)$ , where  $E(\cdot)$  is the expectations operator. They face a cost of voting  $c$  with a distribution uniform on  $[0, \bar{c}]$ .<sup>6</sup> At the start of period 2 ethical voters observe

$$\tilde{y} = y_1 + \epsilon \text{ where } \epsilon \sim N(0, \sigma_\epsilon^2) \text{ and } y_1 \text{ is period 1 output}$$

They also receive a signal on incumbent and challenger characteristics:

$$\tilde{\theta}_X = \theta_X + \eta_X, X = I, C \text{ where } \eta_X \sim N(0, \sigma_{\eta_X}^2)$$

$\eta_I, \eta_C$  and  $\epsilon$  are distributed independent of each other. Everyone in the same neighborhood observes identical signals, and there is common knowledge that candidate  $X$ 's type is drawn from a known distribution:  $\theta_X \sim N(\bar{\theta}_X, \sigma_X^2)$ .<sup>7</sup> This gives voters their priors. The signal

---

<sup>4</sup>In doing so, they follow Harsanyi (1977).

<sup>5</sup>This is equivalent to assuming actual output is random and varies across neighborhood, and  $y_p$  is its mean.

<sup>6</sup>The model trivially extends to the case where partisan voters also have voting cost.

<sup>7</sup>We assume citizens in a neighborhood hear the same rumors about candidates, observe the same legislator-initiated projects and are exposed to the same campaign speeches, etc.

structure implies an informational asymmetry – voters observe performance (based on period 1 performance) and characteristic signals for the incumbent but only a characteristic signal for the challenger. Finally, if the candidate she believes is the highest quality wins, then an ethical voter's payoff in period 2 output is  $|D|$ , where  $D \equiv E[\theta_I|\tilde{\theta}_I, \tilde{y}] - E[\theta_C|\tilde{\theta}_C]$ .

We follow Coate and Conlin (1994) and assume ethical voters use a voting rule that maximizes the group's average utility, given the distribution over partisan voters (the rule is chosen before the realization of  $\xi$  is known). The rule defines a cost cut-off  $c^*$  such that an ethical voter with a voting cost below  $c^*$  should vote for the better of the two candidates while those with cost above  $c^*$  should abstain. In the Appendix we show that under reasonable assumptions voter turnout is proportional to the expected benefit from choosing the right candidate,

$$c^* = \min(\lambda|D|, \bar{c}) \text{ where } \lambda = \frac{1}{2\xi} \frac{(1-\mu)}{2\mu}$$

Increases in  $D$  proportionally increase turnout until  $c^* \geq \bar{c}$  (after which point everyone votes). We examine how report card release influences  $D$  and, therefore, voter behavior.

## 2.2 The Impact of Report Card Release

The release of report cards improves precision of voter signals. We first show that this improves the effective information signal available to voters and then examine impacts on voter behavior.

### 2.2.1 Information Signal

It is standard that if  $\nu_X$  is the random variable  $\theta_X - \bar{\theta}_X$  (with mean 0 and variance  $\sigma_X^2$  for  $X = I, C$ ) then

$$E[\theta_I|\tilde{\theta}_I, \tilde{y}] = \bar{\theta}_I + \frac{h_{\eta_I}(\eta_I + \nu_I) + h_\epsilon(\epsilon + \nu_I)}{h_I + h_{\eta_I} + h_\epsilon}$$

where  $h_I, h_\eta$  and  $h_\epsilon$  are the precisions (i.e. inverses of the variance) of  $\bar{\theta}_I, \eta$  and  $\epsilon$  respectively.

Likewise

$$E[\theta_C|\tilde{\theta}_C] = \bar{\theta}_C + \frac{h_{\eta_C}(\eta_C + \nu_C)}{h_C + h_{\eta_C}}$$

where, once again,  $h_C$  and  $h_{\eta_C}$  are defined in a corresponding way.

Finally, the random variable  $z \equiv \frac{h_{\eta_I}(\eta_I + \nu_I) + h_\epsilon(\epsilon + \nu_I)}{h_I + h_{\eta_I} + h_\epsilon} - \frac{h_{\eta_C}(\eta_C + \nu_C)}{h_C + h_{\eta_C}}$  defines the effective informa-

tion signal, i.e. the extent to which information signals move the posterior of the gap between the two candidates' types away from the prior. By our assumptions,  $z \sim N(0, \sigma^2)$  where

$$\sigma^2 = \left[ \frac{h_{\eta_I} + h_\epsilon}{h_I + h_{\eta_I} + h_\epsilon} \right] h_I^{-1} + \left[ \frac{h_{\eta_C}}{h_C + h_{\eta_C}} \right] h_C^{-1}.$$

The release of report cards increases  $h_{\eta_I}, h_{\eta_C}, h_\epsilon$  which, in turn, increases  $\sigma^2$ .

*Result 1: Release of report cards enlarges the average difference between posterior values of the two candidates' types in the sense of increasing the variance of effective information signal  $z$ .*

More information, on average, makes candidates look more dissimilar. Given this, we now examine how report card release influences the three outcomes of interest – expected turnout, realized incumbent vote share and the incidence of vote-buying.

### 2.2.2 Expected Turnout

Expected turnout is given by:

$$\mu + (1 - \mu)\Omega$$

where  $\Omega \equiv \text{Prob}_{\tilde{y}, \tilde{\theta}_I, \tilde{\theta}_C} [\lambda|D| \leq \bar{c}] \cdot \frac{E_{\tilde{y}, \tilde{\theta}_I, \tilde{\theta}_C} [\lambda|D| | \lambda|D| \leq \bar{c}]}{\bar{c}} + \text{Prob}_{\tilde{y}, \tilde{\theta}_I, \tilde{\theta}_C} [\lambda|D| > \bar{c}]$

From above, we know  $D \equiv E[\theta_I|\tilde{\theta}_I, \tilde{y}] - E[\theta_C|\tilde{\theta}_C] = \Delta + z$ , where  $\Delta \equiv \bar{\theta}_I - \bar{\theta}_C$ .

*Result 2: Assume turnout is below 100%. For given  $\bar{c}$  and  $\lambda$ , as long as the bias in favor of one candidate ( $\Delta \equiv \bar{\theta}_I - \bar{\theta}_C$ ) is not too large and signal precisions ( $h_I, h_\eta$  and  $h_\epsilon$ ) are not too close to zero, then greater variance of the effective information signal increases turnout.*

This result is intuitive. More information, on average, will spread candidates apart. Hence, a more informative signal will increase expected turnout unless *ex ante* the candidates are perceived as very different. In that case more information may not boost turnout much when it amplifies the quality gap between candidates (because turnout is already very high) but may reduce turnout substantially when it reduces this gap. Combining Result 1 and Result 2, it is reasonable to expect that, on average, report card release will increase turnout.

### 2.2.3 Incumbent Vote Share

The impact of report card release on incumbent's expected vote share (where the expectation is taken across different realizations of  $\xi$ ) depends on whether the information is good news. We, therefore, examine how realized values of  $\tilde{y}, \tilde{\theta}_I, \tilde{\theta}_C$  influence incumbent vote share.<sup>8</sup> (For given  $\tilde{y}, \tilde{\theta}_I, \tilde{\theta}_C$ , the incumbent vote share  $V$  is defined in the Appendix.) Let  $\kappa$  be a parameter which shifts  $h_\epsilon$  and  $h_{\eta_X}$ . We evaluate  $\frac{dV}{d\kappa}$  for fixed values of  $\tilde{y}, \tilde{\theta}_I, \tilde{\theta}_C$ .

*Result 3: Assume turnout is below 100%. As long as  $\mu$  or  $\bar{c}$  are not too small, a more precise challenger signal improves incumbent vote share more when challenger's characteristic signal is worse, while a proportional increase in the precision of incumbent's performance and characteristic signals ( $\frac{1}{h_{\eta_I}} \frac{dh_{\eta_I}}{d\kappa} = \frac{1}{h_\epsilon} \frac{dh_\epsilon}{d\kappa}$ ) increases incumbent vote share more when his performance and characteristic signal are better.*

This result captures the intuition that ethical voters wish to vote for the high quality candidate, and more precise signals aid this. However, the result requires two non-trivial conditions. First, we require proportional improvements in the precision of the two signals. Suppose this condition is violated such that the precision of the incumbent's performance signal increases faster than the precision of his characteristic signal. This reduces the weight given to his characteristic signal in the posterior and a positive characteristic signal will be less rewarded when overall signal quality goes up.

Second, our condition on  $\mu$  and  $\bar{c}$  restricts the extent of change in turnout in response to more precise signals. To see why this is needed, start with the situation where voters posterior belief is that incumbent is worse than the challenger. Suppose more precise quality signals reduce the quality gap between the incumbent and the challenger. This will reduce the expected benefit from voting and, therefore, turnout. This, in turn, implies that the negative effect of the signal on incumbent vote share is stronger, because it is on a smaller base. In other words, if the induced turnout changes are large then an improvement in signal quality can hurt the incumbent more in situations where his performance is relatively better than expected.

The assumption of proportional increases in performance and characteristic signals is, of course, relatively strong. Arguably, relative to characteristics, report cards better captured important dimensions of performance. Hence, it is reasonable to assume that  $h_\epsilon$  is more elastic

---

<sup>8</sup>In contrast, in the case of turnout we were interested in the average impact

with respect to  $\kappa$  than  $h_{\eta_I}$  :

$$\frac{\kappa}{h_\epsilon} \frac{dh_\epsilon}{d\kappa} > \frac{\kappa}{h_{\eta_I}} \frac{dh_{\eta_I}}{d\kappa}.$$

Under this assumption an increase in  $\kappa$  raises the slope of incumbent vote share with respect to incumbent performance by even more than in the proportional case, but the slope with respect to incumbent qualifications will go down and in extreme cases may become negative for reasons parallel to those that cause Result 3 to fail.

*Result 4: Assume turnout is less than 100%. As long as  $\mu$  or  $\bar{c}$  are not too small, if report card release causes the precision of incumbent's performance signal to increase proportionally faster than the precision of the characteristic signal, then report card release will increase the vote share of better performing incumbents by more. However, it may not increase the vote share of an incumbent with better characteristics.*

Finally, since the incumbent is likely to be better known than the challengers we anticipate  $h_I > h_C$  and  $\frac{dh_{\eta_I}}{d\kappa} < \frac{dh_{\eta_C}}{d\kappa}$ , i.e. the priors about the incumbent's qualifications are likely to be more precise and less easy to affect. In this case, the effect of an increase in  $\kappa$  on the slope with respect to  $\tilde{\theta}_C$  will be stronger than the effect on the slope with respect to  $\tilde{\theta}_I$  even under the proportional signals assumption made in Result 3.

These effects on incumbent vote share are entirely driven by changes in turnout: more precise positive information about the incumbent can either reduce turnout of those who would have voted against him or increase turnout of those who would have voted in favor. Hence, positive information from the incumbent's perspective ( $z$  goes up) will tend to reduce turnout if ethical voters are biased against the incumbent ( $\Delta + z < 0$ ) and increase it otherwise.

#### 2.2.4 Vote buying

We next develop a simple extension to examine vote-buying. We assume parties observe the realization of  $\Delta + z$  in each neighborhood (neighborhoods vary in  $\Delta$ , say) and then decide whether or not to buy votes in that neighborhood by paying some voters a fixed amount  $s$  conditional on voting. Parties are non-strategic, i.e. do not condition vote purchase on what they expect will happen in the election as a whole. This is, arguably, a reasonable approximation

if the result is sufficiently uncertain.<sup>9</sup> Parties seek to buy votes in the most cost-effective manner – identify voters who are closest to being indifferent between voting and not voting and offer to pay them if they vote. As a result those with  $c \in [\lambda|z + \Delta|, \lambda|z + \Delta| + s]$  will end up selling their votes to the incumbent as long as  $z + \Delta > 0$  (the incumbent's party will never make an offer if  $z + \Delta < 0$ ) and to the challenger if  $z + \Delta < 0$ .<sup>10</sup> Clearly if  $\lambda|z + \Delta| > \bar{c}$ , there is no reason to buy votes in that neighborhood.

It follows that the expected fraction of vote buying in a neighborhood with bias  $\Delta$  is

$$\int_{\frac{-\bar{c}-\Delta}{\sigma}}^{\frac{\bar{c}-\Delta}{\sigma}} \frac{s}{\bar{c}} \phi(z) dz = \frac{s}{\bar{c}} [\Phi(\frac{\bar{c}-\Delta}{\sigma}) - \Phi(\frac{-\bar{c}-\Delta}{\sigma})]$$

under the assumption that there is vote buying even when  $\bar{c}$  lies in the interval  $[\lambda|z + \Delta|, \lambda|z + \Delta| + s]$  (for small  $s$  this should not make much of a difference). Clearly this difference is decreasing in  $\sigma$  if  $\frac{\bar{c}}{\lambda} > |\Delta|$ .

*Result 5: Vote buying declines when the variance of the effective information signal goes up as long as the bias in the neighborhood is not too large and the initial turnout was below 100%.* The proof of this result relies heavily on the fact that once the signal is strong enough in either direction, no one is indifferent and hence there is no reason to buy votes. While the sharpness of this conclusion makes use of the fact that voting cost is uniformly distributed, a natural generalization is that the cost of voting has a unimodal distribution, possibly with an unbounded support. Raising the precision of the information would mean that indifferent voters will tend to be more in the tails of the distribution and, hence, less numerous.

### 2.2.5 Benchmarking

Our analysis has focused on a single jurisdiction. In principle, information from other jurisdictions may influence voting: This is the familiar intuition from the literature on teams (Lazear and Rosen, 1981; Green and Stokey, 1983; Holmstrom, 1982) – when agents are subject to

---

<sup>9</sup>Since all neighborhoods belong to the same jurisdiction, one vote from anywhere counts as one vote and the decision to buy votes should not depend on  $\Delta + z$  in a particular neighborhood. We assume potential voters are paid before they vote, and voting enforced by explicitly taking the voter identity card or coordinating through locally influential people who have the power to enforce this contract.

<sup>10</sup>If  $z + \Delta = 0$ , the voter can be bought by either side but since this is zero probability event, we can ignore it.

common shocks, it is efficient to use the performance of one to benchmark the other's performance. In our context, voters may use available performance information on other incumbents to evaluate the corresponding choices of their own incumbent (common shocks may include how difficult it is to spend money or organize and attend committee meetings). Similarly, in evaluating characteristics voters may compare characteristics across candidates to evaluate the relative standing of a candidate. As it turned out, the newspaper published two report cards in each edition (for neighboring jurisdictions), which allows us to examine this possibility.

However, it is worth emphasizing that the logic of common shocks only applies to the actions of incumbents and not their characteristics—under reasonable informational assumptions, the fact that the candidates in the neighboring jurisdiction are more educated, should not change the voter's evaluation of the candidates he needs to choose between.

### 2.3 Testable Predictions

In summary, our model implies three testable predictions regarding report card release. Namely, relative to control neighborhoods:

1. Neighborhoods that receive report cards will have higher turnout and lower vote-buying.
2. Incumbent performance and vote share will be more strongly correlated in treatment neighborhoods (with a similar, but possibly weaker, pattern for incumbent qualifications).
3. Incumbent vote share will be lower in treatment neighborhoods when either the incumbent is relatively less qualified than challengers in his own jurisdiction or his performance on comparable dimensions is worse than incumbent in neighboring jurisdiction (whose report card featured in the same newspaper).

Finally, how turnout varies with incumbent performance and candidate qualifications will depend on voter priors. If report card information reduced the expected benefit from voting (because, for instance, voters downgraded their beliefs about candidate quality) then turnout may decline.

### 3 Experimental Design and Data

This section describes the context of our intervention, the design of report cards and the data-sets we use.

#### 3.1 Setting

Delhi is India’s national capital and also has an independent state legislature composed of seventy legislators. Elections occur every five years with each legislator elected via plurality rule from a single member jurisdiction. Each legislator represents over 100,000 citizens. The last two decades have witnessed a steady accretion in legislator responsibilities, as part of an overall push towards decentralization and devolution of powers away from the bureaucracy.

Over 20% of Delhi’s population of 18 million people live in slums (2011 Indian Census). Widely dispersed across Delhi, these slums generally consist of poorly built congested tenements with inadequate infrastructure. Legislators exert significant direct discretionary power on the private transfers and public goods that slum dwellers can access. In part, reflecting this slum dwellers, despite their poverty and lack of legal property rights, form a politically active group. Yet, surveys suggest that slum dwellers lack information about what they can expect from legislators and newspaper readership is also limited in this population. Because of their centrality, potential influence in Delhi’s elections and the relevance of legislator performance for their well-being, slum dwellers were the target population of our intervention.

Our field experiment was timed to coincide with the official two-week campaign period (ending 48 hours before polling started) for the November 2008 Delhi state election. Three major parties were contesting: the incumbent party, Congress, Bhartiya Janata Party (BJP) and Bahujan Samaj Party (BSP).<sup>11</sup> Party campaigning in slums was extensive and included rallies and door-to-door canvassing. Both were often accompanied by gifts of liquor, food, milk and clothing; while widely considered inducements to vote for a specific party the diffuse nature of such gift-giving suggests an unclear mechanism for enforcement.<sup>12</sup> Parties also often made direct, but

---

<sup>11</sup>While all three made issues relating to the urban poor central to their campaigns, each took a different angle: Congress campaigned on a platform of local development, and emphasized slum regularization undertaken since 2007, BJP emphasized controlling price rise and combatting terrorism, and BSP targeted lower-caste poor households.

<sup>12</sup>The Delhi excise department registered over 1,500 bootlegging cases during the election month (IANS, 2008).

much more hidden, cash payment to subsets of voters, mostly during the last 24 hours before the election. We feel that it is reasonable to assume that if these voters who got the cash did not show up to vote, there would be some retribution.

### 3.2 Report Cards

The central element of our intervention was a door-to-door distribution of newspapers in a random sample of slums. Each newspaper contained report cards on legislator characteristics and performance for two jurisdictions (typically, geographic neighbors).

Our report card data was based on information obtained under India's two public disclosure laws. In October 2005 the Indian Right to Information (RTI) Act was implemented, giving citizens access to non-classified government records. Under the Act, a citizen may request information from a public authority and be legally entitled to an expeditious reply (typically within 30 days). Roughly a million RTI petitions have been filed annually since 2005 (PricewaterhouseCoopers, 2009). Our partner NGO filed over 70 RTIs in 2008, through which it obtained information on legislator responsibilities and incumbent performance along several dimensions. This paper is one of the first evaluations that measures the impact of any form of RTI activism.<sup>13</sup>

Our second source of disclosures was furnished by a 2003 Supreme Court ruling that requires candidates contesting national and state elections to submit affidavits revealing their educational qualifications, assets and liabilities and any past criminal charges.<sup>14</sup> We use this affidavit information to identify qualifications of candidates belonging to the three major parties. Below we provide more details on the information released through report cards. Table 1 reports summary statistics for these data

#### 3.2.1 Performance Measures

We used data from the official responses to RTI petitions to construct report card statistics on three dimensions of legislator performance – activism in the legislature, attendance of oversight committees and spending of discretionary funds. On legislative activism, we reported legislator

---

<sup>13</sup>To the best of our knowledge, the only other experimental evaluation of RTI activism is (Peisakhin, 2011)

<sup>14</sup>This judgment was implemented by the Indian Election Commission which made filing an affidavit disclosing this information a precondition for appearing in the ballot.

attendance and number of questions asked in the legislature during the previous calendar year (2007). The legislature met infrequently but attendance rates were high – the average legislator attended 16.9 out of 18 sessions but asked no questions (Table 1).

Next, we reported legislator attendance in the most recent meeting for each of three oversight committees: the Ration Vigilance Committee, the Police Vigilance Committee, and the District Development Committee. The first is tasked with ensuring that local ration shops are effective in providing subsidized food to below-poverty-line residents, the second, with ensuring that police stations operate well and the police do not harass locals, and finally, the District Development Committee oversees development projects. Across Delhi 70% of legislators attended the most recent Ration Committee meeting, 46% attended the Police Vigilance Committee meeting and only 29% attended the District Development Committee meetings. No legislators in our sample attended the Development Committee Meeting.

Finally, each legislator receives 20 million Rupees a year (roughly \$ 1 million at PPP) known as the MLA Local Area Development Scheme Fund (MLALADS) to spend on development in his jurisdiction, along with five million Rupees annually to be spent exclusively on water development. The legislator has complete discretion over fund allocation, with implementation undertaken by the involved municipal corporation.<sup>15</sup>

The report cards tell us the MLALADS spending between 2004 and 2007 under the following categories: roads (including sidewalks), water (referring to water supply infrastructure such as borewells, pumps, and tanks), parks and statues, sewage (sewage pipes and public toilets), drains, lights, community halls, boundary walls and others. The typical legislator spent his entire water fund and more than 80% of his MLALADS funds. Within MLALADs spending, the largest share of spending was on roads. Road spending was six times larger than spending on the next two largest categories - drains and parks.

### 3.2.2 Qualifications

Our report cards used candidate affidavits to present information on assets, criminal charges and education qualifications for the three major party candidates in each jurisdiction, always

---

<sup>15</sup>The legislator allocates funds for a development project to the municipal corporation, which carries out the work. Unspent money can be rolled over into the next year, but is forfeited at the end of the legislative term.

including the incumbent. Panel B of Table 1 provides summary statistics. (We collated these data only for our sample jurisdictions.)

First, we reported whether the candidate had pending criminal charges. Roughly half the incumbents in our sample faced criminal charges. Interestingly, relative to challengers, incumbents were more likely to face criminal charges – this is consistent with other data showing a positive correlation between criminality and electability in the Indian context (Aidt et al., 2011).

Second, we reported the value of assets owned by the candidate and his/her spouse. While challengers are relatively richer, incumbents are more likely to feature among the very rich. Our measure of being very rich is a widely used summary measure of wealth – being a *crorepati*, i.e. having assets in excess of Rs. 10 million. 70% of our sampled incumbents (and 50% of the challengers) were crorepatis. There is reason to believe that a significant fraction of incumbent wealth is related to holding political office: A cross-Delhi analysis of the reported change in incumbent assets in election affidavits between the 2003 and 2008 for incumbents who were recontesting showed a staggering 211% average increase in assets, amounting to an average of almost 1.8 crore (Delhi Election Watch, 2009).

Finally, we reported candidate education. Education levels among Delhi politicians are relatively high. In our analysis we use an indicator for whether the candidate had attended college. Incumbents are significantly more educated – only 20% of the incumbents but 60% of the challengers have not attended college.

### 3.3 Experimental Design and Data

Our sample of slums was drawn from jurisdictions where the incumbent was likely to stand for re-election. Using Delhi maps, we selected ten jurisdictions with high slum density and where our NGO partners had sufficient manpower to organize the doorstep newspaper delivery. In each jurisdiction our sample frame consisted of all polling stations that served slum areas. A polling station serves roughly 400 households (1,000 adult voters) who live in the same or adjacent neighborhoods.<sup>16</sup> In each jurisdiction, we randomly selected twenty polling stations for treatment yielding a total sample of 200 treatment and 575 control polling stations. In each treatment polling station our intervention targeted all households with at least one adult voter

---

<sup>16</sup>Using a door-to-door survey, the Election Commission assigned households to polling stations.

who featured on the voter list. Below, we describe our intervention and then the data.

### 3.3.1 Intervention

Roughly three days before newspaper distribution, NGO workers delivered a pamphlet to each household in a treatment polling station. This pamphlet informed the household that they would receive a free newspaper with a report card on their legislator's performance and candidate qualifications on a specific date. It also primed voters on the importance of using the report card to make an informed voting decision. (see Figure 1). To do so, it listed legislator responsibilities and encouraged voters to use the report card to learn about incumbent performance and candidates' backgrounds. The pamphlet did not contain candidate-specific information but it did provide information on who is eligible to vote and accepted forms of identity proof. On average, a two-member NGO team covered the households associated with a polling station in one and half days. Monitoring reports show that two-thirds of the households in a polling station were reached with the NGO spending 15 minutes per household.

Roughly ten days before the election (between November 20 and 25, 2008) our partner newspaper *Dainik Hindustan* published report cards. (An example is provided in Figure 2). On the morning that the report card for a jurisdiction in our sample was published, NGO workers placed a free copy of the newspaper on the doorstep of each household in the treatment slums in that jurisdiction. Four hundred newspapers were disseminated per slum, yielding a delivery of 80,000 newspapers. After newspaper distribution, independently hired monitors visited 20 households in each of 172 of the 200 treatment polling stations to check for newspaper presence. Newspapers were observed in 80% of households.

Finally, within 48 hours of newspaper distribution NGO workers organized a public reading of newspaper report cards. Monitor reports (for 130 meetings) reveal that the average reading lasted 1.5 hours but attendance was low. (Average attendance was 20 women and 14 men, out of a target population of 1000 adults). In 90% of the cases attendees had brought copies of the newspaper handed out during the campaign.

We augmented newspaper delivery with a pamphlet campaign and public readings in order to maximize the likelihood that slum-dwellers received the report card information. However,

this multi-pronged strategy raises the concern that the pamphlets or public readings may have directly influenced voter behavior. As we describe in detail below, several pieces of evidence suggest that the report cards were the main channel of influence. First, while the pamphlet provided no incumbent-specific information we show that voter behavior was sensitive to incumbent performance. This suggests that the impacts on incumbent vote share relate to actual information. Second, the magnitude of impacts we observe suggests an influence on the voting behavior of a significantly larger population than those attending the public readings. Finally, we have checked that the treatment effects do not vary with the quality of NGO staff conducting the public reading.(Results available from the authors).

### 3.3.2 Data

Our analysis utilizes several datasets. The first is official polling-station electoral returns. Here, the two outcomes of interest are voter turnout and incumbent vote share. Average voter turnout in control polling stations was 57%, and the average incumbent vote share was 46%. Nine of the ten incumbents were from the ruling party (Congress). 90% of the incumbents in our sample won. Some victories were narrow – the margin of victory (measured as the difference between the vote share of the winner and runner-up) varied from 0.53% to 30%.

Our second dataset is observational: in 29 treatment and 32 control polling stations, all randomly chosen (after stratifying by jurisdiction), a surveyor spent approximately four hours on the eve of the election noting evidence of party campaigning and if liquor, food, clothes or milk/refreshments were distributed alongside. The observer also noted any instances of cash-based vote buying. Over 95% of the polling stations witnessed door-to-door campaigning, and public rallies occurred in over 70%. In roughly a third of these cases, campaigning was accompanied by gift-giving. The observers reported at least one incident of cash-based vote-buying in 63% of the polling stations.

Next, we use data from a household survey conducted in the 200 treatment polling stations and a randomly selected 200 control polling stations during the six-day interval between election day and when results were announced. In each polling station ten randomly selected individuals were administered a brief pop-quiz on politician performance and perceptions of politician spending behavior. The survey was administered by an independently hired survey company

with no links to implementation of the newspaper intervention.

Finally, the report cards provide data on incumbent performance and relative qualifications. These include three performance measures: legislature activity, committee attendance and public good spending. While attendance is easy to map to performance (more attendance is good), a slum dweller's evaluation of spending depends on the relevance of that spending for her. For example, road spending may be less useful for her if there is no space for roads inside the slum. Based on this idea, after the elections we provided our NGO partners with a list of all projects in their jurisdiction that had been allocated funding by the incumbent. The NGO dispatched fieldworkers to visit the site of each spending item and identified whether spending occurred in a slum. We use this to identify development spending in slums (overall and category-wise). Figure 3a shows the average distribution of slum and non-slum spending for each public good category. In Figure 3b we focus on road spending and show that cross-jurisdiction variation in slum spending in this category is high – this pattern holds for all public goods. We, therefore, use two measures of legislator spending performance: total spending on public goods and the fraction of it that was spent in slums.

Table 2 reports a randomization check – Panel A uses electoral roll data and Panel B household survey data. A typical polling station had a thousand electors, and these electors are relatively poor – the average per capita household income is a dollar a day. In column (3) we observe balance on electoral roll covariates across treatment and control polling stations for the 775 polling stations in the electoral sample. In column (6) we observe similar balance for electoral and survey data for the household sample (3,896 respondents across 388 jurisdictions). In column (9) we consider the smaller sample of 61 polling stations for which we have observational data. Once again, the joint F-test suggests overall balance with a p-value of 0.25.<sup>17</sup>

## 4 Information Disclosures and Voter Behavior

We first report the average impacts of information disclosures on voter knowledge and electoral outcomes. We then show that, consistent with a model in which voters care about politician quality, changes in voter behavior correlate with incumbent performance and qualifications.

---

<sup>17</sup>While we report pure experimental estimates, our results are robust to controlling for household covariates.

Finally, we demonstrate voter sophistication in information use.

## 4.1 How did Voter Behavior Change?

To examine the average treatment impacts we estimate regressions of the form

$$Y_{sj} = \alpha_j + \beta T_{sj} + \epsilon_{sj} \quad (1)$$

$T_{sj}$  is a dummy indicating whether polling station  $s$  in jurisdiction  $j$  was assigned to treatment.

We include jurisdiction fixed effects  $\alpha_j$  to account for stratification.

Table 3 reports the results. First, we use the survey data to examine whether political knowledge among slum-dwellers varied with treatment status of their slum. Since the unit of observation is an individual, we cluster standard errors by polling-station and we also allow treatment impacts to vary by whether the respondent had at least 5 years of formal education.<sup>18</sup>

In columns (1)-(3) we examine respondent knowledge of legislator responsibilities, spending performance and candidate qualifications. We code a respondent's answer to a series of eleven factual questions as correct or incorrect.<sup>19</sup> In column (1) we consider the total score out of eleven as the outcome variable. The average respondent has a low score of 2.7 correct responses (out of 11). Treatment improved knowledge levels by a very significant 10% among educated respondents. In columns (2) and (3) we divide the questions into information on legislator responsibilities that the respondents received during the pamphlet phase and incumbent and challenger specific information provided by the report cards. In both categories, the campaign significantly improved information levels among educated respondents.

The treatment-induced gains in political knowledge, while very significant, are small in size and limited to educated respondents. It is likely that remembering precise numbers (for, say, spending) is hard and correlated with an ability to read newspapers. However, in terms of voting behavior what matters is perceptions of legislator performance. The survey asked respondents

---

<sup>18</sup>We choose this cut-off as it is likely to correspond to being able to read a newspaper. Slightly over a third of our sample ( 37%) have 5 years or more of education. We observe qualitatively identical but slightly noisier estimates if we include more education categories.

<sup>19</sup>We code the answer to how much was spent by the legislator as correct if it was within 1 standard deviation of actual spending. Similarly, we code the answer to how much did your legislator spend relative to the average legislator as correct if it is "more" and the legislator spent more than average, if it is "less" and the legislator spent less than average, or if it is "same" and the legislator spent within 1 standard deviation of average.

to rank incumbent spending in major public good categories as having done a lot, some or none. While not all categories match up across the survey and report card, the two largest spending categories, roads and drains, do. We create an indicator variable *much spending* if the respondent stated that the incumbent did a lot of work.<sup>20</sup>

33% of the respondents state that the incumbent did a lot of work on roads and 12% believe this to be the case for drains. In column (4) we see that, conditional on treatment, the perception that the incumbent did a lot of work is increasing in the fraction of road spending that occurred in slums. In column (5) we observe the same pattern for drains. These results are striking because the report cards provided category-specific spending but *not* spending broken down by whether it occurred in slums. This suggests that voters were able to use other available information to infer the incidence of slum spending within a category. Moreover, changes in perceptions do not differ by respondent's education, suggesting that information spread to illiterate residents.

Given these impacts on voter knowledge and perceptions, we now examine average campaign impacts on electoral outcomes. To flexibly estimate turnout effects we consider the log number of voters as the outcome variable, controlling for the log number of registered voters.<sup>21</sup> In column (6) we see that treatment slums saw a 3.5% increase in turnout while in column (7) we observe no change in incumbent vote share in treatment slums (relative to control slums).

Finally, in columns (8)-(11) we examine party responses to the campaign using our election-eve observational sample of 61 polling stations. Party campaigning is widespread: door-to-door campaigning was observed in 97% of the polling stations and a public meeting or rally in over 70%. There is no treatment effect on either type of party campaigning (columns 8 and 9). Gift-giving as part of the campaign, which included distribution of liquor, milk, clothes and food, occurred in over 30% of the slums but is unaffected by treatment (column 10). In contrast, we observe a very significant 19 percentage point decline in cash vote-buying in treatment slums relative to the control slums (column 11). Reflecting the illegal (and targeted) nature of such transactions, observers typically reported these cash based transactions as occurring between

---

<sup>20</sup>A printing error in the questionnaire meant that the third category of parks mistakenly featured twice, once in combination with community halls and once with lights. Thus, we are unable to identify perceptions on spending on parks (or the other two categories). The categories of sewage, schools, and crime do not correspond to categories on the report card and cannot be matched. The last category we can match to aggregate spending is water. However, as we lack slum spending measures for this category we do not use it.

<sup>21</sup>This specification allows the turnout response to vary as a function of number registered voters.

specific households and undercover party workers.

The turnout and vote-buying results are consistent with the idea that information provision increased the expected benefit of voting for some voters. These voters shift from not voting to voting and, alongside, the group of (close to) indifferent voters and vote-buying via cash went down. In contrast, the less targeted (and cheaper) forms of gift-giving were unaffected. The absence of an average impact on incumbent vote share may reflect the fact that treatment impacts vary with incumbent performance.

However, it remains possible that the campaign enthused citizens about voting and this directly increased turnout and reduced vote-buying. While we cannot completely rule out such direct effects, below we provide evidence that voter behavior varied with the nature of information provided in the report cards.

## 4.2 Who Benefits from Information Disclosures?

We first examine whether treatment effects varied with incumbent performance and qualifications and then exploit the richness of our report card data to demonstrate voter sophistication in information use.

### 4.2.1 Basic Results

As a summary statistic of incumbent quality, we compute and use the highest eigenvalue obtained from a principal component analysis on the entire set of performance and qualification measures provided in the report card. These include the performance measures: legislature attendance and questions asked, committee attendance, total spending and fraction spent in slums,<sup>22</sup> and three qualification dummies: whether, relative to the challengers, the incumbent was the most educated, owned the least assets and had the fewest criminal charges. We also construct separate summary measures for incumbent performance and candidate qualifications. For performance we use the variables listed above. For qualifications, we use three indicator variables – whether the candidate had less than one crore in assets, no criminal charges and a college education. We use the average of the summary measures for the two challengers as our measure of average

---

<sup>22</sup>We normalize the spending measures using the mean and standard deviation across all ten incumbents.

challenger qualifications in the jurisdiction.

The basic form of our estimating equation is:

$$Y_{sj} = \alpha_j + \beta T_{sj} + \gamma T_{sj} \times X_j + \epsilon_{sj} \quad (2)$$

where  $X_j$  is the relevant summary statistic for quality. The qualification regressions include both incumbent and challenger qualifications (interacted with treatment) as explanatory variables. All regressions include jurisdiction fixed effects. While treatment assignment coincides with the unit of observation (polling-station), incumbent quality varies at a more aggregate (jurisdiction) level. Since the small number of jurisdictions makes clustering standard errors by jurisdiction inappropriate, we report results from a randomization inference which tests the sharp null of no treatment effect. (Details are in the Appendix).

Table 4 reports the results. First, we consider turnout. In column (1) we see that turnout was lower in treatment slums (relative to control slums in the same jurisdiction) when the incumbent performs better. We calibrate the estimated effects for two values of the quality index. For the median legislator in our sample (summary statistic value of  $-0.31$ ) turnout in treatment slums was 5.3% higher relative to control slums and there was no impact on vote share. For the best performing legislator in our sample (summary statistic value of  $3.62$ ) turnout was 3.8% *lower* in treatment slums than control slums. These turnout results are consistent with a setting in which ethical voters are initially biased in favor of the challenger.<sup>23</sup> In column (2) we observe a very similar effect for the performance measure. In column (3), we include the incumbent and average challenger qualification measures, but observe no independent effect on turnout.

Next we consider incumbent vote share as the outcome variable. Relative to control slums, incumbent vote share in treatment slums is increasing in incumbent performance and qualifications (column 4). For the median legislator in the sample, treatment had no impact on vote share. For the best performing legislator incumbent vote share was 6.9% *higher* in treatment slums relative to control. Better performing incumbents receive more votes in treatment slums (column 5). In contrast, in the case of qualifications, the average challenger's, but not the in-

---

<sup>23</sup>There is no contradiction between this and the fact that the incumbent won almost everywhere since the partisan voters may have, on average, been more pro-incumbent. In fact, exit polls suggest that a significant fraction of voters were partisan who supported the chief minister.

cumbent's, qualifications influences incumbent vote share. The latter finding is consistent with the idea that incumbent performance is more informative than qualifications and hence voters rationally ignore the latter. The regression also includes the average challenger qualifications for the neighboring jurisdiction (the other report card which featured in the same newspaper) interacted with treatment as an additional explanatory variable. Reassuringly, we find that voters ignore information on these irrelevant challengers.

Finally, we consider vote-buying as the outcome. In columns (7)-(9) the point estimates suggest that the decline in cash bribes was concentrated in jurisdictions where the incumbent performed better or where the challengers were relatively better qualified. However, possibly reflecting the small sample size, these impacts are insignificant.

We end this sub-section by discussing two identification concerns. Incumbents and challengers were not randomly assigned to jurisdictions and it is possible that (for instance) jurisdictions with more educated voters also elected better incumbents. This difference in jurisdiction and politician characteristics *per se* is not a problem. Since our randomization of polling stations was stratified by jurisdiction all regressions include jurisdiction fixed effects. Hence, we identify the impact from a comparison of treatment and control polling stations *within* a jurisdiction.

To make this more transparent we estimate jurisdiction-wise regressions of the form given by equation (1) for turnout and incumbent vote share and present the treatment estimates visually. Figures 4a and 4b present these for two measures: the summary measure and slum spending. (In all cases a lower score reflects better performance). Both figures show a similar pattern. In treatment slums, relative to control slums, turnout is lower and incumbent vote share is higher when an incumbent performs well. The converse is true if the incumbent was a poor performer.

A related, but distinct, concern is that jurisdiction-specific characteristics may directly influence voter responsiveness to information. For instance, if more educated voters both elect better incumbents and respond to receiving newspapers by becoming more pro-incumbent then we may observe the effects seen in Figures 4a and 4b even when voters do not care about performance *per se*. In Appendix Table 1 we report regressions which include additional jurisdiction-level covariates interacted with treatment. In columns (1) and (3) we consider two measures of political preference in the jurisdiction – whether the incumbent belonged to the ruling party (Congress) and turnout in the jurisdiction in the previous election. Our main effects are robust to control-

ling for these two variables. Next, we examine whether our impacts are robust to interacting treatment with demographic variables. Since census data is not available at the political jurisdiction level we construct variables from the post-poll data (we have roughly 400 respondents per jurisdiction). Our basic results remain robust (columns 2 and 4).

#### 4.2.2 Which Aspects of Performance and Qualification Matter?

Our model of voter behavior suggests that, faced by multiple sources of information, voters discount the relatively noisy incumbent quality signals. Motivated by this observation, we examine the impact of different types of performance and qualification information and in doing so demonstrate significant sophistication in how voters process information.

We restrict attention to incumbent vote share as the outcome of interest. This is both for expositional ease and because the impact of information on turnout depends on voters' priors (on which, unfortunately, we lack data). For each performance measure we estimate two specifications. First, basic regressions of the form given by (2). Second, we examine whether voters use information on performance of the incumbent in the neighboring jurisdiction (the report card for whom also featured in the same newspaper) to benchmark their incumbent's performance. In this case our estimating equation is of the form

$$Y_{sj} = \alpha_j + \beta_1 T_{sj} + \beta_2 P_j \times T_{sj} + \beta_3 P_k \times T_{sj} + \epsilon_{sj} \quad (3)$$

where  $P_k$  is the performance measure for the incumbent in the neighboring jurisdiction.

The results are in Table 5. Columns (1)-(2) show that voting outcomes are unaffected by information about an incumbent's attendance in the legislature and his record of asking questions in the legislative assembly. This is consistent with our survey data that suggest that slum dwellers see their legislator's main responsibilities as relating to local development and grievance redressal, not the enacting of bills.

Columns (3)-(4) consider committee attendance. The report cards provided information on whether the last committee meeting was held according to schedule and whether the incumbent attended the meeting. We construct an aggregate committee attendance index based on attendance in the Ration Committee and Police Committee meetings. Going from attending neither

committee to attending both increases the incumbent's vote share by over seven percentage points (column 3). We also find evidence of benchmarking (column 4). The vote share of the incumbent is lower when the neighbor's committee attendance is higher.

In columns (5)-(9) we examine whether incumbent vote share is sensitive to the extent of discretionary fund spending and the fraction of spending in slums. A failure to spend available funds may measure a lack of effort on the part of the incumbent. Alternatively, the widespread belief that discretionary spending is subject to significant corruption may lead respondents to associate higher spending with greater corruption. Possibly reflecting this ambivalence, we fail to observe voter responsiveness to total spending by the incumbent. In contrast, incumbent vote share is increasing in the extent of the spending that is in slums (possibly reflecting the view that as long as you are spending, we want you to spend in our neighborhoods). In columns (6)-(8) we separately consider the three largest spending categories – roads, parks and drains. These are also the three categories for which we see spending in every jurisdiction. In every case, voters respond *not* to the overall level of spending but only to slum-specific spending in the category. Incumbent vote share is increasing in slum spending in each category. This is further evidence that voters use information about slum spending *within* public good categories

In column (9) we return to total spending and show that there is no evidence of benchmarking. This is not too surprising given that voters react only to slum, not total, spending and it is likely that they do not know the extent of slum spending in neighboring jurisdictions.

More broadly, the spending results suggest significant voter sophistication. Recall that slum spending was not separately provided in the report cards – the report cards could, therefore, only have enabled the voters to identify amount spent but not whether it was spent in slums. For the latter, they would have relied on personal experience. For example, if they read that the legislator had spent a lot on roads but had never seen any road improvements in their own vicinity, they probably judged him negatively. This is also why they did not react to the spending patterns in the neighboring jurisdiction – they had no way to turn the spending information for a category into information about how much was spent in slums.

Finally, we consider the three qualification measures. In the case of assets, column (10) shows that the incumbent gets fewer votes if a higher fraction of challengers are not *crorepatis* (i.e. have less than Rs. 10 million in assets). Turning to education, we again see that the

incumbent does worse if a higher fraction of challengers have a college education (column 11). In contrast, voters do not pay heed to challengers' criminal charges. Finally, in no case do voters place weight on the incumbent's own qualifications. This is consistent with the view that performance indicators provide much more precise new information about incumbent quality than does qualification data.

## 5 Conclusion

The idea that voters in an otherwise well-functioning democracy might be severely constrained by information about their candidates' qualifications and past record is both striking and important. We see that voters move quite substantially when given this information. Indeed, our results suggest that if this information had reached the entire jurisdiction, electoral outcomes would have changed in the two closest elections out of our sample of ten jurisdictions. Specifically, we have estimated regressions where the vote-difference between incumbent and best performing challenger is the dependent variable and we use the summary measure of incumbent performance as the independent variable of interest. Our treatment would have caused the second best performer to win rather than lose and the sixth best performer to lose instead of win.<sup>24</sup> We also see evidence that voters are somewhat sophisticated in how they use the information, allaying fears that information would simply confuse them.

## References

- Acemoglu, D., J. Robinson, and R. Santos-Villagran (2010). The Monopoly of Violence: Evidence from Colombia.
- Aidt, T., M. Golden, and D. Tiwari (2011). Incumbents and Criminals in the Indian National Legislature.

---

<sup>24</sup>Our estimates suggest that the second best performer would have won by 341 votes rather than lose by 366 and that the sixth best performer would have lost by 604 rather than win by 407 votes. Results available from authors.

- Banerjee, A. V., D. Green, J. Green, and R. Pande (2010). Can Voters be Primed to Choose Better Legislators? Experimental Evidence from Rural India.
- Banerjee, A. V. and R. Pande (2009). Parochial Politics: Ethnic Preferences and Politician Corruption. mimeo, Harvard.
- Battaglini, M., R. Morton, and T. Palfrey (2010). The Swing Voter's Curse in the Laboratory. *Review of Economic Studies* 77(1), 61–89.
- Besley, T. and R. Burgess (2002). The Political Economy of Government Responsiveness: Theory and Evidence from India. *Quarterly Journal of Economics* 117(4), 1415–1451.
- Bloom, H. and D. Price (1975). Voter Response to Short Run Economic Conditions: The Asymmetric Effect of Prosperity and Recession. *American Political Science Review* 69, 1254–60.
- Chandra, K. (2004). *Why Ethnic Parties Succeed: Patronage and Ethnic Headcounts in India*. Cambridge: Cambridge University Press.
- Chong, A., A. L. D. L. O, D. Karlan, and L. Wantchekeon (2010). Information Dissemination and Local Governments' Electoral Returns: Evidence from a Field Experiment in Mexico.
- Coate, S. and T. Conlin (1994). A Group Rule-Utilitarian Approach to Voter Turnout: Theory and Evidence. *American Economic Review* 94(5), 1476–1504.
- Collier, P. and P. Vicente (2008). Votes and Violence: Evidence from a Field Experiment in Nigeria. Center for The Study of African Economies Working Paper Series.
- Djankov, S., R. LaPorta, F. L. de Silanes, and A. Shleifer (2010). Disclosure by Politicians. *American Economic Journal: Applied Economics*, forthcoming.
- Feddersen, T. (2004). Rational Choice Theory and the Paradox of Not Voting. *Journal of Economic Perspectives* 18(1), 99–112.
- Feddersen, T. and W. Pesendorfer (1996). The Swing Voter's Curse. *American Economic Review* 86(3), 408–424.

- Feddersen, T. and W. Pesendorfer (1999). Abstention in Elections with Asymmetric Information and Diverse Preferences. *American Political Science Review* 93(2), 381–398.
- Feddersen, T. and A. Sandroni (2006). A Theory of Participation in Elections. *American Economic Review* 96(4), 1271–1282.
- Ferraz, C. and F. Finan (2008). Exposing Corrupt Politicians: The Effects of Brazil’s Publicly Released Audits on Electoral Outcomes. *Quarterly Journal of Economics* 123(2), 703–745.
- Gentzkow, M. (2006). Television and Voter Turnout. *Quarterly Journal of Economics* 121(3), 931–972.
- Gerber, A. and D. Green (2000). The Effects of Canvassing, Telephone Calls, and Direct Mail on Voter Turnout: A Field Experiment. *The American Political Science Review* 94(3), 653–663.
- Gine, X. and G. Mansuri (2010). Together We Will: Evidence from a Field Experiment on Female Voter Turnout in Pakistan.
- Green, J. and N. Stokey (1983). A Comparison of Tournaments and Contracts. *Journal of Political Economy* 91(3), 349–364.
- Harsanyi, J. (1977). Rule Utilitarianism and Decision Theory. *Erkenntnis* 11(1), 25–53.
- Hastings, J., T. Kane, D. Staiger, and J. Weinstein (2007). The Effect of Randomized School Admissions on Voter Participation. *Journal of Public Economics* 9, 915–937.
- Holmstrom, B. (1982). Moral Hazard in Teams. *Bell Journal of Economics* 13(2), 324–340.
- Horowitz, D. L. (1985). *Ethnic Groups in Conflict*. Berkeley: University of California Press.
- Humphreys, M. and J. Weinstein (2010). Policing Politicians: Citizen Empowerment and Political Accountability in Uganda.
- IANS (2008). Indo-Asian News Service. Bootlegging in Delhi up 400 pc during election week.
- Lazear, E. and S. Rosen (1981). Rank Order Tournaments as Optimum Labor Contracts. *Journal of Political Economy* 80(4), 841–864.

- Olken, B. and R. Pande (2011). Corruption in Developing Countries. *NBER Working Paper 4*.
- Pande, R. (2011). Can Informed Voters Enforce Better Governance? Experiments in Low Income Democracies. *Annual Review of Economics* 3, 215–237.
- Peisakhin, L. V. (2011). Transparency and Corruption: Evidence from India. *Journal of Law and Economics*, forthcoming.
- PricewaterhouseCoopers (2009). Final Report: Understanding the “Key Issues and Constraints” in Implementing the RTI Act. <http://rti.gov.in/rticorner/studybypwc/index-study.htm>.
- Simpser, A. (2008). Cheating Big: On the Logic of Electoral Corruption in Developing Countries.
- Snyder, J. and D. Stromberg (2010). Press Coverage and Electoral Accountability. *Journal of Political Economy* 118(1), 355–408.
- Stromberg, D. (2004). Radio’s Impact on Public Spending. *Quarterly Journal of Economics* 119(1), 189–221.
- Washington, E. (2006). How Black Candidates Affect Voter turnout. *Quarterly Journal of Economics* 121(3), 973–998.

## 6 Appendix

### 6.1 Theory

#### Optimal Group Rule for Ethical Voters

Suppose the incumbent is expected to be the better candidate ( $D \equiv E[\theta_I|\tilde{\theta}_I, \tilde{y}] - E[\theta_C|\tilde{\theta}_C] > 0$ ). If all ethical voters with cost below  $c^*$  vote for the incumbent then he will win as long as

$$\mu\xi + (1 - \mu)\frac{c^*}{\bar{c}} \geq \mu(1 - \xi) \text{ or } \xi \geq \frac{1}{2}\left[1 - \frac{(1 - \mu)}{\mu}\frac{c^*}{\bar{c}}\right].$$

Therefore, for  $D > 0$   $c^*$  is chosen to maximize the net payoff to the group of ethical voters

$$D \int_{\xi^*}^{\frac{1}{2}+\bar{\xi}} \frac{1}{2\bar{\xi}} d\xi - \int_0^{c^*} \frac{c}{\bar{c}} dc \text{ where } \xi^* = \max\left\{\frac{1}{2}\left[1 - \frac{(1 - \mu)}{\mu}\frac{c^*}{\bar{c}}\right], \frac{1}{2} - \bar{\xi}\right\}$$

$c^*$  is chosen either so that  $\frac{1}{2}[1 - \frac{(1-\mu)}{\mu} \frac{c^*}{\bar{c}}] = \frac{1}{2} - \bar{\xi}$  or  $c^* = \bar{c}$  or there is an interior maximum where  $D \frac{1}{2\xi} \frac{(1-\mu)}{2\mu} = c^*$ .<sup>25</sup> We assume  $\forall$  feasible values of  $c^*$ :

$$\frac{1}{2}[1 - \frac{(1-\mu)}{\mu} \frac{c^*}{\bar{c}}] > \frac{1}{2} - \bar{\xi} \text{ which is equivalent to } \bar{\xi} > \frac{1}{2} \frac{(1-\mu)}{\mu}.$$

This, in turn, implies turnout of ethical voters is given by

$$c^* = \lambda |D| \text{ where } \lambda = \frac{1}{2\bar{\xi}} \frac{(1-\mu)}{2\mu}$$

unless  $\lambda |D| > \bar{c}$ , in which case  $c^* = \bar{c}$ .

**Proof of Result 2** Assuming initial turnout < 100%, the expression for turnout is given by

$$\begin{aligned} \mu + (1-\mu) \{ & \frac{1}{\bar{c}} \text{Prob}[\frac{\bar{c}}{\lambda} - \Delta \geq z \geq -\Delta] E[z + \Delta | \frac{\bar{c}}{\lambda} - \Delta \geq z \geq -\Delta] - \\ & \frac{1}{\bar{c}} \text{Prob}[-\frac{\bar{c}}{\lambda} - \Delta \leq z \leq -\Delta] E[z + \Delta | -\frac{\bar{c}}{\lambda} - \Delta \leq z \leq -\Delta] + \text{Prob}[z \geq \frac{\bar{c}}{\lambda} - \Delta] + \text{Prob}[z \leq -\frac{\bar{c}}{\lambda} - \Delta] \} \end{aligned}$$

Using the expression for the expectation of a truncated normal variable this can be rewritten as

$$\begin{aligned} \mu + (1-\mu) \{ & (\Phi(\frac{\bar{c}}{\sigma} - \Delta)(\frac{\Delta - \bar{c}}{\bar{c}}) + \Phi(-\frac{\bar{c}}{\sigma} - \Delta)(\frac{\Delta + \bar{c}}{\bar{c}}) - \frac{\Delta}{\bar{c}} 2\Phi(-\frac{\Delta}{\sigma})) \} + \\ & \frac{\sigma(1-\mu)}{\bar{c}} \{ 2\phi(-\frac{\Delta}{\sigma}) - \phi(\frac{\bar{c}}{\sigma} - \Delta) - \phi(-\frac{\bar{c}}{\sigma} - \Delta) \} + (1-\mu). \end{aligned}$$

where  $\Phi$  and  $\phi$  are, respectively, the distribution function and density function corresponding to the standard normal distribution. Taking derivative of turnout with respect to  $\sigma$  and since for the standard normal distribution,  $\phi'(x) + x\phi(x) = 0$  gives:

$$\frac{1-\mu}{\bar{c}} [2\phi(-\frac{\Delta}{\sigma}) - \phi(\frac{\bar{c}}{\sigma} - \Delta) - \phi(-\frac{\bar{c}}{\sigma} - \Delta)]$$

For  $\Delta = 0$  this expression is positive since  $\phi(0) > \phi(\frac{\bar{c}}{\lambda\sigma})$  and  $\phi(0) > \phi(-\frac{\bar{c}}{\lambda\sigma})$ . Turnout, on average,

---

<sup>25</sup>Likewise, in the case where  $D < 0$ , it is easily checked that at an interior optimum,  $|D| \frac{1}{2\xi} \frac{(1-\mu)}{2\mu} = c^*$

goes up when variance of the effective signal goes up. More generally,

$$-\frac{\Delta}{\sigma} = \frac{1}{2} \left[ \frac{\frac{\bar{c}}{\lambda} - \Delta}{\sigma} + \frac{-\frac{\bar{c}}{\lambda} - \Delta}{\sigma} \right]$$

and hence turnout increases with effective signal variance as long as  $\phi$  is concave over the range  $-\frac{-\frac{\bar{c}}{\lambda} - \Delta}{\sigma}$  to  $\frac{\frac{\bar{c}}{\lambda} - \Delta}{\sigma}$ .  $2\phi(-\frac{\Delta}{\sigma}) - \phi(\frac{\frac{\bar{c}}{\lambda} - \Delta}{\sigma})$  Hence  $-\phi(\frac{-\frac{\bar{c}}{\lambda} - \Delta}{\sigma}) > 0$ . However,  $\phi$  eventually becomes convex and therefore this property does not necessarily hold globally. The point of inflection for the standard normal distribution is 1, so a sufficient condition for turnout to go up with  $\sigma$  is that

$$\frac{\frac{\bar{c}}{\lambda} - \Delta}{\sigma} < 1, \text{ and, symmetrically, } \frac{-\frac{\bar{c}}{\lambda} - \Delta}{\sigma} > -1.$$

For given values of  $\bar{c}$  and  $\lambda$  this holds under two conditions:  $|\Delta|$  should not be too large and  $\sigma$  should not be too small.

**Proof for Result 3:** For a given value of  $\tilde{y}, \tilde{\theta}_I, \tilde{\theta}_C$ ,  $V$  is defined to be

1.  $\frac{\mu E[\xi] + (1-\mu) \frac{\lambda |D|}{\bar{c}}}{\mu + (1-\mu) \frac{\lambda |D|}{\bar{c}}} = \frac{\frac{\mu}{2} + (1-\mu) \frac{\lambda |D|}{\bar{c}}}{\mu + (1-\mu) \frac{\lambda |D|}{\bar{c}}}$  if  $\bar{c} \geq \lambda D \geq 0$
2.  $\mu E[\xi] + (1-\mu) = 1 - \frac{\mu}{2}$  if  $\bar{c} < \lambda D$
3.  $\frac{\mu E[\xi]}{\mu + (1-\mu) \frac{\lambda |D|}{\bar{c}}} = \frac{\frac{\mu}{2}}{\mu + (1-\mu) \frac{\lambda |D|}{\bar{c}}}$  if  $-\bar{c} \leq \lambda D < 0$
4.  $\mu E[\xi] = \frac{\mu}{2}$  if  $-\bar{c} > \lambda D$

Let  $\kappa$  be a parameter which shifts  $h_\epsilon$  and  $h_{\eta_X}$ . For fixed values of  $\tilde{y}, \tilde{\theta}_I, \tilde{\theta}_C$

$$\frac{dV}{d\kappa} = \frac{\lambda(1-\mu)}{\bar{c}} \frac{\frac{\mu}{2}}{\left[ \mu + \frac{\lambda(1-\mu)}{\bar{c}} |D| \right]^2} \frac{dD}{d\kappa} \text{ when } \bar{c} \geq \lambda D \geq -\bar{c} \quad (4)$$

$$\text{and } \frac{dV}{d\kappa} = 0 \text{ otherwise.}$$

We are interested in  $\frac{dV}{d\kappa}$  when  $\tilde{y}, \tilde{\theta}_I$  go up or when  $\tilde{\theta}_C$  goes down. We can ignore cases when  $\bar{c} < \lambda |D|$  because then  $V$  does not depend on  $\kappa$ . Assume  $\bar{c} > \lambda |D|$ . Equation (4) gives relevant expressions for  $\frac{dV}{d\kappa}$ . Let us start with the  $\frac{dD}{d\kappa}$  term, which can be rewritten as

$$\left[ \frac{\left( h_I \frac{dh_{\eta_I}}{d\kappa} + h_\epsilon \frac{dh_{\eta_I}}{d\kappa} - h_{\eta_I} \frac{dh_\epsilon}{d\kappa} \right) \tilde{\theta}_I + \left( h_I \frac{dh_\epsilon}{d\kappa} + h_{\eta_I} \frac{dh_\epsilon}{d\kappa} - h_\epsilon \frac{dh_{\eta_I}}{d\kappa} \right) \tilde{y} - h_I \left( \frac{dh_\epsilon}{d\kappa} + \frac{dh_{\eta_I}}{d\kappa} \right) \bar{\theta}_I }{(h_I + h_{\eta_I} + h_\epsilon)^2} - \frac{h_C (\tilde{\theta}_C - \bar{\theta}_C) \frac{dh_{\eta_C}}{d\kappa}}{(h_C + h_{\eta_C})^2} \right].$$

Using the fact that  $\frac{1}{h_{\eta_I}} \frac{dh_{\eta_I}}{d\kappa} = \frac{1}{h_\epsilon} \frac{dh_\epsilon}{d\kappa}$ , this expression reduces to

$$\frac{h_I \frac{dh_{\eta_I}}{d\kappa} (\tilde{\theta}_I - \bar{\theta}_I) + h_I \frac{dh_\epsilon}{d\kappa} (\tilde{y} - \bar{\theta}_I)}{(h_I + h_{\eta_I} + h_\epsilon)^2} - \frac{h_C (\tilde{\theta}_C - \bar{\theta}_C) \frac{dh_{\eta_C}}{d\kappa}}{(h_C + h_{\eta_C})^2}. \quad (5)$$

This expression is clearly increasing in both  $\tilde{y}$  and  $\tilde{\theta}_I$  and decreasing in  $\tilde{\theta}_C$ .

Next consider  $\frac{\frac{\mu}{2}}{[\mu + \frac{\lambda(1-\mu)}{\bar{c}} |D|]^2}$ . An increase in  $\tilde{y}$  or  $\tilde{\theta}_I$  or a reduction in  $\tilde{\theta}_C$  will increase  $z$  but may either increase or decrease  $|D|$ , depending on whether to start with  $\Delta + z < 0$ . Moreover the effect of an increase in  $|D|$  on  $\frac{dV}{d\kappa}$  depends on the sign of  $\frac{dD}{d\kappa}$ . This effect is potentially ambiguous but can be made as small as we want by assuming  $\mu$  is close enough to one (which also makes  $\lambda$  approach zero) or  $\bar{c}$  is large enough. This is what the proposition assumes. Hence the result.

## 6.2 Data

Our randomization inference p-values are based on 10,000 replications within each sample frame. We explain the procedure for regressions using polling station electoral data. We took as the sample frame polling stations and then simulated treatment assignment by randomly selecting 20 polling stations in each jurisdiction. We repeated this simulation 10,000 times so that we had 10,000 different treatment-control assignments in our 10 jurisdictions. Thus the basic idea is to reassign treatment while leaving outcomes unaffected to represent the hypothesis of no effect. Next we run regressions with simulated treatment and compare with actual treatment effects. After creating each simulated treatment variable we re-ran the regressions. These simulations yield a distribution for each coefficient, centered around 0, with standard deviations that could be compared to the standard errors on the coefficients from regressions using actual treatment assignment. We then perform t-tests on whether the actual coefficients are comparable to the simulated coefficients. Since the simulated coefficients are approximately 0, this is equivalent to measuring the significance levels of the actual coefficients but replacing the actual standard errors with the simulated standard errors.

**Table 1: Politician Characteristics and Voter Behavior: Summary Statistics**

	All Incumbents	Sampled Incumbents			Mean for Sampled Challengers	Diff. sampled/ non- sampled incumbents (p- value)
		Mean	Mean	Max. Value		
		(1)	(2)	(3)	(4)	(5)
<b>Panel A: Incumbent Performance</b>						
Legislature Attendance	16.885 (3.401)	16.000 (5.268)	18	0.000		0.552
Any Legislature Questions	0.500 (0.504)	0.500 (0.527)	1	0.500		1.000
Ration Committee	0.667 (0.475)	0.500 (0.527)	1	0.500		0.256
Police Committee	0.457 (0.504)	0.444 (0.527)	1	0.556		0.937
Development Committee	0.293 (0.459)	0.000 (0.000)	0	1.000		0.000
Total MLALADS Spending	5.122 (1.058)	5.018 (0.888)	6.007	0.000		0.690
MLALADS Road Spending	3.073 (1.118)	3.270 (1.207)	5.232	0.000		0.562
MLALADS Park Spending	0.586 (0.612)	0.674 (0.718)	2.219	0.000		0.661
MLALADS Drain Spending	0.515 (0.427)	0.497 (0.312)	1.053	0.000		0.849
MLALADS Spending in Slums		1.437 (2.060)	5.935	0.000		
Water Board Spending		0.989 (0.053)	1.054	0.000		
<b>Panel B: Candidate Qualifications</b>						
Charged with Crime	0.600 (0.516)	1	0.400	0.250 (0.444)		
Net Assets	1.971 (1.759)	5.95	0.000	2.542 (3.643)		
Has One Crore Rs	0.700 (0.483)	1	0.300	0.500 (0.513)		
Did Not Attend College	0.200 (0.422)	1	0.800	0.600 (0.503)		
<b>Panel C: Electoral Information</b>						
Incumbent Vote Share	44.892 (10.933)	46.003 (7.786)	54.65	0.000		0.646
Voter Turnout	0.577 (0.036)	0.575 (0.107)	0.945	0.000		0.679

*Notes:*

1. Panel A reports incumbent outcomes compiled from RTI data. Sample size for column (1) and (2) is 70 and 10, respectively. Panel B reports candidate outcomes from candidate affidavits. Sample size for column (5) is 20. Panel C reports jurisdiction-level outcomes for re-contesting incumbents.

2. Column (6) reports p-values of tests of differences in means of unsampled and sampled incumbents.

3. The spending and net asset variables are in 10 million Rs. The committee variables equal one if the legislator attended the most recent meeting and zero if the legislator did not attend the most recent meeting or if no committee meeting was held during the last 3 quarters.

**Table 2: Randomization Check**

	Full sample		Diff (1) and (2): p-value	Household survey sample		Diff (4) and (5): p-value	Observation sample		Diff (7) and (8): p-value
	Control	Treatment		Control	Treatment		Control	Treatment	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
<b>Panel A: Electoral Rolls</b>									
Total Electors	1013.977	1000.510	0.478	1016.979	1002.546	0.622	933.094	1044.034	0.365
	(321.010)	(305.698)		(327.605)	(305.837)		(379.542)	(374.847)	
Total Female Electors	424.424	427.495	0.783	418.536	428.603	0.482	382.531	440.103	0.223
	(142.392)	(138.124)		(139.553)	(137.951)		(145.307)	(173.622)	
Electors per Household	4.404	4.542	0.488	4.375	4.556	0.356	4.292	4.980	0.307
	(2.069)	(2.135)		(2.288)	(2.153)		(2.859)	(1.697)	
Elector Age	35.501	35.333	0.926	35.215	35.307	0.671	34.686	35.469	0.245
	(2.340)	(2.408)		(2.456)	(2.412)		(1.984)	(2.980)	
Percent Temporary Housing							0.108	0.116	0.960
Joint F Test			0.815			0.831			0.328
Observations	575	200		195	194		32	29	
<b>Panel B: Survey Data</b>									
Female			0.496	0.499	0.776	0.547	0.505	0.101	
			(0.500)	(0.500)		(0.499)	(0.501)		
Age			36.510	35.918	0.278	34.968	36.722	0.176	
			(13.320)	(12.912)		(12.779)	(14.157)		
House Size			5.952	6.097	0.143	5.949	6.194	0.333	
			(2.701)	(2.924)		(2.553)	(3.163)		
Monthly Income (INR)			6385.397	6687.185	0.268	5460.000	7499.665	0.038	
			(5321.758)	(5933.879)		(3322.642)	(7181.029)		
Ration Card Holder			0.817	0.819	0.958	0.823	0.819	0.940	
			(0.387)	(0.385)		(0.382)	(0.385)		
Literate			0.762	0.776	0.461	0.727	0.833	0.047	
			(0.426)	(0.417)		(0.446)	(0.374)		
Muslim			0.153	0.182	0.249	0.151	0.174	0.496	
			(0.360)	(0.386)		(0.359)	(0.380)		
Low Caste			0.579	0.583	0.891	0.685	0.579	0.194	
			(0.494)	(0.493)		(0.465)	(0.495)		
Joint F Test					0.752				0.255
Observations			1946	1952		311	299		

**Notes:**

1. Panel A reports polling station-level outcomes. Panel A, columns (4) - (6) are restricted to polling stations included in the postpoll household survey. Panel A, columns (7) - (9) are restricted to polling stations included in the observational study of polling stations on the eve of elections. Panel B reports individual-level outcomes from the household survey, restricted to the corresponding subset of polling stations from Panel A.
2. Columns (1), (2), (4), (5), (7) and (8) report means with standard deviations in parentheses. Columns (3), (6) and (9) report p-values of tests of differences in means across preceding two columns. Panel A calculations include jurisdiction fixed-effects and robust standard errors. Panel B calculations include jurisdiction fixed effects and standard errors clustered by polling station.
3. "Electors per Household" is the average number of registered voters per household. Ration card holder refers to having been identified as sufficiently poor and eligible for subsidized food.

**Table 3: Average Treatment Effects: Voter Knowledge, Perceptions and Behavior and Party Campaigning**

	Voter Knowledge: Quiz Score			Voter Perceptions		Voter Behavior		Party Campaigning			
	Total	Responsibilities	Qualifications and Spending	Much road spending	Much drain spending	log(Voters)	Incumbent Vote Share	Door to Door Campaign	Public Meeting or Rally	Gift-Giving at Campaign or Rally	Cash Bribe
				(4)	(5)			(8)	(9)	(10)	(11)
Treatment	-0.017 (0.090)	0.013 (0.043)	-0.030 (0.067)	0.028 (0.072)	-0.035 (0.035)	0.035** (0.016)	0.004 <b>(0.011)</b>	-0.034 (0.057)	0.029 (0.088)	0.100 (0.081)	-0.194** (0.091)
Educated	0.125* (0.066)	0.058* (0.031)	0.067 (0.052)	-0.084 (0.067)	0.000 (0.029)						
Treatment*Educated	0.280*** (0.102)	0.096* (0.049)	0.184** (0.080)	0.083 (0.090)	-0.031 (0.040)						
Treatment*MLA LADS Spending in that category				-0.023 (0.023)	-0.011 (0.043)						
Educated*MLA LADS Spending in that category				0.034* (0.019)	0.013 (0.040)						
Treatment*MLA LADS Spending in that category*Educated				-0.038 (0.028)	0.062 (0.055)						
Treatment*MLA LADS Spending in that category in Slums				0.061*** (0.023)	0.205*** (0.075)						
Educated*MLA LADS Spending in that category in Slums				0.001 (0.024)	-0.031 (0.055)						
Treatment*MLA LADS Spending in category in Slums*Educated				0.020 (0.033)	-0.020 (0.091)						
Observations	3898	3898	3898	3898	3898	775	775	61	61	61	61
Control Mean	2.707	1.291	1.352	0.327	0.125	0.575	0.463	0.969	0.719	0.375	0.625

**Notes:**

1. Columns (1)-(5) use household survey data and include standard errors clustered at the polling station level. Columns (6) and (7) use electoral results and electoral rolls and column (6) includes a control for log number of registered voters. Columns (8)-(11) use observational data from poll observers on the day of voting. All regressions includes jurisdiction fixed effects.
2. The dependent variables are: (1) total quiz score (out of 11 questions listed below); (2) score on questions 1, 2 and 3; (3) score on questions 4-11; (4) dummy for whether respondent observed "lots of work" on road development in jurisdiction during past 4-5 years; (5) dummy for whether respondent observed "lots of work" on drain development in jurisdiction during past 4-5 years; (6) log number of voters; (7) incumbent's share of total votes cast; (8) whether a door to door campaign on behalf of any party was observed; (9) whether a public meeting or rally on behalf of any party was observed; (10) whether any gifts of liquor, clothes, milk, or food was observed during party campaigning or rallies; and (11) whether any cash bribe was observed during party campaigning or rallies. MLALADS" variables refer to incumbent spending from 2004 to 2007. The Educated dummy variable is 1 if the respondent has at least 5 years of formal education.

**Quiz Questions:**

- |                                                                       |                                            |                                                                                        |
|-----------------------------------------------------------------------|--------------------------------------------|----------------------------------------------------------------------------------------|
| Q1: Does your legislator get money to spend on local development?     | Q4: Which candidate is the wealthiest?     | Q8: How much money was spent by your legislator on local development?                  |
| Q2: How much money is given to your legislator for local development? | Q5: Which candidate is the most criminal?  | Q9: What did your legislator spend the most money on?                                  |
| Q3: Name government committees.                                       | Q6: Which candidate is the least criminal? | Q10: What did your legislator spend the least money on?                                |
|                                                                       | Q7: Which candidate is the most educated?  | Q11: How did your legislator's spending compare to the average legislator in spending? |

**Table 4: Impact of Incumbent Performance and Qualifications on Turnout and Incumbent Vote Share**

	log(Votes)			Incumbent Vote Share			Cash Bribe		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Treatment	0.044*** (0.016)	0.046*** (0.016)	0.012 (0.025)	-0.003 (0.011)	-0.005 (0.012)	-0.002 (0.019)	-0.195** (0.091)	-0.183** (0.091)	-0.280 (0.194)
Treatment*Overall Incumbent Quality	-0.023*** (0.009)			0.018*** (0.007)			-0.124 (0.136)		
Treatment*Incumbent Performance		-0.023*** (0.009)			0.019*** (0.007)			-0.095 (0.133)	
Treatment*Incumbent Qualifications			0.032 (0.036)			0.015 (0.023)			0.105 (0.143)
Treatment*Average Challenger Qualifications			0.055 (0.061)			-0.080** (0.037)			-0.176 (0.444)
Treatment*Average Opposite Jurisdiction Challenger Qualifications			-0.046 (0.051)			0.042 (0.035)			0.297 (0.259)
Observations	775	775	775	775	775	775	61	61	61

**Randomization Inference: p-values for Probability(Actual Coefficient = Estimated Coefficient)**

Treatment*Overall Incumbent Quality	0.008	0.030	0.393
Treatment*Incumbent Performance	0.007	0.004	0.271
Treatment*Incumbent Qualifications	0.186	0.268	0.373
Treatment*Average Challenger Qualifications	0.195	0.019	0.368
Treatment*Average Opposite Jurisdiction Challenger Qualifications	0.176	0.131	0.279

**Notes:**

1. We report OLS regressions containing jurisdiction fixed effects and robust standard errors. The turnout regressions include log registered voters as a control. The outcome variables are as defined in Notes to Table 3. The performance and qualification data are from the report cards.

2. The overall incumbent quality variable is the first component resulting from a principal component analysis (PCA) of the performance measures (z\_score(total spending), z\_score(total slum spending), ration committee attendance, police committee attendance, any legislature questions asked, and z\_score(legislature attendance)) and three dummies for whether the incumbent was the best candidate in terms of highest education, lowest (or no) criminal charge record and least assets. Z scores use means and standard deviations from the 10-jurisdiction sample. The Incumbent Performance variable is the first component from a PCA of the performance measures and Incumbent Qualifications is the first component from a PCA of Has Less Than One Crore Rs. in Assets, Is College Educated and Doesn't Have Any Criminal Charges. Average Challenger Qualifications is the average of the qualifications PCA for the two challengers and Average Opposite Jurisdiction Challenger Qualifications is the same for the challengers in the neighboring jurisdiction (the other report card for featured in the same newspaper).

3. Randomization Inference coefficients and standard errors are based on 10,000 simulated treatment assignments. The p-values are the probabilities that the coefficients obtained from the interaction of actual treatment with the performance or qualifications variables came from the distribution of coefficients obtained from simulated treatment interactions.

**Table 5: Incumbent Vote Share: Which Aspects of Performance and Qualification Matter?**

	Performance Measures										Qualification Measures		
	Legislature Measures		Committee Attendance		MLALADS Spending					Criminal Charge			
	(1)	(2)	(3)	(4)	All	Roads	Parks	Drains	All	Assets	Education	(12)	
Treatment	0.006 (0.034)	0.021 (0.052)	-0.029 (0.019)	0.016 (0.028)	0.009 (0.076)	0.005 (0.032)	0.015 (0.018)	-0.018 (-0.021)	0.040 (0.116)	0.038* (0.022)	0.041* (0.024)	0.007 (0.049)	
Treatment*Incumbent Measure1	-0.001 (0.002)	-0.001 (0.002)	0.077** (0.039)	0.069* (0.039)	-0.005 (0.015)	-0.006 (0.009)	-0.040* (0.025)	0.016 (-0.036)	-0.005 (0.016)	-0.005 (0.026)	-0.013 (0.024)	-0.021 (0.027)	
Treatment*Incumbent Measure2	0.032 (0.026)	0.025 (0.027)			0.014** (0.006)	0.025** (0.012)	0.056** (0.023)	0.092** (-0.042)	0.013** (0.006)				
Treatment*Opposite Incumbent Measure1 or Average Challenger Measure	0.000 (0.002)			-0.097** (0.043)					-0.006 (0.016)	-0.066* (0.037)	-0.069* (0.035)	0.006 (0.052)	
Treatment*Opposite Incumbent Measure2	-0.024 (0.027)								-0.002 (0.006)				
Observations	775	775	775	775	775	775	775	775	775	775	775	775	

<b>Randomization Inference: p-values for Probability(Actual Coefficient = Estimated Coefficient)</b>												
Treatment*Incumbent Measure 1	0.221	0.231	0.028	0.044	0.356	0.235	0.055	0.326	0.379	0.422	0.300	0.263
Treatment*Incumbent Measure 2	0.110	0.185			0.009	0.028	0.009	0.016	0.024			
Treatment*Opp Incumbent Measure1	0.476			0.017					0.365	0.039	0.029	0.412
Treatment*Opp Incumbent Measure2	0.197								0.369			

*Notes:*

1. We report OLS regressions containing jurisdiction fixed effects and robust standard errors. All columns use data from electoral rolls and report cards.
2. Performance measures: For Legislature Measures, the Incumbent Performance Measure1 is incumbent attendance in legislature in 2007 and Incumbent Performance Measure2 is the number of questions raised by the incumbent in the legislature. For Committee Attendance, the Incumbent Performance Measure1 is whether the incumbent attended the last ration committee meeting (.5), the last police committee meeting (.5), neither (0), or both (1). For MLALADS Spending, Incumbent Performance Measure1 is the total MLALADS spending from 2004 to 2007 while Incumbent Performance Measure2 is the total MLALADS spending in slums over the same period. The Opposite Legislator variables refer to outcomes for the incumbent featured in the second report card in the same newspaper.
3. Qualification measures: For Assets, the incumbent measure is whether the incumbent has less than one crore Rupees in assets and the average challenger measure is fraction of challengers with less than one crore in assets. For Education, the incumbent measure is whether the incumbent has a college degree and the average challenger measure is fraction of challengers with a college degree. For Criminal Charge, the incumbent measure is whether the incumbent has no criminal charges and for challengers it is the fraction of challengers with no criminal charges.
4. Randomization Inference coefficients and standard errors are based on 10,000 simulated treatment assignments. The p-values are the probabilities that the coefficients obtained from the interaction of actual treatment with the performance or qualifications variables came from the distribution of coefficients obtained from simulated treatment interactions.

**Appendix Table 1: Robustness to Other Controls**

Outcome:	log(Votes)		Incumbent Vote Share	
	(1)	(2)	(3)	(4)
Treatment	0.293 (0.314)	0.043 (0.323)	-0.034 (0.163)	-0.164 (0.173)
Treatment * Overall Incumbent Quality	-0.023*** (0.009)	-0.027*** (0.009)	0.019** (0.007)	0.015* (0.008)
Treatment * Prior Turnout	-0.421 (0.548)		0.058 (0.278)	
Treatment * Congress Incumbent	-0.023 (0.040)		-0.002 (0.030)	
Treatment * % Muslim		-0.048 (0.106)		0.127* (0.076)
Treatment * % Low Caste		0.138 (0.261)		0.117 (0.154)
Treatment * Mean Income		0.000 (0.000)		0.000 (0.000)
Treat * % Literate		-0.076 (0.278)		0.176 (0.179)
Log(Registered Voters)	0.886*** (0.028)	0.885*** (0.029)		
Observations	775	775	775	775

*Notes:*

1. We report OLS regressions containing jurisdiction fixed effects and robust standard errors. The turnout regressions also include log registered voters as a control. The outcome variables are as defined in Notes to Table 3. The performance and qualification data are from the report cards.

Figure 1: Pamphlet Distributed During Door to Door Campaign

## ख्या आपके क्षेत्र में-

- ❑ राशन ठीक से नहीं मिलता है?
  - ❑ पानी की समस्या है?
  - ❑ सड़क टूटी हुई है?
  - ❑ पुलिस नाजायज़ परेशान करते हैं?
  - ❑ स्ट्रीट लाईट नहीं हैं?
  - ❑ बारात घर नहीं हैं?

## अवश्य ध्यान ढें:

हमारी जरूरतें !

੮

Our Needs!  
Our Demands!  
Our Vote is Our Voice!

- मतदान के दिन अपना मत जल्द से जल्द देने का प्रयास करें, ताकि कोई अन्य व्यक्ति आपका मत आपसे पहले न डाल दे।
  - किसी अनजान व्यक्ति के साथ गाड़ी में मतदान केन्द्र तक हरगिज़ न जाएँ।
  - अपना मत मुद्दों के आधार पर दें, न कि जाति या धर्म के आधार पर।
  - जरूरत के लिए गाड़ी में बैठने का प्रलोभन

## हिक चर्चा के में आमन्त्रित

हमारा वोट हमारी आवाज़ है!



## વोट દેના - હમારા અધિકાર

८५  
कर्तव्य



डिं. एन. एन.

विद्युत धूप गाठ और चारकारी राजनीतिक संस्थाओं का संगठन है। नवाजल वाराणसीजा अधिकारी गार्हणिकों को २००८ विधान सभा चुनावों के बारे में चारकारी देखे का एक चलतं घटाया है। हमारा नाता किसी नेता वा राजनीतिक दल से नहीं है।

Design & Layout : Svarchhaya Communications Illustration: Rajeev Verma  
Printed By - Printin Tech P-9724, Naraina Indl Area Ph-1, New Delhi

## ठम्मीदवार की जिम्मेदारी

एम. एल. ए. की जिम्मेदारियाँ एवं कार्य -

- दिल्ली विधान सभा का सदस्य होने के नाते

- Your MLA is a member of the vidhan sabha.  
The vidhan sabha is responsible for making laws for Delhi
- Your MLA is responsible for raising the needs and demands of our citizens in the vidhan sabha.

के तरीके तय करने में मदद करना।

क्या सरकारी कामकाज पर नज़र रख लिए समितियाँ बनाई गई हैं?

एम. एल. ए:-

- राशन निगरानी समिति के अध्यक्ष हैं।
- थाना समिति के अध्यक्ष हैं।

## क्या आप जानते हैं?

- आपके क्षेत्र के विकास के लिये सालाना २ करोड़ रुपए एम.एल.ए फंड में होते हैं। इनमें

ट्रॉफी, ड्रॉपबॉल, स्कूल, सड़कें, कूड़ाघर माण कार्य शामिल हैं।

बोर्ड से ५० लाख रुपए का ड क्षेत्र में पानी, नाली और सीवर सम्बन्धी कार्यों पर खर्च करने के लिए होता है।

## उम्मीदवारी

### Did you know:

- Your MLA gets two crore every year to spend on his constituencies' local development. He can spend it on schools, drainage, water facilities, roads, community halls, sanitation, etc.

## जानपाठी

- क्या आप जानते हैं कि हर उम्मीदवार को चुनाव से पहले 'शपथ पत्र' में शिक्षा

## सम्पत्ति की



Is there anyone watching over the workings of the government? Your MLA:

- Is a member of the Ration Vigilance Committee.
- Is a member of the Police Oversight Committee.
- Is a member of the District Development Committee
- Is a member of the Complaint Redressal Committee.



- A copy of the Hindustan containing this information will be given to you between X and X. It is your responsibility to read this information carefully and learn about your candidates' background.

## मतदान से पहले ध्यान दें-

- क्या आपका नाम वोटर सूची में है? अगर है, तो आप वोट दे सकते हैं।
- पता करें कि आपका नज़दीकी मतदान कक्ष व केन्द्र कहाँ हैं— उसी केन्द्र में अपना वोट डालें।
- वोटर पहचान पत्र अपने साथ ले जाना न भूलें।
- वोटर पहचान पत्र न होने पर भी आप मतदान कर सकते हैं। उसके लिए आपका नाम वोटर

न कार्ड या  
न फोटो हो,  
वाहिए।



# Delhi (Vidhan Sabha) Assembly “Netaji’s” Report card - Affidavit

**हिन्दुस्तान**  
Sarkar Nagrik Sangathan Movement  
 Sampark Nagrik Sanghan

Hindustan Monday, 24 November 2008 8

Southern District

No. of legislative constituencies

11

Total allotted money (lakh)

5647.0

Average Allotment per Area

513.4

Every MLA is given approximately Rs. 2 crore per year for the development of their constituency. This data is of the expenditure from the local area development fund in year 2004-07.

**Okhla (6)**

**Parwej Hashami (Present MLA)**

Attendance (2007) Starred Questions Unstarred Questions

2/18	2	3
------	---	---

Allotment of Local Area Development Scheme funds 2004-07

Category	Money (lakh)	Percentage
Road/Footpath	178.2	58.4
Drainage	71.4	23.4
Light	6.9	2.3
Park	30.1	4.0
Water	0.0	9.9
Sewage	30.1	0.0
Others	6.3	2.1
<b>Total</b>	<b>305.0</b>	<b>100</b>

**Delhi Water Board (2005-06)** 50.0

**Delhi Water Board (2006-07)** 50.0

Delhi Water board gives Rs. 50 lakh to each MLA per year,

**On Govt. Committees**

Name of the committee	Post held by the MLA	Duration	Last Meeting	Attendance
Ration vigilance	Chairman	Quarterly	01.04.08	Yes
District development	Member	—	15.02.08	No
Grievance redressal	No committee constituted in Southern district			
Police Thana committee	Chairman	—	02.08.08	No

Hashami was present in only two meetings of legislative assembly in 2007. He raised five questions to the government during this time. One of his questions was related to vocational training for the students of government schools. In addition to this question, he also asked for the syllabus of these trainings and the names of the schools which have vocational training programs. He also asked for total number of government schools in Okhla and raised the issue of vacant seats of teachers and the number of the staff in these schools. During 2004-07 he spent Rs. 3 crore on development from his local area development fund which was 50 percent of the total available money. He spent Rs. 30 lakh in his area to strengthen the water supply system but gave nothing for the improvement of the sewage structure in his area. Mr. Hashmi is a member of the District Development Committee of the southern district but he didn't participate in either of the two meetings of the committee held in 2008.

**Tuglakabad (35)**

**Ramesh Bidhuri (Present MLA)**

Attendance (2007) Starred Questions Unstarred Questions

2/18	2	3
------	---	---

Allotment of Local Area Development Scheme funds 2004-07

Category	Money (lakh)	Percentage
Road/Footpath	346.5	72.6
Drainage	49.0	10.3
Light	17.4	3.6
Park	13.6	2.8
Water	33.0	6.9
Sewage	10.9	2.3
Others	7.0	1.5
<b>Total</b>	<b>477.4</b>	<b>100</b>

**Delhi Water Board (2005-06)** 50.0

**Delhi Water Board (2006-07)** 50.0

Delhi Water board gives Rs. 50 lakh to each MLA per year,

**On Govt. Committees**

Name of the committee	Post held by the MLA	Duration	Last Meeting	Attendance
Ration vigilance	Chairman	Quarterly	Committee dissolved in 2006	
District development	Member	—	15.02.08	No
Grievance redressal	No committee constituted in Southern district			
Police Thana committee	Chairman	—	29.08.08	Yes

Affidavits from the main candidates of Okhla (New Legislative Constituency no.- 54 )



- **Property** – Parwej Hashami has declared assets of Rs 3.38 crore belonging to him and his wife.
- **Education** – Hashami has a Masters in chemistry. He received his Masters of Arts from Aligarh Muslim University, U.P. in 1977.
- **Criminal Record** - According to the affidavit given to the commission, there are eight criminal cases registered against him.



- **Property** – Surendra Kumar has declared assets of Rs 18.9 lakh belonging to him and his wife. This includes his four vehicles worth 16.3 lakh rupees.
- **Education** – Surendra Kumar has a Bachelors Degree. He received his Bachelors in Commerce from Delhi University in 1987.
- **Criminal Record** - According to the affidavit given to the commission, there are no criminal cases registered against him.



- **Property** – Bramha Singh has declared movable property of worth 11.7 lakh rupees belonging to him and his wife. He also has agriculture land and a house worth approximately Rs. 10 crore rupees.
- **Education** – Bramha Singh has not given any information regarding his education.
- **Criminal Records** - According to the affidavit given to the commission, there are no criminal cases registered against him.



- **Property** – Sheesh Pal has declared movable property of worth Rs. 71 lakh belonging to him and his wife. He also has agriculture land and property worth Rs. 12.65 crore.
- **Education** – Sheesh Pal has completed tenth standard. He studied at Madanpur Khadar Government School, Delhi.
- **Criminal Records** - There are no criminal cases registered against him.

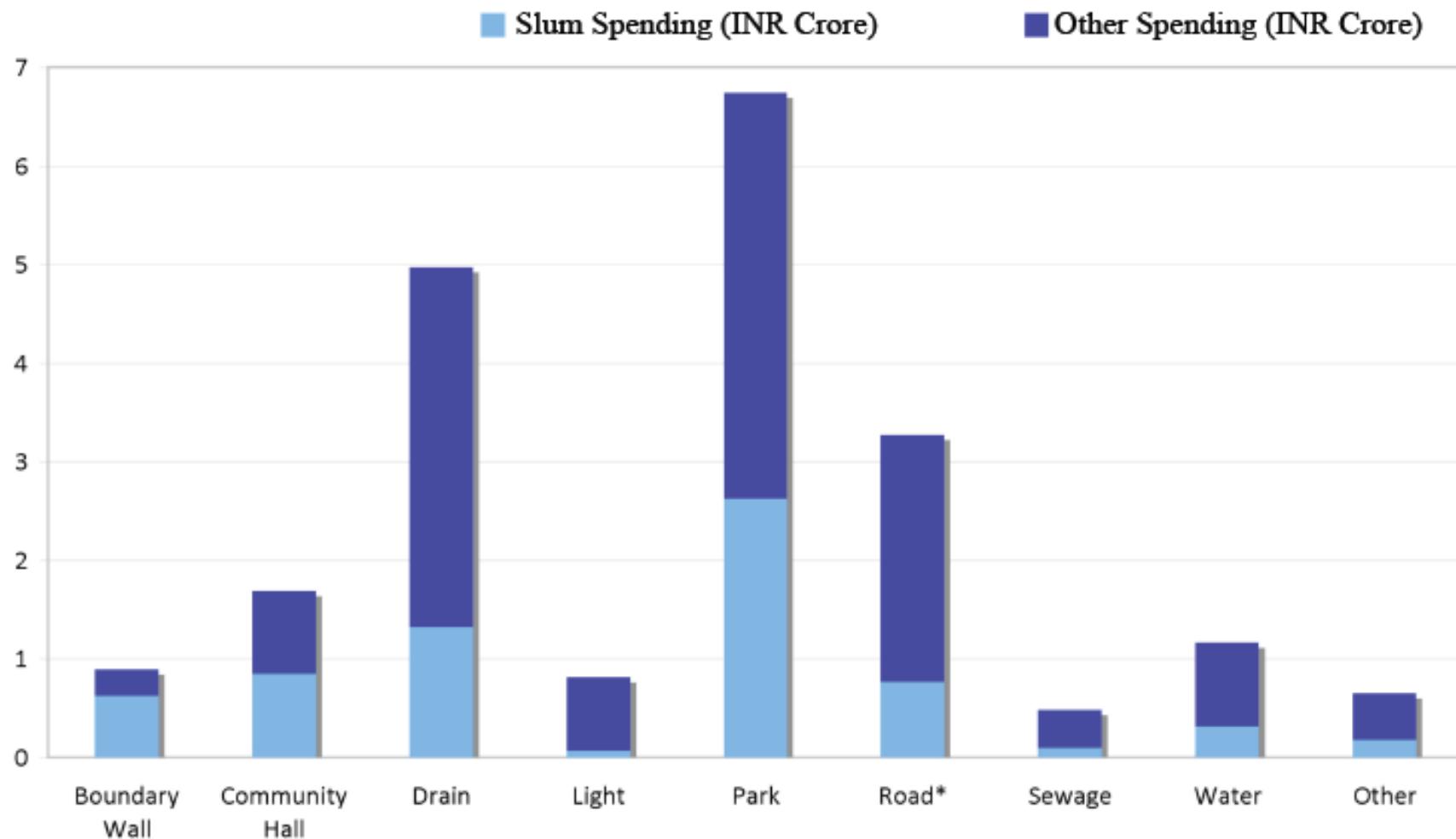


- **Property** – Ramesh Bidhuri has declared movable property worth Rs. 37 lakh belonging to him and his wife. He also possesses commercial and housing buildings worth Rs. 1 crore.
- **Education** – Ramesh Bidhuri holds a Bachelors Degree. He received his Bachelors in Commerce from Delhi University's Shaheed Bhagat Singh College in 1986.
- **Criminal Records** - There is a case pending against him for distribution of objectionable material.



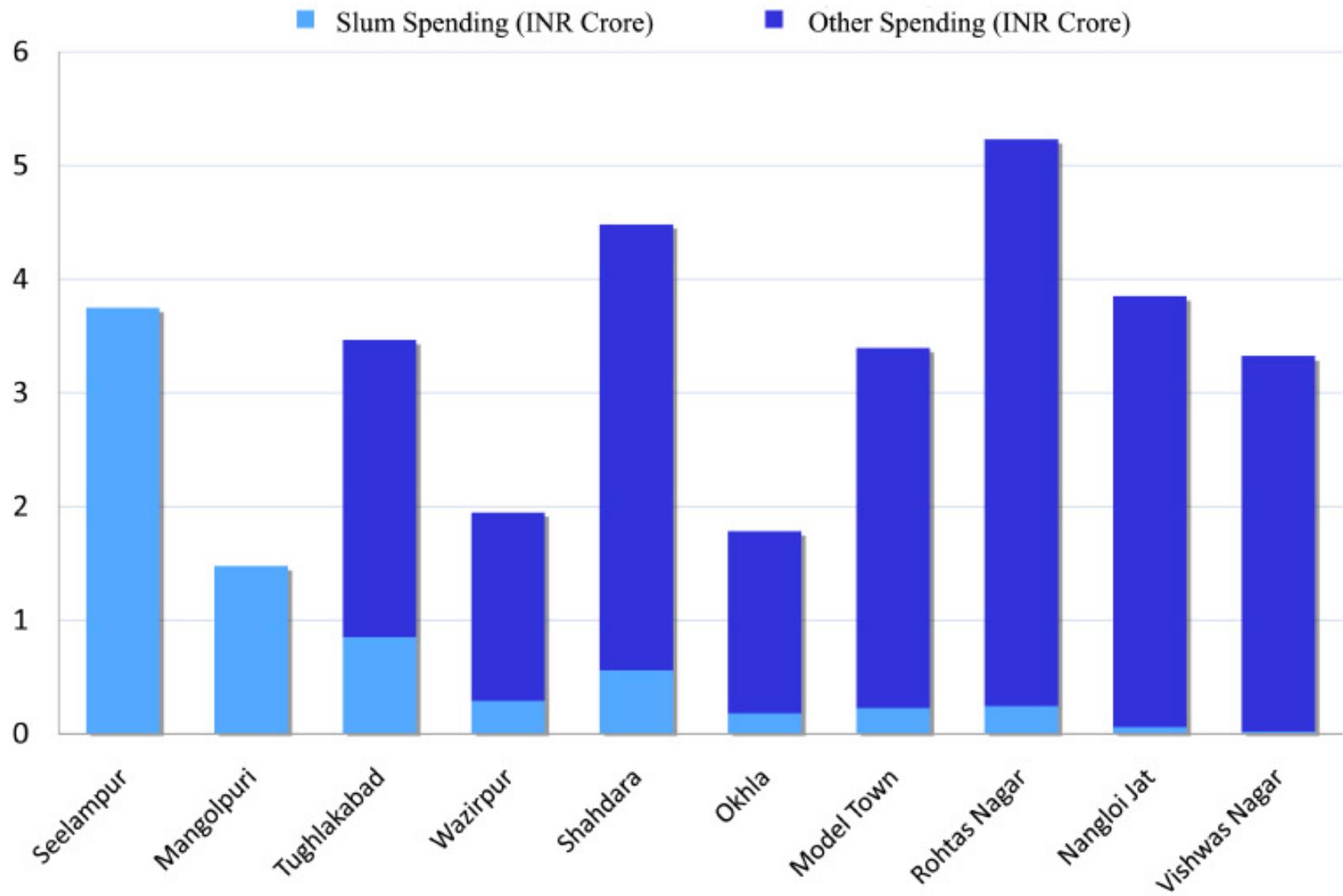
- **Property** – Sahi Ram has declared movable property worth Rs. 21.4 lakh belonging to him and his wife. He also possesses land and residential property worth Rs. 61.8 lakh.
- **Education** – Sahi Ram passed the Delhi Senior Secondary Examination in 1979.
- **Criminal Records** - There are cases pending against him of creating a nuisance with a dangerous weapon and forcibly obstructing a government employee in his duties.

Figure 2: Report Cards in The Hindustan Times on November 24, 2008



**Figure 3A: MLALADS Spending on Slum-Area Projects across 10 Sample Jurisdictions**

\*Road figures divided by 10 for scale



**Figure 3B: MLALADS Spending on Road Projects in Slum Areas by Jurisdiction**

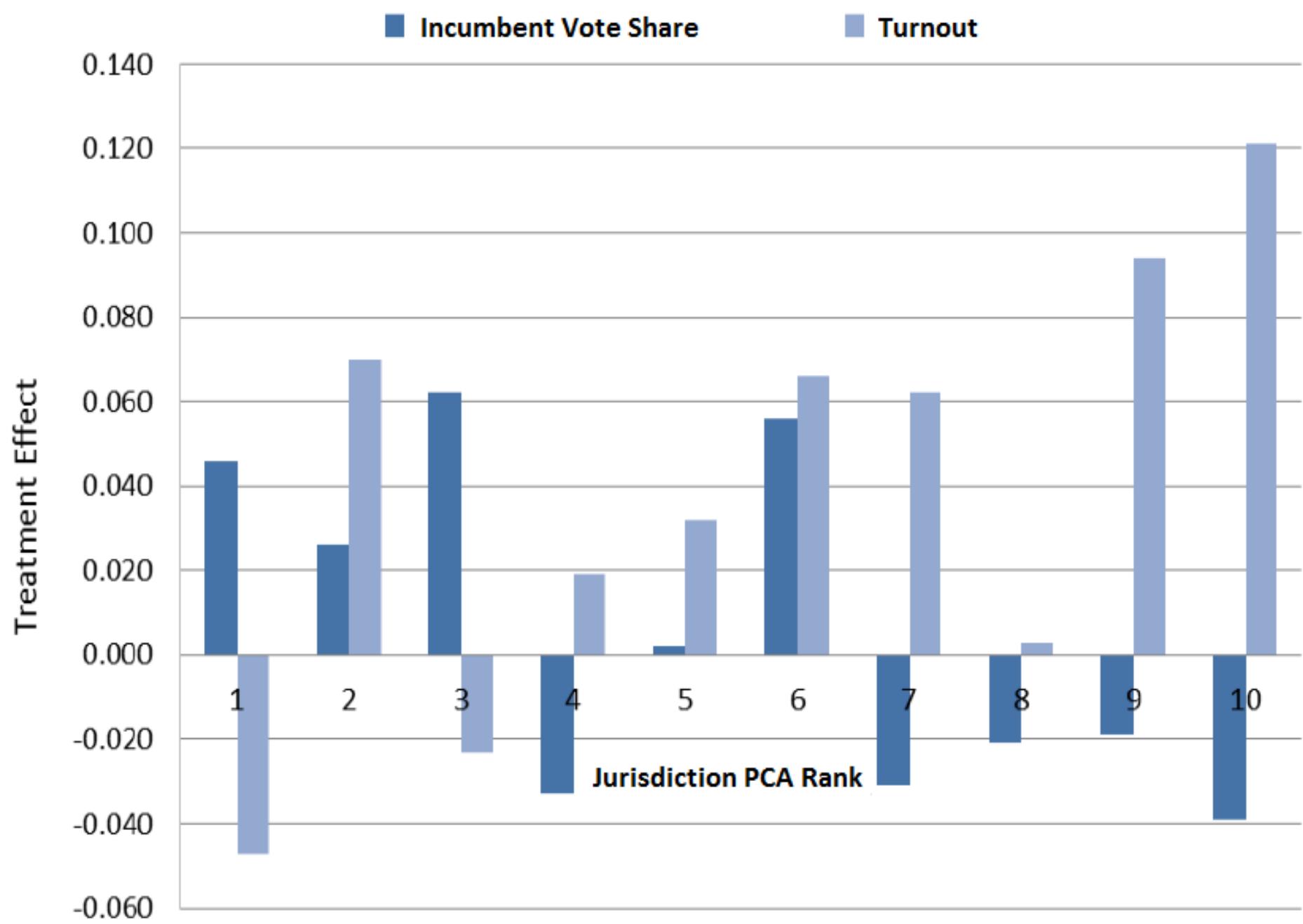
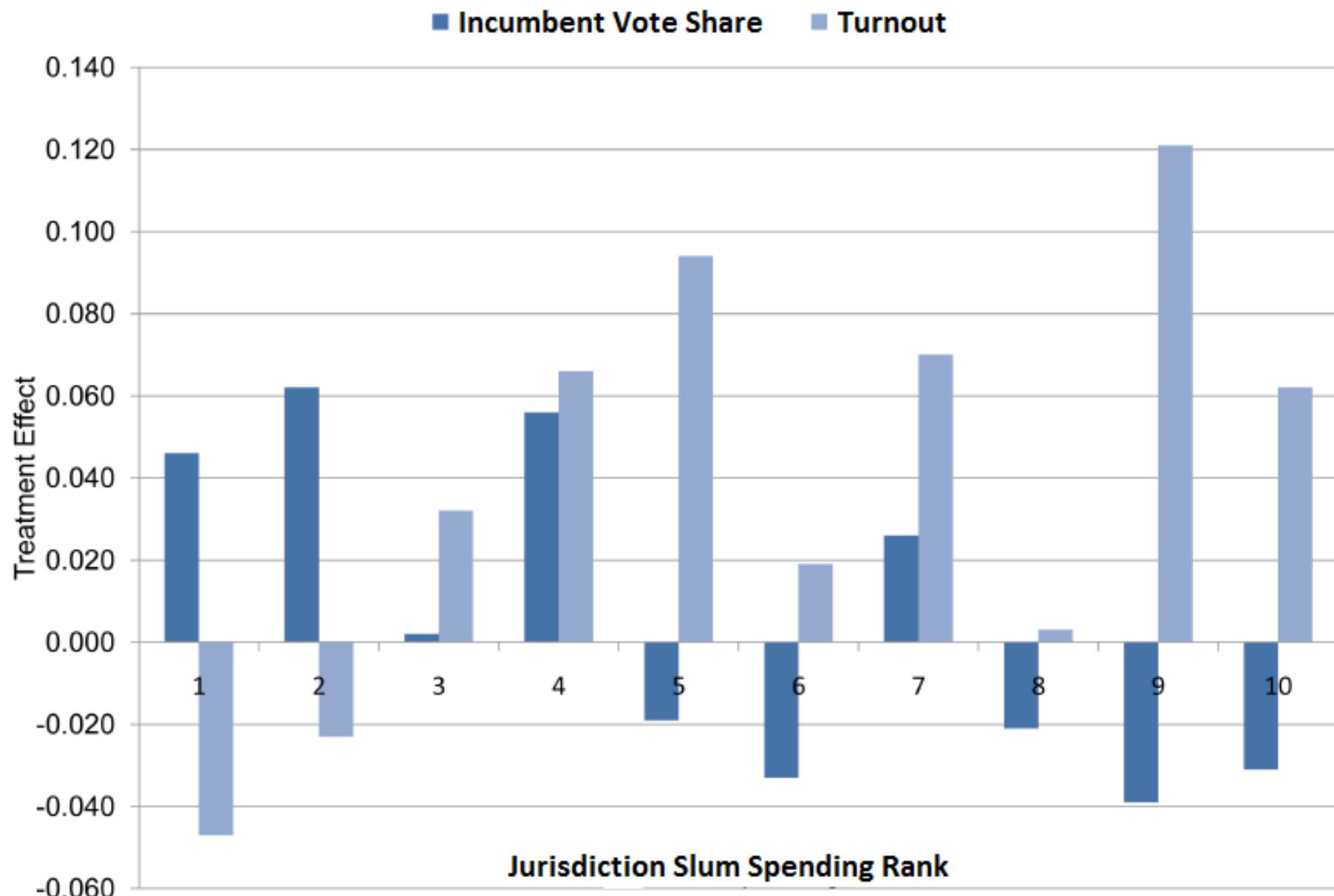


Figure 4A: Treatment Effects by Jurisdiction Overall Performance PCA Rank



**Figure 4B: Treatment Effects by Individual Jurisdiction Slum Spending Rank**