Squeaky Wheels and Inequality in Bureaucratic Service Provision
For Online Publication

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September 12, 2022

Contents

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A1 Theoretical Model: Extensions and Proofs

A1.1 Proofs

Proof of Proposition 1: $\mathbb{E}[e_g^*]$ is the expectation of bureaucratic effort for citizens of group g. Recall that c_C is a realization of the random variable C_g with cdf $F_g(\cdot)$. As such, the proportion of citizens that would complain if service is not granted is given by $F_g(\frac{b}{c_P})$. Assume that effort is interior for all citizens, $e_g^* < 1$. Given (7):

$$\mathbb{E}[e_g^*] = \frac{\mathbb{E}[\gamma_B^g]}{c_B} + \frac{1}{c_B c_P}\left[S + \mathbb{E}[\gamma_P^g] + F_g\left(\frac{b}{c_P}\right)\right] \tag{1}$$

where $\mathbb{E}[\gamma_B^g]$ and $\mathbb{E}[\gamma_P^g]$ are the expectations of the bureaucrat's and politician's tastes for group g, respectively. The expectation of bias between groups x and y in the aggregate is defined as $\Delta = \mathbb{E}[e_x^*] - \mathbb{E}[e_y^*]$ and is calculated:

$$\Delta = \frac{\mathbb{E}[\gamma_B^x] - \mathbb{E}[\gamma_B^y]}{c_B} + \frac{1}{c_B c_P}\left[\mathbb{E}[\gamma_P^x] - \mathbb{E}[\gamma_P^y] + F_x\left(\frac{b}{c_P}\right) - F_y\left(\frac{b}{c_P}\right)\right] \qquad \blacksquare \tag{2}$$

Proof of Proposition 2: Comparative statics.

1. Differentiating Δ_O and Δ_B with respect to c_P yields:

$$\frac{\partial \Delta_B}{\partial c_P} = 0 \tag{3}$$

$$\frac{\partial \Delta_O}{\partial c_P} = \frac{b(f_y(\frac{b}{c_P}) - f_x(\frac{b}{c_P})) - c_P(\eta_P + \eta_Q)}{c_B c_P^3} \tag{4}$$

   $\frac{\partial \Delta_O}{\partial c_P}$ can take any sign. However, Δ_B does not vary in c_P while Δ_O may. Thus, $\frac{\partial \Delta}{\partial c_P} \neq 0$ implies that $\Delta_O \neq 0$. Additionally, note that $F_x(\frac{b}{c_B}) - F_y(\frac{b}{c_B}) \in [0, 1]$, by the stochastic dominance assumption. This implies that $\eta_Q \in [0, 1]$. As such, for a sufficient increase in c_P, Δ_O attenuates toward zero.

2. Differentiating Δ with respect to η_Q yields $\frac{\partial \Delta}{\partial \eta_Q} = \frac{1}{c_B c_P} > 0$.

3. Differentiating Δ with respect to η_P yields $\frac{\partial \Delta}{\partial \eta_P} = \frac{1}{c_B c_P} > 0$.$\blacksquare$

A1.2 Extension: Endogenous Requests for Service

In the text, citizen requests for service are treated as exogenous. In this extension, I consider equilibrium levels of effort when citizens pay a cost to request a service. This adds a first step to the sequence presented in the main text, in which citizens request the service or not, denoted $R \in \{0, 1\}$. Preceding the bureaucrat's decision to exert effort, this extension includes:

1. Citizen chooses whether or not to request service.

Suppose that the cost of requesting the service, $\xi > 0$ is equivalent for all citizens (though costs of complaint continue to vary). By construction, $\xi \perp C_g$.[1] Denote the ex-ante expected utility for citizens that would

[1] It may be more natural to assume that costs of requesting a service correlate positively with the costs of complaint, given the motivation of the costs of complaint in the paper. The current setting allows for straightforward exposition and will understate the magnitude of effects noted in Proposition A1 relative to the case of positively correlated costs of requesting the service and of complaint.

complain ($i \in \mathcal{C}$) and citizens that would not complain and ($i \in \mathcal{N}$):

$$\mathbb{E}[U_C^{\mathcal{C}}] = eb + (1-e)\left(b\frac{S+\gamma_P^g+1}{c_P} - c_C\right) - \xi$$
$$\mathbb{E}[U_C^{\mathcal{N}}] = eb + (1-e)\left(b\frac{S+\gamma_P^g}{c_P}\right) - \xi.$$

where e is the bureaucrat's equilibrium effort. Note that a citizen for whom $c_C = \frac{b}{c_P}$ is indifferent between complaining and not complaining. Further, $\frac{\partial \mathbb{E}[U_C^{\mathcal{C}}]}{\partial c_C} < 0$ and $\frac{\partial \mathbb{E}[U_C^{\mathcal{N}}]}{\partial c_C} = 0$. First, the maximum cost, $\underline{\xi}$ at which citizen for whom $c_C = \frac{b}{c_P}$ will request the service is:

$$\underline{\xi} = b\left(\frac{\gamma_B^g}{c_B} + \frac{S+\gamma_P^g+1}{c_B c_P}\right) + \left(1 - \frac{\gamma_B^g}{c_B} - \frac{S+\gamma_P^g+1}{c_B c_P}\right)\frac{b(S+\gamma_P^g)}{c_P} \tag{5}$$

The maximum cost, $\overline{\xi}$ at which a citizen for whom $c_C = 0$ would request the service is:

$$\overline{\xi} = b\left(\frac{\gamma_B^g}{c_B} + \frac{S+\gamma_P^g+1}{c_B c_P}\right) + \left(1 - \frac{\gamma_B^g}{c_B} - \frac{S+\gamma_P^g+1}{c_B c_P}\right)\frac{b(S+\gamma_P^g+1)}{c_P} \tag{6}$$

For any cost $\xi < \underline{\xi}$, all citizens will request the service and bureaucratic effort levels are equivalent the case in the main text. For any cost $\xi \in [\underline{\xi}, \overline{\xi}]$, a citizen of with costs c_C requests the service if:

$$\xi \leq \frac{b(c_P\gamma_B^g + S + \gamma_P^g + 1)}{c_B c_P} + \frac{c_B c_P - c_P\gamma_B^g - S - \gamma_P^g - 1}{c_B c_P}\left(\frac{b(S+\gamma_P^g+1)}{c_P} - \tilde{c}_C\right)$$
$$\Rightarrow \tilde{c}_C \leq \frac{b(S+\gamma_P^g+1)}{c_P} - \frac{\xi c_B c_P - b(c_P\gamma_B^g + S + \gamma_P^g + 1)}{c_B c_P - c_P\gamma_B^g - S - \gamma_P^g - 1}$$

For any cost $\xi > \overline{\xi}$, no citizen requests the service. This case is uninteresting. Proposition A1 compares the case consistent with the main text $\xi < \underline{\xi}$ to the intermediate case in which $\xi \in [\underline{\xi}, \overline{\xi}]$.

Proposition A1. *Equilibrium effort with costly requests. Suppose that within a group g, the bureaucrat's tastes, politician's tastes, and citizen costs are independent. The proportion of citizens requesting service is weakly lower if $\xi \in [\underline{\xi}, \overline{\xi}]$ than if $\xi < \underline{\xi}$. However, the expectation of equilibrium effort exerted by the bureaucrat is weakly greater if $\xi \in [\underline{\xi}, \overline{\xi}]$ than when $\xi < \underline{\xi}$.*

Proof:
By assumption $\gamma_B^g \perp \gamma_P^g, \gamma_B^g \perp C_g$, and $\gamma_P^g \perp C_g$ for all g and consider two cases.

Case 1: $\xi < \underline{\xi}$: For any $\xi < \underline{\xi}$, conditional on requesting service ($R = 1$), the expectation of equilibrium effort for group g is:

$$\mathbb{E}[e_g^* | R = 1] = \frac{\mathbb{E}[\gamma_B^g]}{c_B} + \frac{(S + F_g(\frac{b}{c_P}) + \mathbb{E}[\gamma_P^g])}{c_B c_P}$$

and all citizens request the service.

Case 2: $\xi \in [\underline{\xi}, \overline{\xi}]$: For any $\xi \in [\underline{\xi}, \overline{\xi}]$, conditional on requesting service ($R = 1$), the expectation of equilibrium effort for group g is:

$$\mathbb{E}[e_g^*|R=1] = \frac{\mathbb{E}[\gamma_B^g]}{c_B} + \frac{(S+1+\mathbb{E}[\gamma_P^g])}{c_B c_P}$$

and the proportion of citizens requesting service is given by $F(\tilde{c}_C)$.

$F_g(\tilde{c}_C) \leq 1$ implies that weakly fewer citizens request the service when $\xi \in [\underline{\xi}, \overline{\xi}]$. Further since $F_g(\frac{b}{c_P}) \leq 1$, $\mathbb{E}[e_g^*]$ is weakly greater when $\xi \in [\underline{\xi}, \overline{\xi}]$. ■

A1.3 Extension: Bias in Effort and Inequality in Outputs

Defining Inequality in Outputs: The model implies *inequality in outputs* as a second quantity measuring bias beyond *bias in effort*. Bias in effort is given by Proposition 1.

Inequality in outputs considers differences in expectation of the ultimate levels of service provision by group. Service provision, $\mathcal{S}$ is given by:

$$\mathcal{S}(e,q) = \begin{cases} e + (1-e)\frac{S+\gamma_P+1}{c_P} & \text{if } q = 1 \\ e + (1-e)\frac{S+\gamma_P}{c_P} & \text{if } q = 0 \end{cases}$$

I measure inequality in outputs as the difference in the expectation of service provision for each group. Define the expectation of service provision for a member of group g as:

$$\begin{aligned}\mathbb{E}[\mathcal{S}_g] =& F_g\left(\frac{b}{c_P}\right)\mathcal{S}_g(e_g^*, 1) + \left(1 - F_g\left(\frac{b}{c_P}\right)\right)\mathcal{S}_g(e_g^*, 0) \\ =& \frac{S + \mathbb{E}[\gamma_P^g]}{c_P} + \frac{e_g^*(c_P - S - \mathbb{E}[\gamma_P^g])}{c_P} + F_g\left(\frac{b}{c_P}\right)\frac{1-e_g^*}{c_P}.\end{aligned}$$

Inequality in outputs for an individual from each group x and y is therefore defined as:

$$\begin{aligned}\mathbb{E}[\mathcal{S}_x] - \mathbb{E}[\mathcal{S}_y] =& \frac{S + \mathbb{E}[\gamma_P^x]}{c_P} + \frac{e_x^*(c_P - S - \mathbb{E}[\gamma_P^x])}{c_P} + F_x\left(\frac{b}{c_P}\right)\frac{1-e_x^*}{c_P} - \\ & \left(\frac{S + \mathbb{E}[\gamma_P^y]}{c_P} + \frac{e_y^*(c_P - S - [\gamma_P^y])}{c_P} + F_y\left(\frac{b}{c_P}\right)\frac{1-e_y^*}{c_P}\right).\end{aligned}$$

The mapping from bias in effort to inequality in outputs depends on the composition of the bias in effort (between tastes and complaint-driven bias). For this analysis, make one simplifying assumption. Within each group, g, the distributions of tastes and costs of complaint is independent, i.e. $\gamma_B^g \perp \gamma_P^g, \gamma_B^g \perp C_g$ and $\gamma_P^g \perp C_g \forall g$.

Inequality in outputs: Inequality in outputs simplifies to:

$$\mathbb{E}[\mathcal{S}_x] - \mathbb{E}[\mathcal{S}_y] = \underbrace{\frac{\eta_B}{c_B} + \frac{\eta_P + \eta_Q}{c_P c_B}}_{\Delta\text{: Bias in effort}} + \frac{-(\eta_Q + \eta_P)(F_x(\frac{b}{c_P}) + F_y(\frac{b}{c_P}) + 2S + \mathbb{E}[\gamma_P^x] + \mathbb{E}[\gamma_P^y])}{c_B c_P^2} + \frac{c_B(\eta_P + \eta_Q) - S\eta_B - \mathbb{E}[\gamma_B^x](F_x(\frac{b}{c_P}) + \mathbb{E}[\gamma_P^x])) + \mathbb{E}[\gamma_B^y](F_y(\frac{b}{c_P}) - \mathbb{E}[\gamma_P^y])}{c_B c_P}$$

This expression cannot be signed relative to Δ in the absence of additional assumptions.

A1.4 Implications for Complaint Rates in the Observational Data

Here I derive the expected rate of complaint per the baseline model in which the request for service is exogenous. Assume that $\gamma_B^g \perp C_g$ and $\gamma_P^g \perp C_g \forall g$. The rate of complaint by group is thus given by:

$$\underbrace{F_g\left(\frac{b}{c_P}\right)}_{\text{Share of complainants}} \left[1 - \underbrace{\left(\frac{\mathbb{E}[\gamma_B^g]}{c_B} + \frac{\mathbb{E}[\gamma_P^g] + S + 1}{c_B c_P}\right)}_{\text{Share receiving service}}\right]$$

The difference in rate of complaint, between groups x and y is thus:

$$\underbrace{\left[F_x\left(\frac{b}{c_P}\right) - F_y\left(\frac{b}{c_P}\right)\right]\left(\frac{c_B c_P - S - 1}{c_b c_P}\right)}_{\geq 0} - F_x\left(\frac{b}{c_P}\right)\left(\frac{\mathbb{E}[\gamma_B^x]}{c_B} + \frac{E[\gamma_B^x]}{c_B c_P}\right) + F_y\left(\frac{b}{c_P}\right)\left(\frac{\mathbb{E}[\gamma_B^y]}{c_B} + \frac{E[\gamma_B^y]}{c_B c_P}\right)$$

In equilibrium, we should see more complaints from the group with a higher likelihood of complaint if:

$$\left[1 - \frac{F_y(\frac{b}{c_P})}{F_x(\frac{b}{c_P})}\right]\left(\frac{c_B c_P - S - 1}{c_B c_P}\right) + \frac{F_y(\frac{b}{c_P})}{F_x(\frac{b}{c_P})}\left(\frac{\mathbb{E}[\gamma_B^y]}{c_B} + \frac{E[\gamma_B^y]}{c_B c_P}\right) > \frac{\mathbb{E}[\gamma_B^x]}{c_B} + \frac{E[\gamma_B^x]}{c_B c_P}$$

The implication of this expression is that if the rate of observed complaint is higher for group x (with lower costs of complaint), it must be the case that the tastes of the bureaucrat and politician must not favor group x by too large of a magnitude. If this were the case, the difference in the rate at which citizens of group x receive service over those from group y would yield a higher rate of complaint from group y given the lower rate of service provision.

A1.5 Policy Implications

Corollary 1. *Sufficient conditions for eliminating each form of bias in effort:*

(a) Politician's taste-driven bias is eliminated when $\eta_P = 0$, $c_P \to \infty$, or $c_B \to \infty$.

(b) Bureaucrats's taste-driven bias is eliminated when $\eta_B = 0$ or $c_B \to \infty$.

(c) Complaint-driven bias is eliminated when $\eta_Q = 0$, $c_P \to \infty$, or $c_B \to \infty$.

Corollary 1 follows directly from Proposition 1. However, note that for some policy interventions there is a tradeoff between overall levels of service provision and reductions in biases. For example, note that as $c_B \to \infty$, $e^* \to 0$, which implies that $E[a] = 0$ and the service is never delivered. These scenarios present a well-known efficiency-equity trade-off. I refine the set of policy implications in Table A1 to policies that *could* increase efficacy and equity.

Mechanism	Remedy
Politician's tastes	Select (elect) neutral politicians
Bureaucrat's tastes	Select neutral bureaucrats or invest in training to promote neutral service provision.
Complaint-driven bias	Reduce the cost to complaint to allow more citizens to seek remedies to poor service.

Table A1: Policy remedies for three mechanisms driving bureaucratic bias.

First, suppose that bias comes from the politician's tastes. Recall that $\eta_P \equiv \mathbb{E}[\gamma_P^x] - E[\gamma_P^y]$. Denote $\widetilde{\gamma}_P = \max\{\mathbb{E}[\gamma_P^x], \mathbb{E}[\gamma_P^y]\}$. Selecting a neutral politician implies selecting a politician for whom $\eta_P = 0$. One sufficient condition for reducing the politician's taste-driven bias while increasing efficiency is to select a politician for whom $\mathbb{E}[\gamma_P^x] = \mathbb{E}[\gamma_P^y] \geq \widetilde{\gamma}_P$.

Second, suppose that bias comes from the bureaucrat's tastes and consider a similar argument. Recall that $\eta_B \equiv \mathbb{E}[\gamma_B^x] - E[\gamma_B^y]$. Denote $\widetilde{\gamma}_B = \max\{\mathbb{E}[\gamma_B^x], \mathbb{E}[\gamma_B^y]\}$. Selecting a neutral bureaucrat (or training the bureaucrat to behave neutrally) implies selecting a bureaucrat for whom $\eta_B = 0$. One sufficient condition for reducing the bureaucrat's taste-driven bias while increasing efficiency is to select a politician for whom $\mathbb{E}[\gamma_B^x] = \mathbb{E}[\gamma_B^y] \geq \widetilde{\gamma}_B$.

Finally, suppose that bias is complaint-driven. Recall that $\eta_Q \equiv F_x(\frac{b}{c_P}) - F_y(\frac{b}{c_P})$. If costs of complaint were reduced such that $F_g(\frac{b}{c_P}) = 1 \forall g$, all citizens would be willing to complain eliminating complaint-driven bias while improving service provision. For smaller shifts in the cost of complaints that are symmetric across groups, i.e., $c_C^{\text{new}} = c_C - \epsilon$, where $\epsilon > 0$ for citizens from both groups, complaint-driven bias could increase or decrease, depending on the shape of the cdfs, $F_g(\cdot)$. In this case, however, service provision would improve (on average) for both groups. For sufficient ϵ, both efficiency and equity can be improved by reducing the cost of complaint. This can be seen because there exists some $\bar{\epsilon}$ that satisfies $F_y(\frac{b}{c_P} + \bar{\epsilon}) = 1$, which, by the assumption that F_y stochastically dominates F_x, implies that $F_x(\frac{b}{c_P} + \bar{\epsilon}) = 1$.

A2 Cross-National Contextualization of the Colombian Bureaucracy

The World Bank Worldwide Governance Indicators (WGI) allows for cross-national characterizations of governance, broadly conceived. Some of these measures measure bureaucratic outputs. The intent in providing this information is simply to demonstrate where Colombia ranks globally in standard measures of governance. Using data from 2016 (the most recent WGI data) evaluate Colombia's rank, as a percentile, among:

- All countries in the World Bank WGI data ($n = 214$).
- All Spanish, French, and Portuguese-speaking countries in Latin America ($n = 19$).
- All OECD countries ($n = 37$). Note that Colombia joined the OECD in July 2018.

Table A2 shows Colombia's rank among the three comparison groups for each of three indicators. While Colombia unsurprisingly performs quite poorly relative to all reference groups on the "Political Stability and Absence of Violence/Terrorism" measure, the other indicators which are plausibly more relevant measures of bureaucratic outputs. In general, Colombia generally performs somewhere around the median of all countries, in the top tercile of Latin American countries, and the bottom decile of OECD countries.

	Colombia's percentile among ...		
Indicator	World ($n = 214$)	Latin America ($n = 19$)	OECD ($n = 37$)
Political Stability and Absence of Violence/Terrorism	13.81	5.56	2.78
Rule of Law	41.35	72.22	5.56
Control of Corruption	44.23	72.22	5.56
Voice and Accountability	49.75	55.56	5.56
Government Effectiveness	54.33	66.67	2.78
Regulatory Quality	67.31	77.78	11.11

Table A2: Colombia's rankings on each World Bank World Governance Indicator (2016) as a percentile within the relevant comparison group.

A3 Original Survey of Bureaucrats

The manuscript cites one descriptive finding from an original survey of street-level bureaucrats in *alcaldías* in Bogotá and Cundinamarca. The details of the survey are as reported here. The survey was conducted in October and November, 2016. Two parallel surveys were conducted: one of citizens awaiting service and one of bureaucrats providing service in select entities. The surveys were conducted in:

- *Alcaldías*: local *alcaldías* in Bogotá and municipal *alcaldías* in Cundinamarca
- CADES/SUPERCADES: These are District (Bogotá) Centers for Public Service where citizens can seek many public services.
- Local offices of the Registraduría Nacional del Estado Civil
- Local notaries (public/private).

The relevant sample cited in the paper includes 73 surveys of bureaucrats from 14 *alcaldías*. The *alcaldías* were purposefully sampled but the timing of the visit was randomly assigned. The sampling included the first 5-8 bureaucrats that we encountered starting at reception (e.g. street level bureaucrats) that were willing to take the survey. In this sense, the sample is not random, but encompasses street-level bureaucrats in these entities present at the time of the survey.

The relevant question cited in the descriptive statistic in the paper was an open response question, enumerated and translated as follows:

- "¿Si usted tomará una decisión que su supervisor no apoyará, cuál sería la consecuencia?"
- Translation: "If you made a decision that your supervisor did not support, what would be the consequence?"

The responses ranged from verbal admonishment to more formal admonishments (in the form of a memorandum) to unwillingness to renew a contract (contractors only).

A4 Bogotá Complaint Data

Data on formal complaints from Bogotá is collected by the Veeduría Distrital, an oversight organ of the city government. Data is available at `tablerocontrolciudadano.veeduriadistrital.gov.co:3838/BogotaDashboard/`. The data consist of 464,387 PQRS petitions submitted to city entities in Bogotá between January 1, 2017 and June 30, 2018. PQRS stands for "*peticiones, quejas, reclamos, y sugerencias*," translated "requests, complaints, claims, and suggestions." These comprise represent formal written requests, not verbal or informal complaints. Note that the per capita rate of PQRS submission during this period is 5.68%, or one submission per ≈17.5 people.[2]

The PQRS are characterized by type, as in Table A3. Note that there are more words for complaints in Spanish than in English. I focus on the first three categories (the complaints) in the subsequent analysis $n = 440,803$.

PQRS Type	Translation	n	Proportion
Denuncia	Report (of complaint)	2,501	0.005
Queja	Complaint	99,302	0.214
Reclamo	Complaint	339,000	0.730
Sugerencia o Felictación	Suggestion or congratulation	23,584	0.051

Table A3: PQRS submitted in Bogotá, January 2017-June 2018. The type designation is made by the Veeduria (or receiving entities). Translations by author.

Of the complaints, 63,330 were registered by *alcaldías locales*, the entities audited in the experiment. Other complaints were directed to district-wide entities. To assess the correlation between class and propensity to complain, I examine the relationship between the relative wealth of a locality and the per-capita rate of complaint submission. To measure the wealth of a locality, I examine the average *estrato* (strata) of all residential properties. Strata range from 1 (very low/*bajo bajo*) to 6 (very high/*alta alta*). While these zoning designations are technically made to properties, citizens identify *estrato* with class. Equating the two implies an assumption that lower-class Bogotanos are priced out of rich neighborhoods/dwellings and few middle- and upper-class Bogotanos choose to live substantially below their means. The marked degree of differentiation of localities in average *estrato* implies high levels of residential segregation.

Figure 2 plots the rate of complaint submission by wealth of localities. There is a clear positive relationship between the wealth of the locality and the rate of complaint submission. This occurs despite the fact that service is believed to be better in wealthy localities, suggesting that this analysis *understates* the relationship between class and propensity to complain. The outlier, La Candelaria, is a very small locality in the center of Bogotá with a vastly disproportionate tourist/foreigner ("ex-pat") population. To the extent that "ex-pats" (generally from rich countries) choose to live in a locality with a relatively low *estrato*, resident wealth is understated by the *estrato* designation in La Candelaria.

[2]Calculated based on an estimated population of 8,181,047 residents.

A5 Proxying Costs of Complaint

A5.1 Socio-economic status and the costs of complaint

The interpretation of findings in this paper exploits variation in the costs of complaint between lower and lower-middle class citizens. The costs of complaint, while theorized here and elsewhere are latent. In this section, I provide additional support for the assumption that the lower class citizens face higher costs of complaint than lower-middle class citizens. One challenge in this analysis is that most measures of contestation (complaints or protest) reflect both the occurrence of a wrong (or the presence of a grievance) and sufficiently low costs of contesting the service (costs of complaint or of collective action). Differences in behavior between groups (here, classes) could be a function of differences in the rate at which citizens are wronged by the state and/or differences in propensity to contest those wrongs. Appendix A1.4 provides guidance for the interpretation of observational data sources like those described here.

In the Colombian context, I provide two pieces of evidence that higher income citizens contest poor service provision or other wrongs at higher rates than lower income citizens:

- Figure 2 plots the per-capita number of complaints by average wealth of each locality in Bogotá. These complaints are the formal version complaints that are submitted during processes of service provision. Given widespread perceptions and interviews that service provision increases in neighborhood or locality wealth in Bogotá, higher levels of complaint in rich localities suggests that citizens of rich localities suggests that this pattern is not simply driven by the occurence of a wrong (poor service provision). Instead, I argue that this provides evidence that costs of complaint drive are lower for citizens from high-income areas. There are two weaknesses in this evidence. First, there is an ecological inference problem: I cannot determine *which* citizens complain in rich and poor areas. Second, this evidence comes from Bogotá, not the country as a whole.

- Figure A1 plots rates of reported protest by social class using three waves of Latin American Public Opinion Project (LAPOP) data. While protest is a different form of contestation than the individual complaints related to the social welfare programs I study in the experiment (see Appendix A6), protest behavior is a form of costly contestation of government actions that features more prominently in measures on public opinion surveys. It also allows me to examine protest behavior at the individual level in a larger subset of municipalities than the complaint data permits.

LAPOP uses socioeconomic strata (*estrato*) in sampling but does not publicly release this information.[3] Instead, I rely on two alternative measures of class: household income and education. The income measure includes 17 income brackets (which change slightly in each survey wave) and the education measure is the number of years of education completed (top-censored at 18 years). I also create an index that incorporates both components by converting each measure to a z-score and then summing the two z-scores. The index is my preferred operationalization of class, as it incorporates more information. For completeness, I report findings using all three measures.[4]

To reduce reliance on functional form assumptions when assessing the relationship between class and protest participation, I bin each class measure into quartiles. Given LAPOP sample sizes, in each wave, there are

[3] Per email communication between author and LAPOP staff, May 24, 2021.

[4] There is a non-trivial amount missingness in the income measure ($\approx$14% in 2016, for example). In constructing the index, I use greedy indexing which uses the z-score one variable when the other is missing.

300-400 respondents per quartile bin.

Figure A1 plots estimates the β_j's from the following specification:

$$\text{Protest}_{imw} = \sum_j \beta_j \text{Quartile } j_{imw} + \epsilon_{imw}$$

where Quartile j_{imw} is an indicator for a respondent's membership in a quartile bin. Given the omitted intercept, the β_j's estimate the mean of the outcome variable in each quartile bin. In the top two panels of Figure A1, Protest$_{imw}$ is an indicator variable taking the value of 1 if the respondent reported participating in protest in the last month. In the bottom two panels, Protest$_{imw}$ is demeaned by municipality (equivalent to municipal fixed effects).

Figure A1 clearly shows that the rate of protest participation increases in socio-economic status. This increase is observed across all survey waves, operationalizations of class (though the relationship is somewhat weaker with household income), and comparisons within and between municipalities.

A5.2 Municipal poverty the relative costs of complaint

The analysis in Section 5.2 shows differences in bureaucratic bias in effort as a function of municipal poverty. This analysis rests on two assumptions:

A1: Municipal poverty rates measure differences in status (rank) between petitioner profiles (groups).

A2: Between-group differences in cost of complaint vary in the relative status (rank) of groups within a polity.

Collectively, Assumptions A1 and A2 allow me to proxy η_Q with rates of municipal poverty.[5] I provide support for each assumption here.

First, I show that municipal poverty rates covary with differences in status (rank) within municipalities. I show this in two samples. This municipal-level analysis is challenging with the LAPOP data because LAPOP only surveyed 47/1102 municipalities in 2018, and these municipalities are not representative of Colombian municipalities.[6] For the purposes of this analysis, it underrepresents municipalities with high rates of poverty: only 14/47 municipalities fall above the national median municipal poverty rate and there are no surveyed municipalities in the poorest decile of municipalities. To address these issues, I complement LAPOP data with census microdata from IPUMS. The public census microdata reports geographic units to the level of the municipality in large municipalities and clusters of several municipalities for smaller municipalities. There are 477 unique "clusters" out of 1102 municipalities in the 10% sample of the 2005 census (the most recent available on IPUMS). I aggregate poverty rates to the level of these municipal clusters and

[5] Note that the class composition of municipalities is not public information.

[6] The sample of municipalities in LAPOP is almost fixed across the 2014, 2016, and 2018 waves with 45 common municipalities. LAPOP seeks representativeness at the individual level.

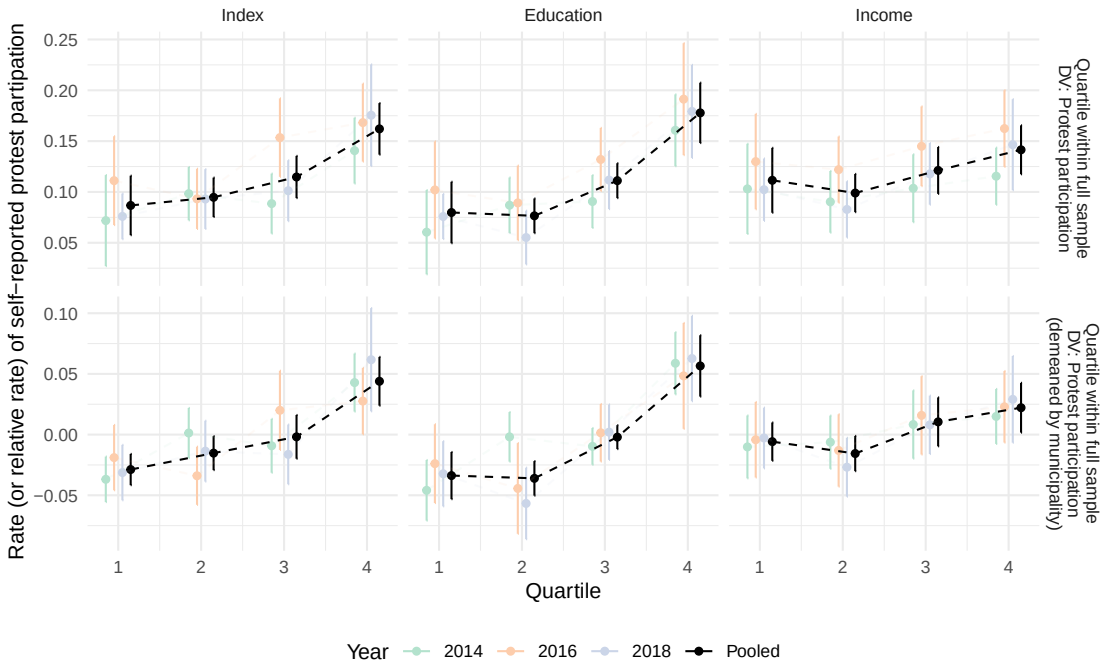


Figure A1: Association between social class and protest. Each column includes one measure of class: education, income, and an index that contains both measures. The top row reports estimates of the rate of protest, by class quartile (where quartiles are calculated relative to the national sample). The second row reports analogous specifications except the outcome is demeaned by municipal average (equivalent to municipality fixed effects). The black estimates pool over LAPOP rounds from 2014, 2016, and 2018. The lighter points report estimates from each wave of the LAPOP survey. 95% CIs are clustered at the municipality level.

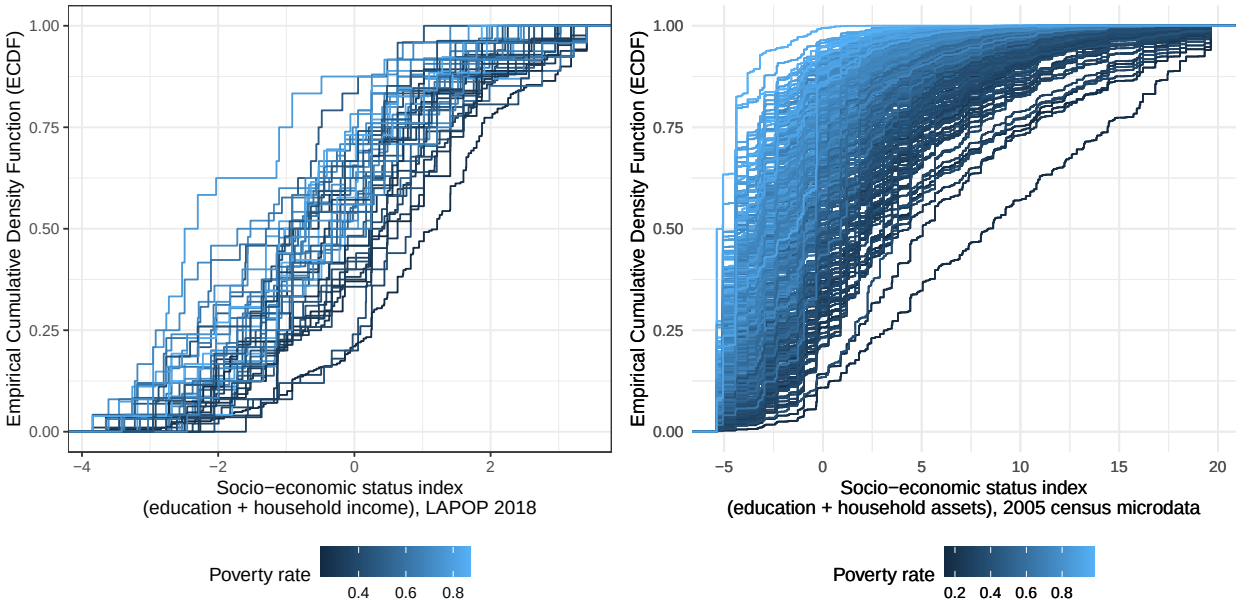


Figure A2: ECDFs of socio-economic status (Z-score) indices. The left plot uses data from the 2018 LAPOP survey and the right plot uses census microdata from IPUMS. Each curve represents a municipality (left) or cluster of one or more municipalities (right). The color of each ECDF corresponds to the measure of municipal poverty in the text. The ordering of the curves by color suggests that municipal poverty rates summarize differences in ranks of citizen status between municipalities.

construct an analogous index of socio-economic status using years of education (as in LAPOP) and a battery of assets (consisting of ownership of: automobiles, computers, a washer, a refrigerator, a television, and a radio and household access to hot water).

Figure A2 plots the ECDFs of the socio-economic status indices for each municipality (or municipality cluster) on both the LAPOP (left) and census (right) samples. The curves are colored according to the municipal poverty rates used as the moderator in Section 5.2 of the manuscript. This sorting of the lines, by shade, support the assumption that municipal poverty rates capture differences in rank of different (absolute) socio-economic statuses. A simpler illustration in Figure A3 depicts the relationship between municipal poverty and the rank of the mean of the national socio-economic status index. This mean provides one plausible (if arbitrary) interpretation of "lower middle class." In poor municipalities, this profile sits within the top quartile whereas in rich municipalities, this profile sits within the lowest or second quartile. Collectively, these plots provide strong support for Assumption A1 (above) that municipal poverty rates summarize differences in status (rank) between fixed petitioner profiles.

To test assumption A2, I recode quartiles of socio-economic status as *relative to the municipality* instead of the absolute measures in Figure A1 and examine the correlation between this relative measure of class and reported protest participation. To illustrate the difference, Figure A4 illustrates the distinction between the coding of class by absolute levels (in the "National" line and the relative coding of a relatively rich and poor municipality, Bogotá and Puracé, Cauca. I then analyze the correlations between this relative coding of class and protest in Figure A5, showing a positive correlation betweeen class and protest. This provides

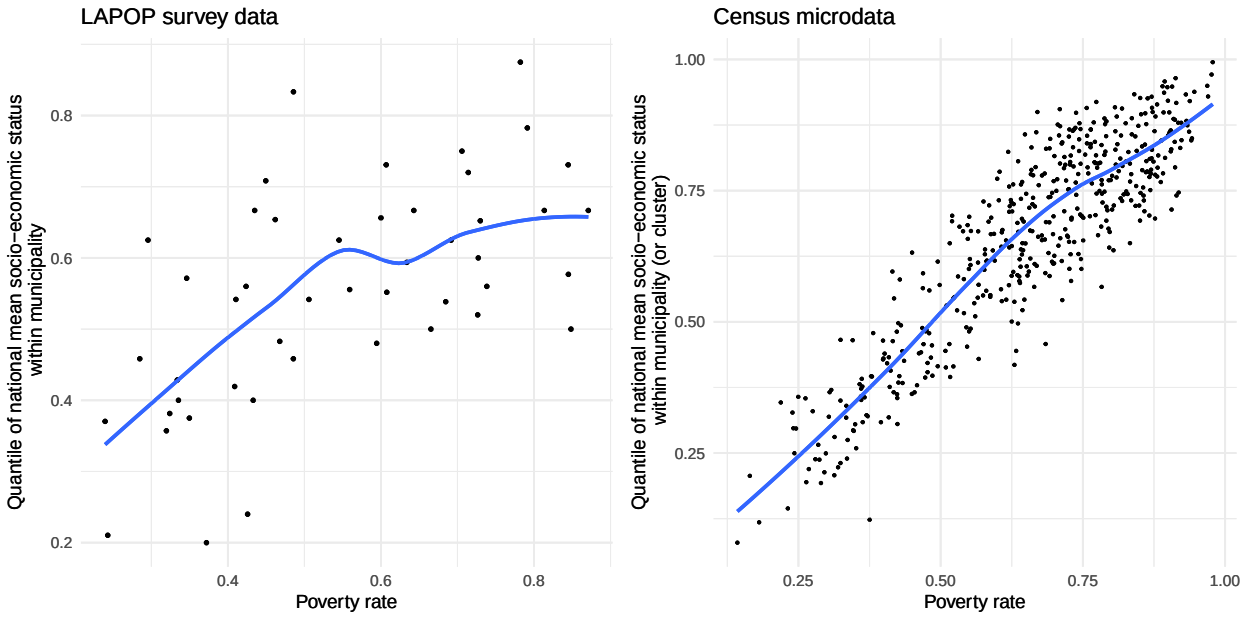


Figure A3: Association between municipal poverty rates (x-axis) and the quantile of the national mean of the socio-economic index (within each sample). Data from the 2018 LAPOP survey (right) and the IPUMS microdata (right).

qualified support for Assumption 2, at least within the limited sample of LAPOP municipalities. Collectively these analyses suggest that:

1. Differences between lower-middle class and lower class profiles are "more distant" in poorer municipalities (or clusters of municipalities) (per Figures A2 and A3.

2. There exists a positive correlation between relative socio-economic status within a municipality and reported rates of protest (a measured form of complaint), which provides qualified support for the idea that higher (relative) status individuals face lower costs of complaint.

Because the profiles – lower class and lower-middle class – are held fixed in the experiment, I operationalize η_Q with municipal poverty rates.

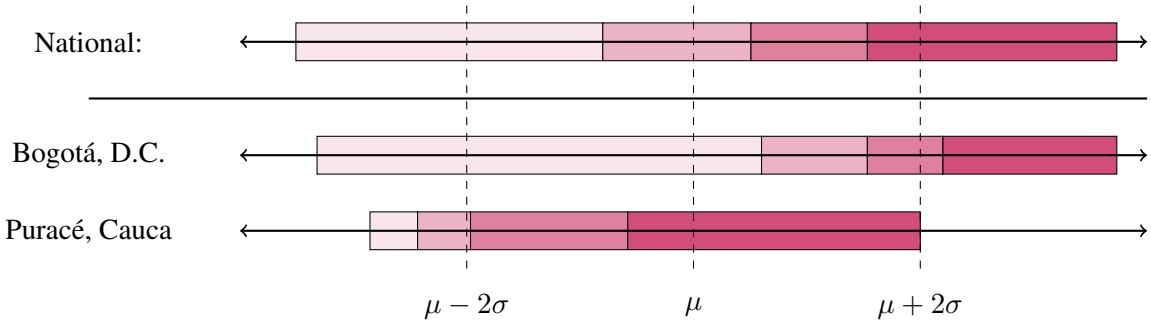


Figure A4: Illustration of the difference in absolute coding ("National") and relative coding of socio-economic status quartiles in in Figure A1 and Figure A5.

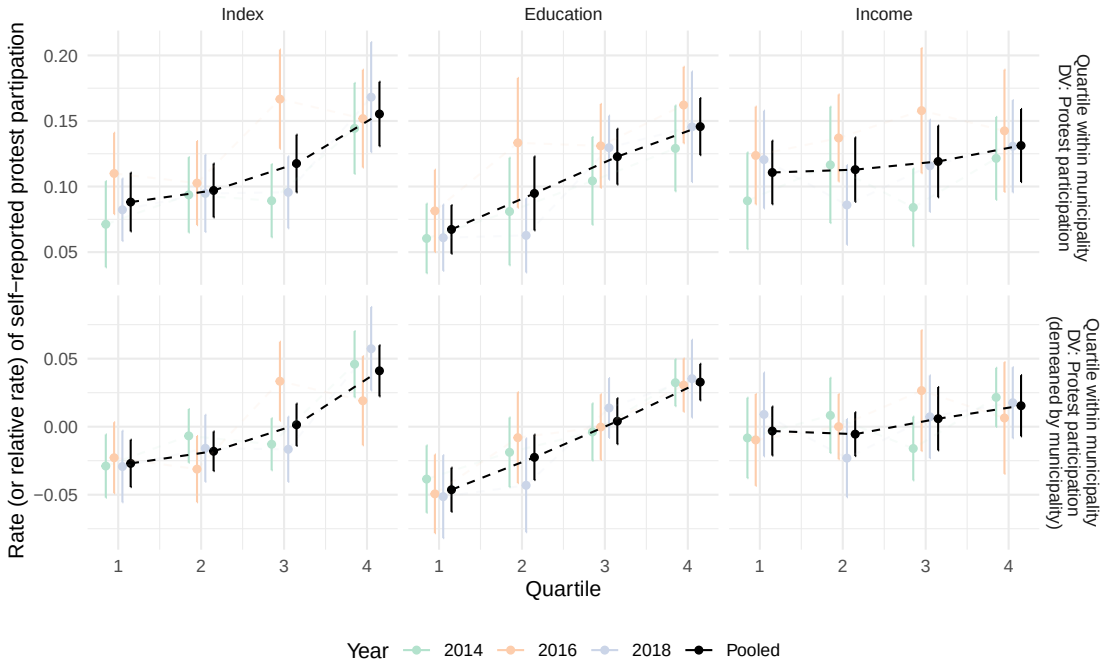


Figure A5: Association between social class – defined relative to one's municipality – and protest. Each column includes one measure of class: education, income, and an index that contains both measures. The top row reports estimates of the rate of protest, by relative class quartile (where quartiles are calculated relative to the municipal sample). The second row reports analogous specifications except the outcome is demeaned by municipal average (equivalent to municipality fixed effects). The black estimates pool over LAPOP rounds from 2014, 2016, and 2018. The lighter points report estimates from each wave of the LAPOP survey. 95% CIs are clustered at the municipality level.

A6 Broader Conceptions of Citizen Control over Bureaucrats

In this section, I consider protest as an alternative forms of complaint. Protest is generally consistent with the (broad) concept of complaints as communication from citizens to principals about the actions or outcomes of agents. However, variation in use of these strategies (i.e., the cost of these strategies) may predict different patterns of complaint-driven bias than the individual appeals/complaints that I describe in the main text. In this section, I show that unlike the complaints described in Figure 2 and Table A3, protest does not appear to be widespread in the policy domain that I describe. If these alternative strategies are more commonly employed (or available) in other contexts, understanding the implications for the cost of complaint c_C across the population would be important to make predictions about the direction and magnitude of complaint-driven bias.

It is important to note that across interviews with national and local bureaucrats, no interviewee mentioned the prospect of protest as a salient strategy pursued by citizens to exert control over bureaucrats administering social welfare services. There are two potential limitations to this evidence. First, it could be the case that the prospect of protest looms so large for bureaucrats that the mere threat of protest sustains effort (to head off protests), even though we might not see the realization of protests in equilibrium. However, the levels of service provision in the audit experiment, in Figure 1 (in some municipalities), and more generally in Colombia suggests that underprovision is a substantial policy problem. Taken together with the evidence from interviews, there is not empirical evidence that a latent threat of protest sustains the effort required to eliminate or minimize citizen grievances with respect to the provision of social welfare services. Second, interview subjects did not comprise a nationally representative sample of Colombian local bureaucrats. As such, protest may be be more salient in regions where I did not speak with bureaucrats. To speak to this concern, I examine event data on protest from 2018-2019 (roughly contemporaneous with the experiment) in Colombia. I analyze national event data on protests from two sources, described in Table A4. The datasets differ slightly in construction: CINEP/PPP is compiled by hand by a Colombian NGO that tracks social movements and human rights. I consider protests motivated by issues of "service provision" according to the CINEP/PPP categorization, and then identify protests over social welfare programs/subsidies like the programs audited in this program. The second dataset is ACLED's recent compilation of protest and riots. This dataset (in Colombia) does not start until September 2018. Using the brief narrative summarites of each event, I used the CINEP classification of protest motivations and hand classified the motivations for each ACLED observation for comparability.

Table A4 suggests that relatively few protests are motivated by service provision. In the CINEP data, only 12.2% of all unique events, or 7.8% of those at the event-municipality level is linked to service provision. In the ACLED data, more protests are linked to service provision (29.8%), though this is largely due to the liberal coding of student protests, a well-established phenomenon in the Colombian context. With respect to social welfare programs, CINEP/PPP records only 3 protests and ACLED records only 5 protests in 2018-2019. These protests are more likely to be confined to one municipality than protests in general (per the CINEP/PPP data). The final panel suggests substantial participation of public-sector workers in protests related to service provision. Sometimes these protests are joint with citizens, i.e., public sector teachers and students, commonly protesting cuts to education budgets. In other cases, public sector workers (bureaucrats) protest against state failures to pay or reductions in benefits. The protests coded as involving public sector participation include protests with and without the participation of citizens outside the public sector.

	CINEP/PPP		ACLED
PANEL A: DATA DESCRIPTION			
Temporal coverage	January 2018-December 2019		September 2018-December 2019
Sample	70% sample protest events		100% sample of protests or riot events
Event identification	Identified by NGO		Reported in local or international press
Coded by	Hand		Machine
PANEL B: PROTESTS RELEVANT TO SOCIAL PROGRAMS			
	Unique protests	Protest-municipality events	Protest-municipality events
Total events in sample	1212	2463	1321
Protests over service provision	149 (12.2%)	192 (7.8%)	395 (29.8%)
Protests over social welfare programs	3 (0.2%)	3 (0.1%)	5 (0.2%)
PANEL C: SPATIAL DISPERSION OF PROTESTS			
Avg. municipalities/protest	2.03	–	
Avg. municipalities/protest over service	1.28	–	
Avg. municipalities/protest over social welfare provision	1	–	
PANEL D: PARTICIPATION OF PUBLIC SECTOR WORKERS			
Service provision protests with public sector participation	–	–	186 (47%)
Social welfare program protests with public sector participation	–	–	3 (60%)

Table A4: Sources of protest data. Note that the CINEP/PPP data is private and analyzed under a license with CINEP.

With respect to the programs under investigation, ACLED records two protests related to SISBÉN, both in late 2019. Both are by public sector contractors alledging non-payment for work related to the enumeration of households for SISBÉN IV. In combination with the qualitative components of this research, it is highly unlikely that protests are the most likely means through which citizens challenge bureaucratic decisions with respect to the audited programs. Protests are comparatively rare in other service provision domains as well. For reference, with 1,102 municipalities, the count of all protest events by municipality in the CINEP/PPP data in Table A4 indicates an average of of 1.1 protests per municipality per year.[7]

[7]In total, protest events are reported in 472 municipalities between 2018 and 2019. As such, the figure in Table A4 indicates an average 2.61 protests per year, conditional on any protest being reported.

A7 SISBÉN and Colombian Social Programs

Colombia's SISBÉN serves as a means-testing service for many social programs. Most social programs are targeted to *households* or *individuals*. SISBÉN scores are assigned at the household level. Figure A6 depicts the relationship between SISBÉN enrollment and enrollment for other targeted social services, including Más Familias en Acción.

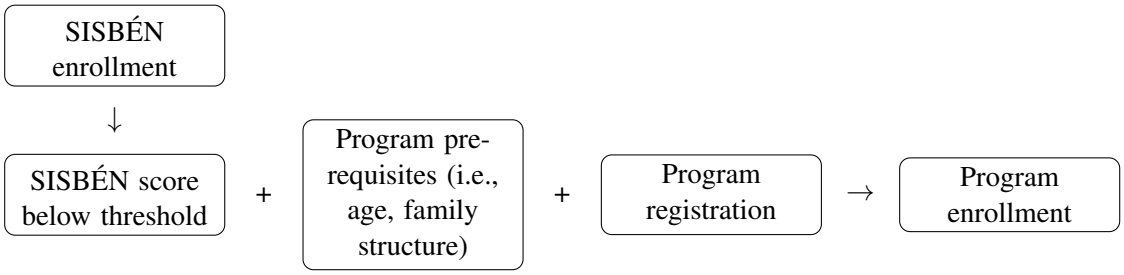


Figure A6: Program enrollment requirements.

SISBÉN provides registrants with the potential to access at least 24 national government social programs listed in Table A5. This list is adapted from SISBÉN's website as of July 2021 at `https://www.sisben.gov.co/Paginas/programas-sociales.aspx`. It omits programs created since 2018 (when the audit experiment occurred).

Entity/Agency		Program (Spanish/English)	Description
Agencia Nacional de Tierras	1	Adjudicación de baldíos/Allocation of vacant land	Offers displaced farmers access to state land (a form of agrarian reform).
Ejército Nacional	1	Exención en el pago de la cuota de compensación militar/Exemption from payment of military compensation fees.	Exemption from fees for military registration.
Instituto Colombiano de Bienestar Familiar	1	Atención Integral a la Primera Infancia/Comprehensive Early Childhood Care	Programing related to comprehensive childcare for children under five.
	2	Infancia/Childhood	Programming to support childhood development for children ages 6-13.
	3	Adolescencia y Juventud/Adolescence and Youth	Programming to protect youth. Also provides some educational programming for youth.
	4	Nutrición/Nutrition	Focuses on early childhood nutrition, including for children and women who are pregnant or brerastfeeding.
	5	Protección (Hogar gestor y otros similares)/Protection Protection (Home manager and similar)	Supports adolecents exposed to violence as well as those with a criminal record.
	6	Familias y Comunidades/Families and communities	Designs and implements community family support programs to reduce and mitigate the effects of violence, abuse or neglect against children/adolescents.

Entity/Agency		Program (Spanish/English)	Description
ICETEX	1	Tú Eliges/You Choose	Student loans for post-secondary education.
Ministerio de Educación	1	Generación E Equidad/Generation and Equality	Promotes access to and retention in higher education progrrams for econonically vunerable young people.
	2	Generación E Excelencia/Generation and Excellence.	Assists the strongest high school graduates in the country from conditions of economic vulnerability in accessing high-quality, accredited institutions of higher learning
Ministerio de Minas y Energía	1	Subsidio Gas Licuado de Petróleo - GLP/Petroleum subsidy	Subsidizes the consumption of gas/petroleum for citizens living in contexts of exclusion
Ministerio de Salud y Protección Social	1	Régimen Subsidiado de Salud/Subsidized Health Care Plan	Government-subsidized health insurance plan.
Ministerio de Vivienda	1	Vivienda Rural/Rural Housing	Provides housing support for rural populations.
Prosperidad Social	1	Colombia Mayor/Senior Colombia	Subsidy for poor/vulnerable seniors.
	2	Familias en Acción/Families in Action	CCT directed at mothers (when present) of young and school-age children.
	3	Jóvenes en Acción/Youth in Action	CCT directed at young adults, ages 14-28.
	4	Red Unidos/United Network	Improve the living conditions of the poorest households in the country through family support and preferential access to relevant public and private social services in the areas of health, education, labor, and housing.
	5	Compensación de IVA/Compensation of the value added tax	An economic support measure for the poorest households through a value added tax refund scheme.
	6	RESA/Food Safety Network	Promotes food security at the household level.
	7	Mi Negocio/My business	Provides training and opportunities to facilitate the development of small businesses.
	8	Empredimientos Colectivos/Collective Ventures	Supports small business development by offering technical assistance and credit.
Registraduría Nacional	1	Extención en el pago de la cédula de ciudadanía/Identity Card Payment Exemption	Exemption from fees for national ID.
Unidad de Alimentación Escolar	1	Programa de Alimentación Escolar/School Feeding Program SFP	School lunch program in public schools. Targeted at the community level.
Unidad para las Víctimas	1	Atención Humanitaria	Monthly subsidy to guarantee minimal subsistance for victims of conflict.

Table A5: Social programs allocated on the basis of SISBÉN scores

A8 Demographic Data Related to Bias Treatments

Colombia's last national census prior to the experiment was conducted in 2005. Given the vintage of the data, I used population projections where relevant and available. All aggregate data in this section comes from the Departamento Administrativo Nacional de Estadística and all microdata comes from IPUMs.

A8.1 Socioeconomic Class

Detailed data on socioeconomic class is not available in Colombia. As such, I present the distribution of Colombians by class as per the 2005 census in Figure A7.

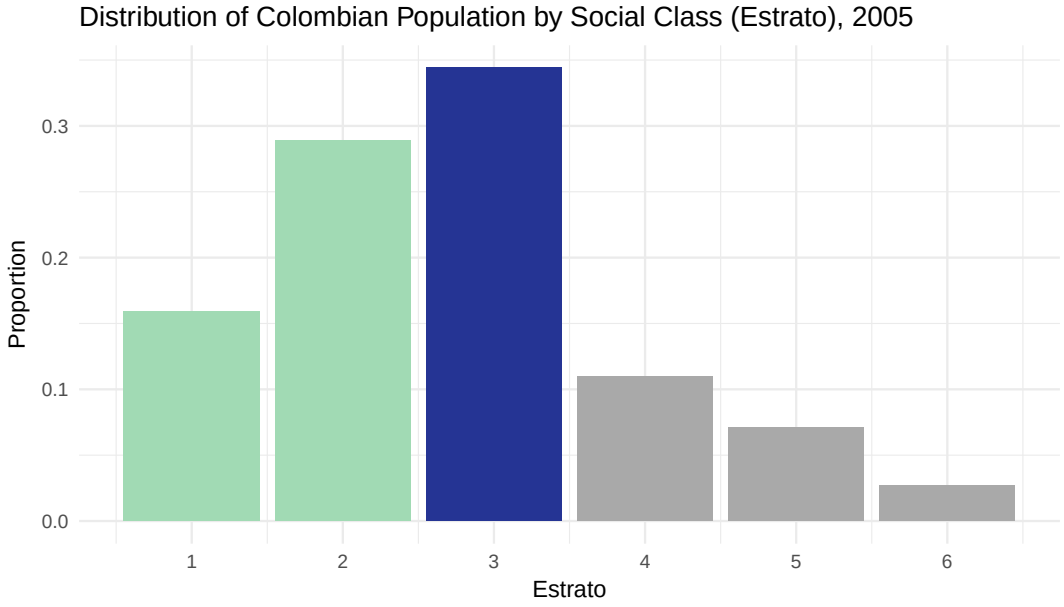


Figure A7: Distribution of classes in the 2005 Colombian census. The social class of the treatments are denoted by the colored bars.

A8.2 Regional Accents

In this section, I describe the geographic coverage and prevalence of the three accents utilized in the audit experiment. Figure A8 shows the departments to which these (generalized) accents are native. These are among the most densely populated regions of Colombia.

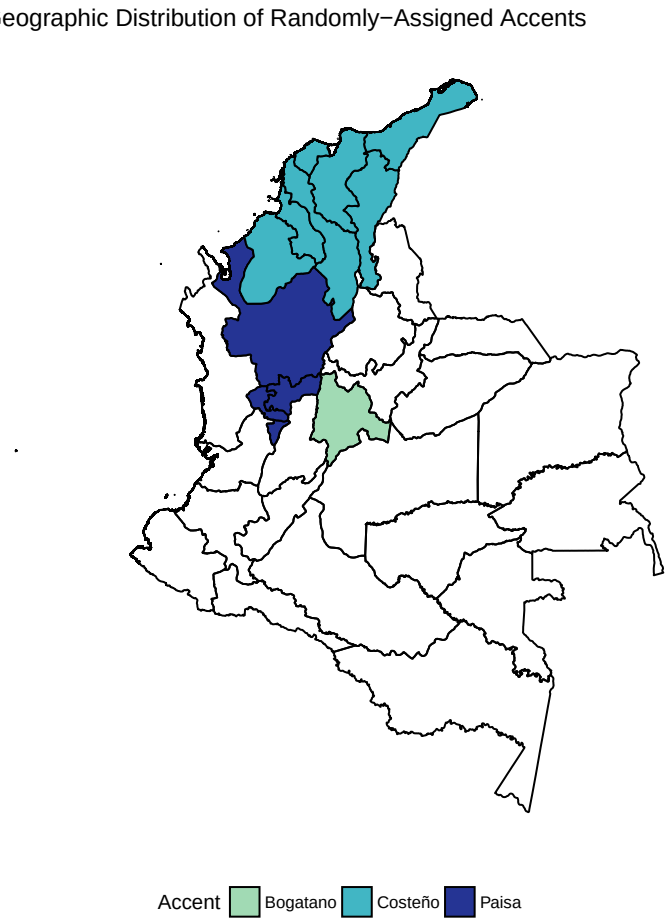


Figure A8: Geographical coverage of the Bogotano, Costeño, and Paisa accents at the departmental level. Note that the map of the Bogotá accent includes the department of Cundinamarca. Some portion of Cundinamarca's population speaks with a different accent (Cundinaboyacense).

I approximate the number of speakers of each accent in Colombia in Figure A9.[8] To approximate these quantities, I consider the most widely-spoken accent in each department. I aggregate the projected population (2017) by DANE for each department and sum across the departments associated with each accent. This exercise indicates that nearly 60% of the Colombian population speaks one of the three regional accents utilized in the audit experiment.

[8]Note that several of the accents are also spoken in neighboring countries, e.g. the Llanero accent in Venezuela. These counts only include speakers of the accent in Colombia.

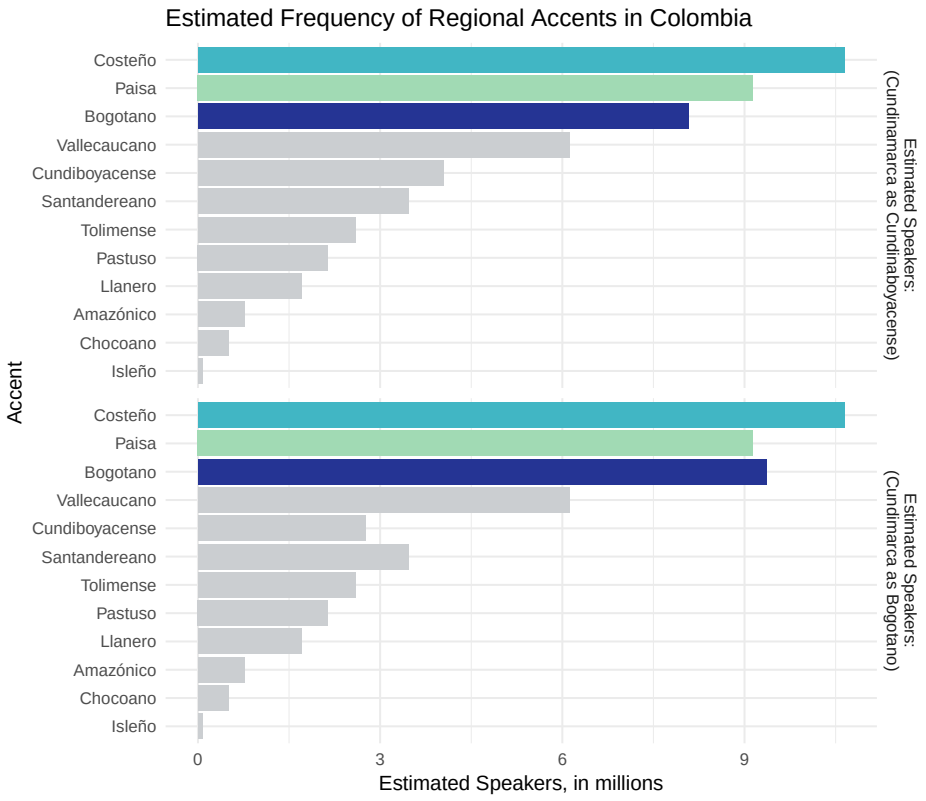


Figure A9: Approximate number of speakers of Colombia's twelve major accents. The graph shows that the most widely-spoken accents are the Bogotano, Costeño, and Paisa accents used in the experiment. Approximately 60% of the Colombian population speaks one of these three accents. The panels differ in the classification of the accent in the department of Cundinamarca (Bogotano or Cundinaboyacense).

A8.3 Migration

In Table A6, I place lower bounds on the proportion of Colombians that have (a) ever migrated and (b) migrated within the last five years using census microdata subsamples available from IPUMs. I bound the share of Colombians that have ever migrated by examining the share of individuals residing in their municipality of birth. Note that this is a lower bound as reverse-migrants will not be counted as migrants. I bound the share of individuals who report migrating to a different geographical unit in the past five years. This similarly does not count reverse-migrants and should be considered a lower bound.

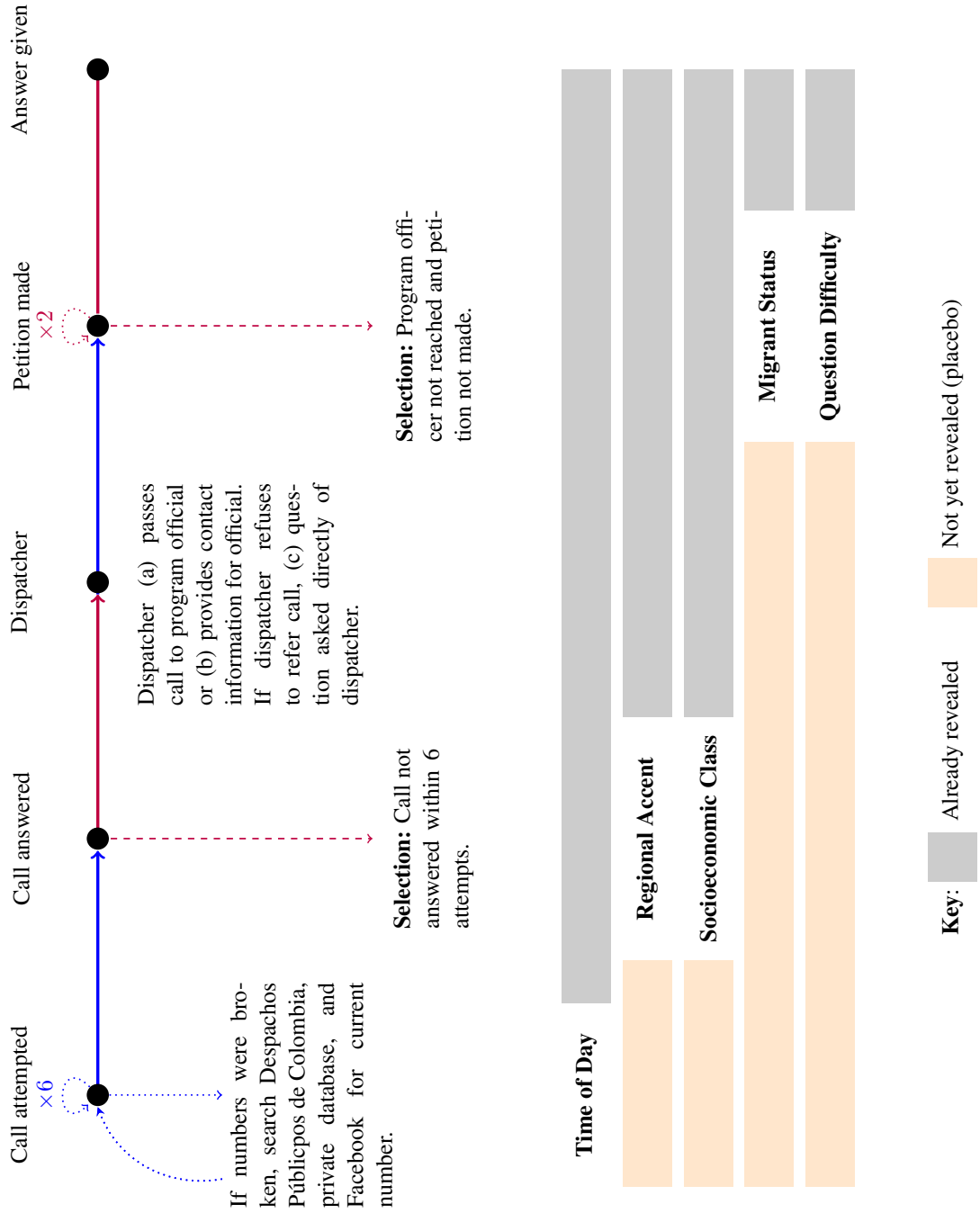
In general, the bounds suggest that at least 37% of the Colombian population (2005) has migrated at some point in their lives. This remains relatively stable across time. Furthermore, in past censuses, 10-17% of Colombians report migrating within the past five years. Note that migration to other departments is slightly more common than migration within the same department, though both forms of migration are common. These totals include both ordinary and conflict-induced migration.

	Census of				
	1964	1973	1985	1993	2005
A: MICRODATA SAMPLE SIZE (FROM IPUMS)					
Sample Size	349,652	1,988,831	2,643,125	3,213,657	4,006,168
B: LIFETIME MIGRATION (LOWER BOUND), RESIDES IN:					
Municipality of Birth	0.635	0.626	0.642	0.594	0.623
Same Department, Different Municipality	0.180	0.160	0.145	0.170	0.152
Different Department	0.181	0.209	0.210	0.225	0.204
(Born Abroad)	0.004	0.004	0.003	0.003	0.003
No Response	0.000	0.000	0.000	0.007	0.019
C: MIGRATION IN LAST FIVE YEARS (LOWER BOUND):					
Has not Migrated			0.869	0.834	0.905
Migrated within Department			0.056	0.062	0.031
Migrated from a Different Department			0.069	0.084	0.041
Immigrated			0.006	0.004	0.002
No response			0.000	0.016	0.021

Table A6: Lower bound on lifetime migration and migration within the last five years in Colombian censuses since 1964. Migration within the last five years was not included in the 1964 or 1973 censuses. Population-weighted means estimated from census microdata.

A9 Call Sequencing Flow Chart

Confederates were trained, in part, by memorizing a basic flowchart for each call which mirrored the instrument that they filled in. This graphic provides a translated and vastly simplified version of the sequence of calls, denoting the point in the call at which each factor was revealed and delineating the subsamples. As in the main manuscript three samples are defined and temporally delineated, as depicted below the flowchart.



A10 Petitions, Correct Answers

The following table lists the questions and correct answers used in the audit experiment translated to English. There are eight total questions. Because the difficulty of the question and migrant status are conveyed in the petition, there is effectively a 2×2 for each of the two programs, SISBÉN and MFA. The petitions appear in Tables A7 and A8, respectively.

All questions were presented in the third person to minimize detection (e.g. a request for the petitioner's identification number). Empirically, a substantial proportion of observed calls in government call centers were made on behalf of someone else. Further, in piloting, the responses to first person versus third person requests were qualitatively similar with the exception of petitions for an identification number.

	Program	Difficulty	Migrant	Question	Correct Answer
1	SISBÉN	Easy	Migrant	I am doing my neighbor a favor and asking about SISBÉN. She just moved to this municipality and wants to register for SISBÉN. What does she need to do to register?	1. Go to the SISBÉN office. 2. Ask for an application for the survey for the first time. 3. She must be a resident of the home, older than 18 years, and present her identification card. 4. (At this time, we are not doing new registrations for SISBÉN.)
2	SISBÉN	Easy	–	I am doing my neighbor a favor and asking about SISBÉN. She wants to register for SISBÉN. What does she need to do to register?	1. Go to the SISBÉN office. 2. Ask for an application for the survey for the first time. 3. She must be a resident of the home, older than 18 years, and present her identification card. 4. (At this time, we are not doing new registrations for SISBÉN.)
3	SISBÉN	Difficult	Migrant	I am doing my neighbor a favor and asking about SISBÉN. She just moved to the municpality and tried to enter *Colombia Mayor* and they did not let her. She has a score of 45. What can she do to lower her score? She is 65 years old.	1. Go to the SISBÉN office. 2. Check the form of the person to verify that the data in the system are correct. 3. If there are differences on the form, complete a petition of disagreement. 4. For the request to be approved, she will need to ask for a new survey. 5. She must be registered for SISBÉN in this municipality and her score must correspond to the guidelines in this [category of] municipality.
4	SISBÉN	Difficult	–	I am doing my neighbor a favor and asking about SISBÉN. She tried to enter *Colombia Mayor* and they did not let her. She has a score of 45. What can she do to lower her score? She is 65 years old.	1. Go to the SISBÉN office. 2. Check the form of the person to verify that the data in the system are correct. 3. If there are differences on the form, complete a petition of disagreement. 4. For the request to be approved, she will need to ask for a new survey.

Table A7: List of SISBÉN petitions, translated to English.

Program	Difficulty	Migrant	Question	Correct Answer
MFA	Easy	Migrant	I am doing my sister a favor and asking about MFA. She just moved to this municipality and wants to register for MFA. She has a 6 year old son and a 10 year old daughter. What does she need to do to register?	1. She must come to the office of the municipal *enlace* or point of service. 2. She must bring her document of identification. 3. She must bring the civil registration of all children under 7 and the identification card for all children between ages 7 and 18. 4. For children under 6, she should bring a certificate of children's attendence at (medical) exams of growth and development, certified with the name of the attending official. 5. For children in school, the mother should bring proof of enrollment in school. 6. (At this time, we are not doing new registrations for MFA). 7. The mother must register for SISBÉN in this municipality and have a qualifying score for MFA.
MFA	Easy	–	I am doing my sister a favor and asking about MFA. She wants to register for MFA. She has a 6 year old son and a 10 year old daughter. What does she need to do to register?	1. She must come to the office of the municipal *enlace* or point of service. 2. She must bring her document of identification. 3. She must bring the civil registration of all children under 7 and the identification card for all children between ages 7 and 18. 4. For children under 6, she should bring a certificate of children's attendence at (medical) exams of growth and development, certified with the name of the attending official. 5. For children in school, the mother should bring proof of enrollment in school. 6. (At this time, we are not doing new registrations for MFA). 7. The mother must register for SISBÉN in this municipality and have a qualifying score for MFA.
MFA	Difficult	Migrant	I am doing my neighbor a favor and asking about MFA. She just moved to this municipality. How does she change her registration with the program?	1. Go to the MFA office. 2. She must present a signed written request documenting that she has moved to the municipality. 3. The mother must register for SISBÉN in this municipality and have a qualifying score for MFA.

Program	Difficulty	Migrant	Question	Correct Answer
MFA	Difficult	–	I am doing my neighbor a favor and asking about MFA. Her sister, who was a MFA recipient died and left her in charge of her nephew. How does she become the MFA recipient for her nephew?	1. Go to the MFA office. 2. She must present her identification document. 3. She must turn in the document of custody and personal care of the child, issued by the competent authority: the defender or commisary of the family. 4. She must present the document from the civil registry documenting her sister's death. 5. The mother must be registered for SISBÉN in this municipality and have a qualifying score for MFA.

Table A8: List of MFA petitions, translated to English.

A11 Sampling, Construction of Weights

A11.1 Municipal Sampling

I use stratified random sampling of municipalities in an effort to maximize within variation while limiting the probability of detection. Table A9 defines the strata of municipalities. It also indicates the number of petitions per entity.

				n Petitions per Entity			
Stratum	Stratum Size	Population threshold	Sample	SISBÉN	MFA	Total	Total Petitions
Large	80	> 100,000	All	3	3	6	480
Medium	140	[35,000, 100,000)	All	2	2	4	560
Small	898	< 35,000	398	1	1	2	796
Total	1118		618				1836

Table A9: Sample of municipalities (or localities) and number of petitions. Note that in the small stratum, localities are selected proportionally to population size. All population data from 2018 estimates from DANE.

The sampling probability for medium and large municipalities is clearly 1. However, the sampling probability for small municipalities is heterogeneous since sampling was proportional to estimated population in 2018. Figure A10 depicts the sampling probabilities for municipalities as a function of population size (calculated via simulation). It demarcates the three strata by color. Note that Bogotá, the largest municipality, is divided into localities for the purposes of the experiment.

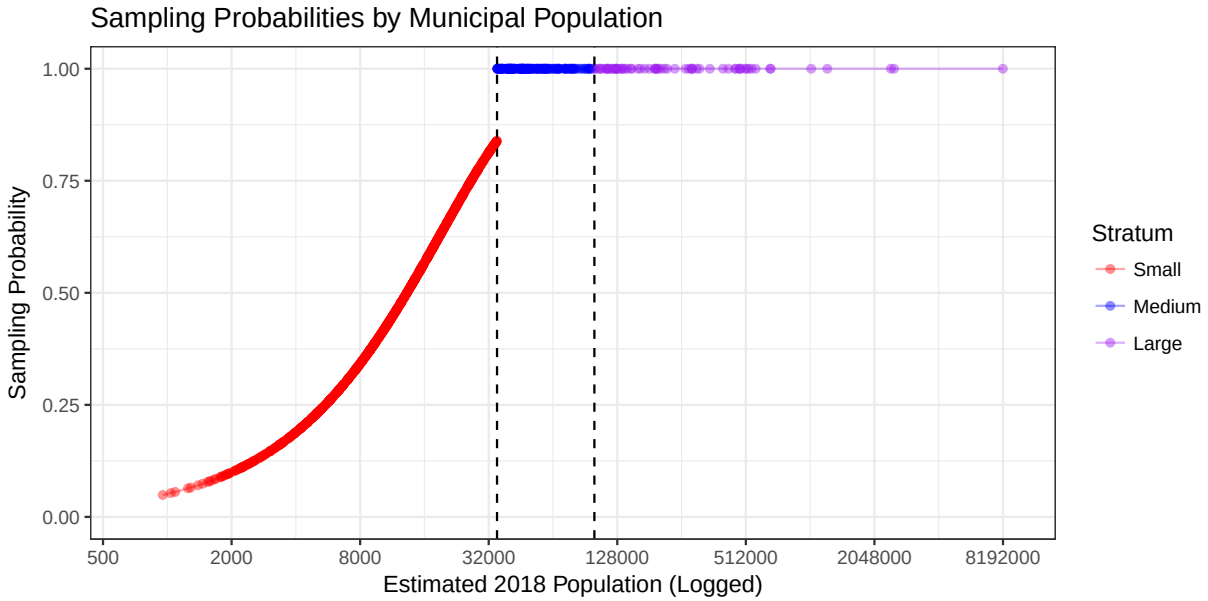


Figure A10: The sampling probabilities for municipalities as a function of population. The points represent individual municipalities in the universe. Note that these points are municipalities; localities in Bogotá are not represented in the present graph.

Predictably, this sampling procedure gives rise to a sample that is larger, on average, than the pool of municipalities as a whole, but one that provides support across the distribution of municipal populations, as depicted in the density plots in Figure A11. Note that in the experiment, 16 of Bogotá's localities are sampled according to the same rules for a total of 618 entities. Bogotá is represented as a whole in Figure A11.

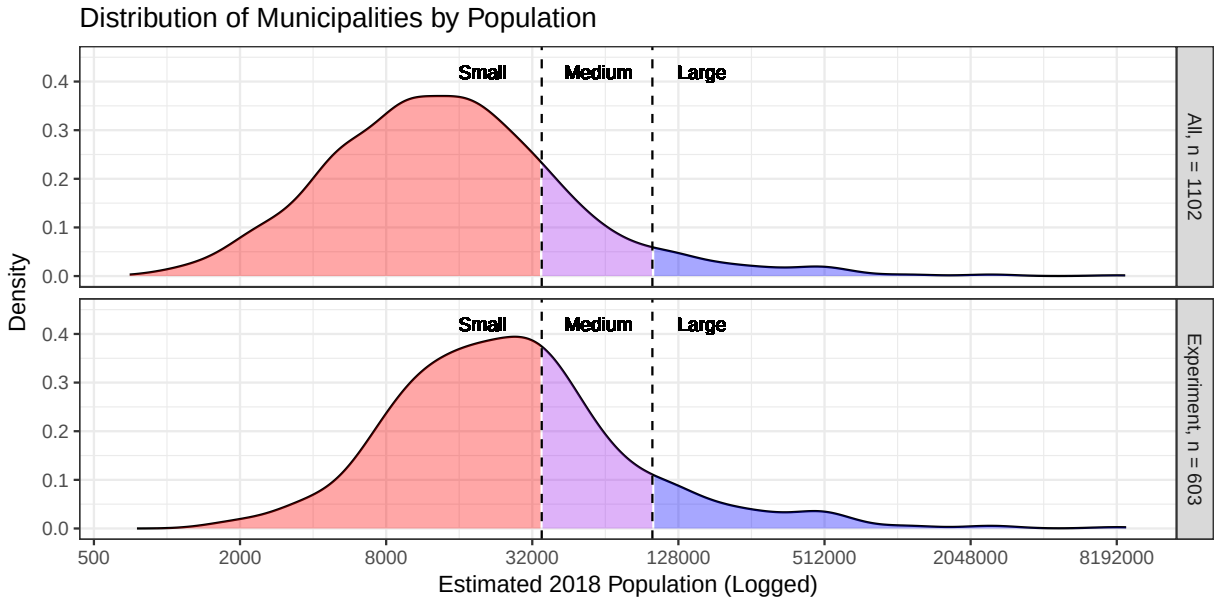


Figure A11: The municipalities in the sample compared by population compared to the full distribution of Colombian municipalities.

A12 Random Assignment

A12.1 Factorial Design

The random assignment is generally blocked at the entity level (including both petitions) in order to maximize the within variation within each entity. The specifications by municipality size stratum are indicated in Table A10.

A12.2 Random Assignment of Enumerators

Enumerators come from each of the three regions corresponding to the regional accents. All enumerators are actresses and voice both the loweer and lower-middle class scripts. Within an accent, calls were block random-assigned to enumerators. As such, all enumerators cover all of the other factors of randomization.

A12.3 Random Assignment of Order of Calls

Calls were randomly assigned to an order for the original call. The assignment of the order proceeds as follows:

- Assignment to portions of the order distribution:

Stratum	Attribute	Details	Restrictions
Large	Class	• 3 lower-middle • 3 low	Blocked by municpality/locality with each of 6 accent+ class combinations represented
	Accent	• 2 Bogotá • 2 Paisa • 2 Costeño	Blocked by municpality/locality with each of 6 accent+ class combinations represented
	Difficulty	• 4 easy • 2 hard	Blocked by program (SISBEN and MFA): easy questions (all) with one SISBEN and one MFA hard question.
	Migrant Status	• 3 migrant • 3 non-migrant	Both easy migrant questions; one hard question includes migrant line.
	Time of day	• 2-4 morning • 2-4 afternoon	Blocked by program (SISBEN, MFA) and municipality/locality
Medium	Class	• 2 lower-middle • 2 low	Blocked by program (SISBEN, MFA) and municipality/locality
	Accent	• 1 Bogotá • 1 Paisa • 1 Costeño • (1 repeated)	Blocked by municipality/locality. Repeated accent appears in both programs
	Difficulty	• 2 easy • 2 hard	Blocked by program (SISBEN/MFA) and municipality/locality
	Migrant Status	• 2 migrant • 2 non-migrant	Blocked by program (SISBEN/MFA) and municpality/locality
	Time	• 2 morning • 2 afternoon	Blocked by program (SISBEN/MFA) and municipality/locality
Small	Class	• 1 lower-middle • 1 low	Blocked by municpality/locality.
	Accent	• 2 distinct accents	Two distinct accents assigned to each municipality/locality
	Difficulty	• 1 easy • 1 hard	Blocked municipality/locality.
	Migrant Status	• 1 migrant • 1 non-migrant	Blocked by municipality/locality
	Time of day	• 1 morning • 1 afternoon	Blocked by municipality/locality

Table A10: Factorial design by stratum with restrictions on the randomization intended to maximize within-municipality variation. Note that the total number of petitions reflects those sent to both SISBÉN and MFA (combined).

  - Within the large stratum (denoted $\mathcal{L}$), block randomly assign calls within each entity to six blocks. These correspond to sextiles of the rollout. Denote these blocks as $b_i^L \in \{1, 2, 3, 4, 5, 6\}$
  - Within the medium stratum (denoted $\mathcal{M}$), block randomly assign calls within each entity to four blocks. These correspond to quartiles of the rollout. Denote these blocks as $b_i^M \in \{1, 2, 3, 4\}$.
  - Within the small stratum (denoted $\mathcal{S}$), block randomly assign calls within entity to two blocks. These correspond to halves of the rollout. Denote these blocks as $b_i^S \in \{1, 2\}$

- Within each block in the rollout (defined above), randomly assign an integer ordering to the calls, denoted $O_i \in \{1, ..., \frac{|\mathcal{L}|}{6}\}$ for the large stratum, where $|\mathcal{L}|$ is the cardinality of the set of calls in the large stratum.

- Use the following formula to convert the rollout to a continuous measure between 0 and 1, shuffling the calls from the strata:

$$R_i = \frac{\mathbb{I}_{i\in\mathcal{L}}[(\frac{|\mathcal{L}|}{6}(b_i^L - 1) + O_i]}{|\mathcal{L}|} + \frac{\mathbb{I}_{i\in\mathcal{M}}[(\frac{|\mathcal{M}|}{4})(b_i^M - 1) + O_i]}{|\mathcal{M}|} + \frac{\mathbb{I}_{i\in\mathcal{S}}[\frac{|\mathcal{S}|}{2}(b_i^S - 1) + O_i]}{|\mathcal{S}|} \quad (7)$$

- Assign calls to enumerators (assigned as above) based on their order in the distribution.

A13 Distribution of Treatments

The frequency with which treatment cells were utilized in the experiment is reported in Table A11. Note that There was a higher probability of assignment to easy than hard questions in the large stratum, and thus in the experiment as a whole. Otherwise, all cells (within easy and hard) had equal probabilities of assignment.

Easy Petition								
			Migrant Accent			Non-Migrant Accent		
			Bogotano	Costeño	Paisa	Bogotano	Costeño	Paisa
Morning	Class	Lower	44	37	47	46	44	33
		Middle	57	37	50	45	48	47
Afternoon	Class	Lower	28	39	40	42	26	37
		Middle	50	52	49	32	36	32
Difficult Petition								
			Migrant Accent			Non-Migrant Accent		
			Bogotano	Costeño	Paisa	Bogotano	Costeño	Paisa
Morning	Class	Lower	25	34	28	44	32	43
		Middle	36	36	26	27	37	24
Afternoon	Class	Lower	43	38	35	41	42	40
		Middle	29	33	35	34	39	37

Table A11: Distribution of the frequency of treatment cells in the $2 \times 3 \times 2 \times 2 \times 2$ factorial design.

A14 Experimental Design Validation

A14.1 Compliance

With a relatively complex audit experiment and a large team of confederates, compliance with treatment assignment is a concern for the analysis and interpretation of findings. To address such concerns, all calls were recorded. Subsequent to the experiment, two trained research assistants listened to all the calls (a full time job for over a month) and marked what they heard in the calls. The research assistants were not apprised of the schedule of treatment assignment.[9] I examine compliance factor by factor in Table A12.

[9] Calls for 10 petitions were lost by the software doing the recordings. These calls represent less than 1% of the total calls and I have no reason to believe that the missingness is systematic.

Factor	Validation Data	Assignment	Coding in Validation data				% Compliers
Time	Phone log times		Morning	Afternoon	Mix with $\geq$ 1 intent		
		Morning	98.7%	0	1.3%		98.7%
		Afternoon	0.3%	98.0%	1.65%		98.0%
Accent	Double entry		Bogotá	Costeño	Paisa	Indeterminate	
		Bogotá	99.7%	0%	0%	0.3%	99.7%
		Costeño	0.3%	98.7%	0%	1.0%	98.7%
		Paisa	0.8%	0.5%	98.4%	0.3%	98.4%
Class	Double entry		Lower	Lower-Middle	Indeterminate		
		Lower	76.7%	11.2%	13.1%		76.7%
		Lower-Middle	6.7%	79.3%	14.0%		79.3%
Difficulty	Double entry		Technical	Easy			
		Technical	99.3%	0.7%			99.3%
		Easy	0.8%	99.2%			99.2%
Migrant	Double entry		Migrant	Resident			
		Migrant	97.3%	2.7%			97.3%
		Resident	5.0%	95.0%			95%

Table A12: Rates of compliance by treatment. Double entry refers to the hand coded data by outsiders listening to recordings after the fact. The phone log times were automatically recorded and outside the purview of confederates.

A14.2 Detection

Of the 1194 answered calls, bureaucrats appeared to detect six of the calls as audits, per the classification of double coders. These calls are detailed below. Note that all calls that were detected were detected prior to the statement of the petition. There are no systematic differences in detection by municipal population stratum (as defined in the sampling of municipalities) or destination of the calls (department). Further, there are no systematic differences in the characteristics of the petition or petitioner except that these calls occurred later in the sequence within a given *alcaldía*.

	Stratum	Department	Call Order	Program	Time	Accent	Class	Difficulty	Migrant
1	Large	Bogotá	4/6	MFA	PM	Costeño	Lower	Easy	Resident
2	Large	Bogotá	5/6	MFA	AM	Paisa	Lower	Easy	Migrant
3	Large	Cundinamarca	5/6	MFA	PM	Paisa	Lower-Middle	Technical	Migrant
4	Medium	Bolívar	4/4	SISBÉN	PM	Paisa	Lower-Middle	Technical	Resident
5	Small	Bolívar	2/2	MFA	PM	Costeño	Lower	Technical	Resident
6	Small	Cauca	2/2	SISBÉN	PM	Paisa	Lower-Middle	Technical	Resident

Table A13: This table documents the calls that were detected, as denoted by the double coders. Both calls detected in Bogotá were detected in the same locality (*alcaldía local*).

A14.3 Measuring Bureaucratic Effort from Responses

To measure whether providing more information corresponds to higher bureaucratic effort, I fit the following model:

$$\text{Ln(Minutes on call)}_{ipme} = \sum_{j \in \mathbf{Z}} \beta_j Z_i^j + \kappa_p + \psi_e + \epsilon_{ipme} \tag{8}$$

where ψ_e is an enumerator fixed effect. I then extract the estimated residuals, $\widehat{\epsilon}_{ipme}$ from this model.

Figure A12 plots the ECDFs residuals as a function of the information conveyed in response to a petition: full, partial, or no information. The graph indicates that the cumulative length of contact for petitions providing no information was substantially shorter than the length of those providing some information. On average, petitions receiving no information were 1.17 minutes shorter ($p < 0.01$) than calls providing partial information and 1.21 minutes ($p < 0.01$) shorter than calls providing complete answers. These differences represent effects of approximately 25 percent of the mean for calls with no information (4.63 minutes). Further, the crossing of the ECDFs for partial and complete information provide some evidence to adjudicate the competence vs. effort distinction between the two types of answers. It suggests that the difference between the two answers is not simply differential competence and that, in the upper median of the distribution, bureaucrats spent more time to provide a more complete answer. This is consistent with qualitative observations of confederates.

A14.4 Joint Test of Interactions between Identity Treatments

The empirical strategy employed in this paper analyzes "along the margins" of the factorial experimental design. In this section, I allay concerns of substitutability or complementarities between the identity-based

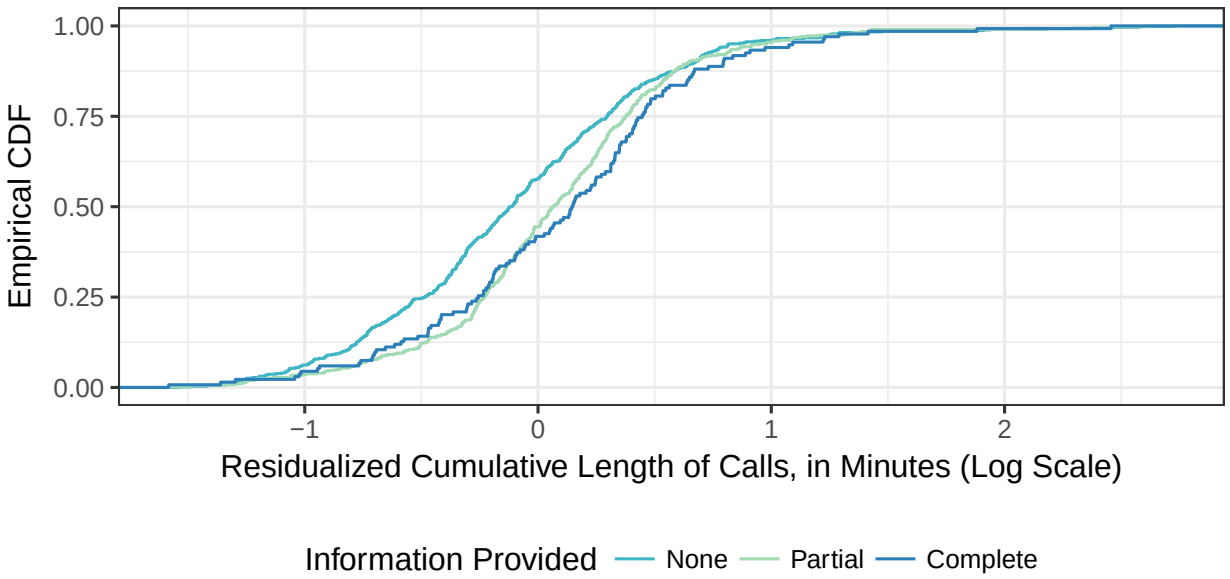


Figure A12: The distribution of residualized call lengths by the amount of information contained in the response. Calls that provided no information were uniformly shorter than calls with partial or complete responses. In the upper quantiles of the distribution, calls providing correct answers were longer than those providing partial information.

attributes used to measure bias. In this analysis, I utilize F-tests of the joint significance of the relevant interactions. To conduct this analysis, I use the IPW model from the main analysis as the restricted model:

$$Y_{ipm} = \sum_{j \in \mathbf{Z}} \beta_j Z_i^j + \kappa_p + \epsilon_{ipm} \tag{9}$$

I then specify an unrestricted model, as in Equation. Note that M_i indicates lower-middle class, R_i indicates a resident, B_i indicates a Bogotá accent, and C_i indicates a Costeño accent.

$$\begin{aligned} Y_{ipm} = \sum_{j \in \mathbf{Z}} \beta_j Z_i^j + \kappa_p + \chi_1 M_i R_i + \chi_2 M_i B_i + \chi_3 M_i C_i + \chi_4 R_i B_i + \chi_5 R_i C_i + \\ \chi_6 M_i R_i B_i + \chi_7 M_i R_i C_i + \epsilon_{ipm} \end{aligned} \tag{10}$$

I test the null hypothesis that $\chi_1 = \chi_2 = \chi_3 = \chi_4 = \chi_5 = \chi_6 = \chi_7 = 0$ using an F-test. The results of this test are reported in Table A14. I fail to reject the null hypothesis for 9/10 outcomes at the $\alpha = 0.1$ level, providing no evidence that of interactions between the identity-based treatments.

	N			
Outcome	Unrestricted	Restricted	F-statistic	p-value
Dispatcher Gave Name	1186	1179	0.17	0.99
Petition Made	1186	1179	0.43	0.88
Second Official	1186	1179	1.24	0.28
Program Officer	1186	1179	0.23	0.98
Complete	1186	1179	1.44	0.19
Incomplete	1186	1179	0.90	0.50
Any Info.	1186	1179	1.04	0.40
No Info.	1186	1179	1.24	0.28
Alcaldía Only	1186	1179	2.71	0.01
Red Tape	1186	1179	0.80	0.58

Table A14: Results of F-tests of the significance of interactions between identity-based characteristics for each of the main outcomes reported in Table 4.

A15 Administrative data Data

A15.1 Personnel Data

The data on local SISBÉN and MFA officials comes from two sources. First, I have a list of program officers furnished by PS (MFA) and downloaded from DNP (SISBÉN). Second, the list of names comes from the double entered calls. Enumerators wrote the names shared by officials. Most names in the administrative data contain four names, two first names and two last names, as is standard according to Colombian naming traditions.

The names from the calls are often much shorter (often one first name and one last name) and spelling is approximated by the research assistants. While most Spanish names are quite straightforward to spell, some Colombians have adopted English names. Spelling of these names varies substantially. For example, in my data the common name pronounced "Jason" (to an English speaker) is spelled "Jeison," "Jeisson," "Yeison," and "Yeisson." This poses a challenge for string matching. To maximize information before matching to the administrative datasets, I matched the listing of names from the calls to a full enumeration of local public servants andd contractors working in the *alcaldías*. The dataset on these bureaucrats dataset comes from the compilation of five administrative datasets, obtained by various means. Table A15 documents the datasets and how they were obtained.

Dataset	Population	Coverage (Experimental)	Method Obtained
SIGEP	Civil Servants	>800 municipalities	Obtained from Departamento Administrativo de la Función Pública by *derecho de petición* ($\approx$ FOIA request). Request granted in April 2018.
SIGEP	Civil Servants	798 employees in experimental *alcaldías*	Identified by hand search and scraped from online database, May 2018.
SIDEAP	Civil Servants	20 Bogotá *alcaldías locales*	Downloaded in April 2018.
SECOP-I	Contractors	1100 *alcaldías*, Metro SALUD Medellín	Downloaded in April 2018.
SECOP-II	Contractors	20 Bogotá *alcaldías*	Downloaded in April 2018.
SIDEAP	Contractors	Bogotá *alcaldías* (for cross-referencing)	Downloaded in April 2018.

Table A15: Administrative datasets, coverage, and method used to obtain the data.

At the aggregate level, this data overlaps with the experimental sample of 600 *alcaldías* and 18 *alcaldías locales* as follows. "No contractor data coverage" indicates that there are no current contracts (as of the experiment) in the system.

	Contractor Data Coverage (SECOP-I, SECOP-II)	
	Coverage	No Coverage
Civil Servant Coverage	550	22
No Civil Servant Coverage	40	6

To identify relevant personnel, I implemented a q-gram matching algorithm, selecting matches that maximize the number of common 3-grams within entity. I then revised the matches with the most q-grams in common by hand, applying a 90% (of the shorter name) threshold or a phonetic match (i.e. the multiple spellings of "Jason") to identify employees. I code an indicator for a match between the double-entered name and the program official's name in the administrative data from PS and DNP as a measure for whether callers reached a program official in the *alcaldía*.

A15.2 Demographic Data

The demographic data, measured at the municipal level, that is used in analyses come from:

- Population projections as of 2018. I use DANE's 2018 population projections for municipalities and the Alcaldía Mayor's projections of Bogotá's population, by locality, in 2018.
- Census of 2005: Municipal education levels and municipal multidimensional poverty index.
- Census microdata: Rates of migration are obtained from all census microdata available through IPUMS.
- SISBÉN registrations: Data downloaded from SISBÉN's open data as of November, 2017. Available at `https://www.sisben.gov.co/Territorios/Paginas/Reportes%20Base%20Certificada/ano2018.aspx`.
- Population of internally displaced persons (IDPs), by municipality. I obtain data on the number of IDPs per municipality from Unidad de Victímas as of July 1, 2018. Available at `http://cifras.unidadvictimas.gov.co/Home/Desplazamiento`.

A15.3 Electoral Data

Election data comes from the dataset at Universidad de los Andes. This data is compiled from the Registraduría Nacional del Estado Civil by the Centro de Estudios sobre Desarollo Económico. All candidates in municipal elections are available since 1997. I examine on the municipal elections of 1997, 2000, 2003, 2007, 2011, and 2015.

Extreme weakness of parties and and limited serial correlation render standard measures of competitiveness poor measures. The serial correlation between mayoral margins of victory at time $t-1$ and t are depicted in Figure A13.

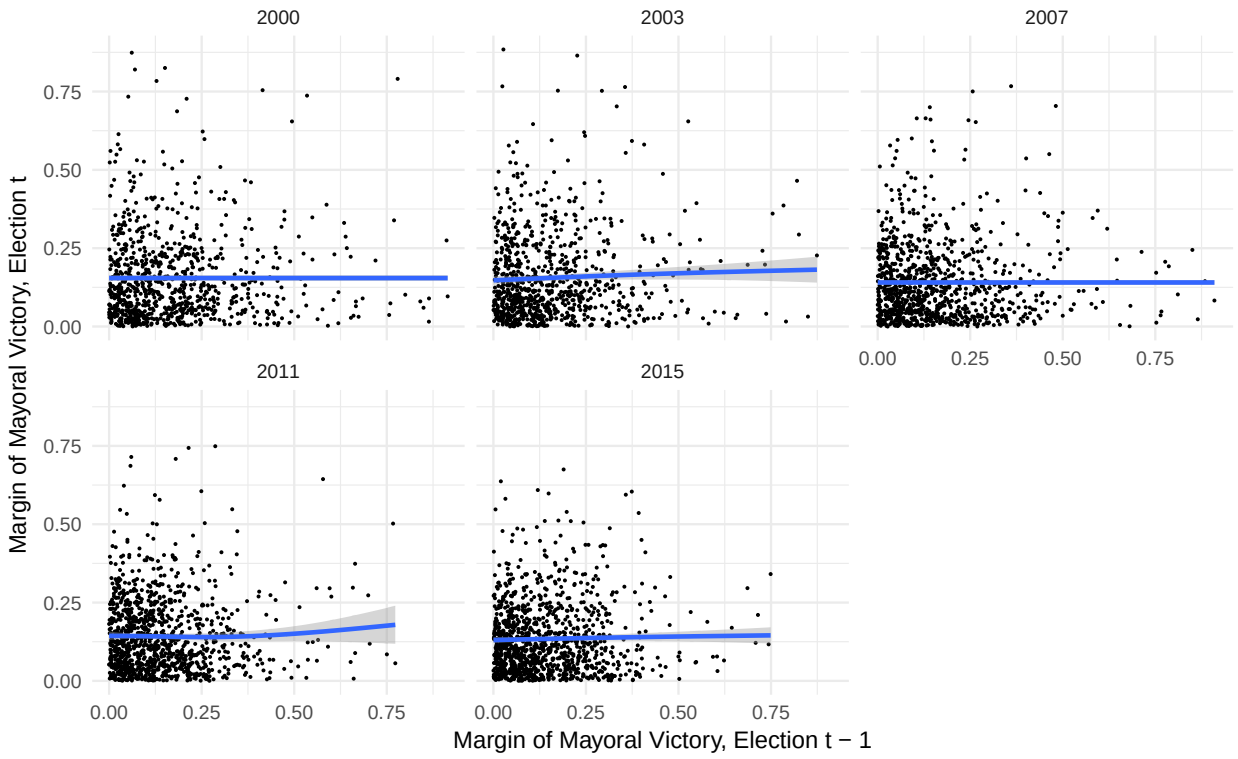


Figure A13: There is effectively no correlation between mayoral margin of victory at time $t-1$ and time t. Each point represents a municipality. The lines are fit with GAM.

Instead I use three measures of municipal political competition from both local mayoral and council elections. The measures based on the names of concejales (who are not term limited) are modern analogues to historical measures by Acemoglu et al. (2008).

- Mayoral election effective number of candidates (ENC). This measure is increasing in competitiveness. It is calculated via the following formula, where i index candidates and p_i is each candidate's vote share.

$$ENC = \frac{1}{\sum_{i=1}^{n} p_i^2}$$

- Number of unique council members since 1997. Council members are not term limited. This is calculated by the following formula.

$$\text{Ratio of Unique Concejales} = \frac{\#\text{ Unique winners, 1997-2015}}{\#\text{ Council seats, 1997-2015}}$$

- The Colombian naming tradition is to give a child two last names. The first is the father's first last name; the second is the mother's first last name. Most candidates use both last names. To measure concentration of power by family, I examine the ratio of unique last names to total last names ($\approx 2\times$ number of candidates).

$$\text{Ratio of Unique Family Names} = \frac{\#\text{ Unique last names of concejales, 1997-2015}}{\#\text{ Total last names of concejales, 1997-2015}}$$

I also consider two measures of incumbent mayor partisanship/ideology using data from Fergusson et al. (2021). These authors code the ideology of Colombian parties as "left," "right," "neither," or "unidentified" (the ideological placement information was not found for the party). In recent election cycles, an increasing number of mayoral candidates have run without the label of an established party by collecting signatures. These candidates are classified in the data as "unidentified." Table A16 shows that the distribution of this ideological classification in three samples: (1) all municipalities; (2) municipalities in the experimental sample; and (3) calls in the experimental sample (given the different number of calls attempted in municipalities of different sizes). Note that the distributions are quite similar across samples, even though municipalities were not sampled with equal probability and that large municipalities had a larger number of calls. One last note is that there are very few identifiable mayors from the left (under this classification) in sample.

Ideology	All municipalities	Municipalities in sample	Calls
Left	1.5%	1.7%	1.8%
Neither	49.3%	46.0%	43.7%
Right	19.6%	21.2%	20.1%
Unidentified	29.6%	31.0%	34.3%

Table A16: Proportion of mayors by party ideology during the 2016-2019 term.

I code two indicator variables from this data:

- Classifiable mayors: an indicator for "left," "right," or "neither" captures municipalities governed by mayors from established parties.
- Right mayors: an indicator for "right" mayors. Note this analysis is constrained by the relatively small number of identifiably right-wing mayors.

A16 Sample Selection

As indicated in Table 3, I estimate the bias outcomes on the sample of answered calls. While the blocking scheme ensures balance across municipalities and within the sample of calls, it is worth assessing whether or not the resultant sample is imbalanced across the experimental factors. This is assessed through an F-test of the joint significance of the four unrevealed factors: class, accent, migrant status, and question difficulty.

I show in Table A17 that there is no evidence that entering this sample (Columns 3-4) is endogenous to the unrevealed factors. The test of this claim is the F-test on the placebos, for each estimator. Further, Columns 1-2 and 5 show that the unrevealed factors do not predict how soon or late a call was answered. In sum, there is no evidence that answering is endogenous to any of the analyzed treatments.

	Did not Answer First Call		Did not Answer Any Calls		Number of Calls
	(1)	(2)	(3)	(4)	(5)
Afternoon Call	0.031*	0.022	0.039**	0.030**	0.291*
	(0.023)	(0.018)	(0.023)	(0.015)	(0.188)
DV mean, Morning	0.639	0.639	0.330	0.330	4.48
Estimator	OLS	OLS	OLS	OLS	Tobit
IPW	✓		✓		✓
Entity, Enumerator FE		✓		✓	
Program Indicator	✓	✓	✓	✓	✓
Placebos	✓	✓	✓	✓	✓
Placebo F-test*, p-value	0.898	0.381	0.705	0.163	0.619
Hypothesis test	Upper	Upper	Upper	Upper	Upper
DV range	{0, 1}	{0, 1}	{0, 1}	{0, 1}	[1,7]
Censoring					Right
Observations	1,836	1,836	1,836	1,836	1,836

Note: *p<0.1; **p<0.05; ***p<0.01

Table A17: The AMCEs of an afternoon call on measures of absenteeism of the dispatcher. Six calls were attempted over the course of at least three days; Columns 3-4 indicate that none of the six calls were answered. Heteroskedasity-robust standard errors for the OLS models in parentheses. *For the tobit model, the p-value on the test of joint significance of the placebos is calculated from a Pearson χ^2 likelihood ratio test. The mean outcome in the morning in the fifth column refers to the latent outcome and is estimated by tobit.

A17 Robustness of Bias Estimates

A17.1 Complier AMCE Estimates for the Class Treatment

The results on the class treatment are central to findings of bias. There are two main concerns about this treatment, with responses below.

1. Can people judge a caller's class by voice alone?
    - The results from the double coding of compliance in Table A12 suggest as much: 77.5% of calls were correctly identified; 13.5% were indeterminate; and only 9% were opposite of the assignment indicator.
2. Class is a compound treatment in any case in Colombia. The scripts that distinguish the classes include different salutations, different vocabularies, and different presentation of the question.
    - The pervasiveness of social class in the Colombian context is important; isolating class from its correlates or constituent parts is not particularly feasible, nor is it particularly useful in this context.

- The results show that class-based bias happens in certain processes and not others. There is no evidence that bureaucrats did not understand questions from poor petitioners, as rates of correct responses are not substantially different between lower- and lower-middle class Colombians. These facts suggest that there was no systematic response to the characteristics used to connote class.

To test further concerns about the excludability of treatment assignment in Table A18, I estimate complier AMCEs on the class treatment, instrumenting an observed lower-middle class exchange with assignment to the lower-middle class treatment condition. If results are driven by perceptions of class and coder ratings of class are correlated with how bureaucrats perceived class, then (non-zero) point estimates of complier AMCEs should be higher than intent-to-treat AMCEs. I report the class estimates from Table 4 (Panels A and B) in the main text along their complier analogues.

Note that this test serves as an informal test of excludability. It is also possible that if some characteristic driving the results that is highly positively correlated with observer judgments of class is driving bias in behavior, the complier estimates would be higher than the intent-to-treat estimates. All of the point estimates on the outcomes where there is evidence for bias in the ITT AMCE estimates in Table 4 in the main text increase in magnitude.

A17.2 Regional Accent and Red Tape Robustness Test

Table 4 documents the disproportionate rate at which red tape was demanded from petitioners with a Paisa regional accent. Because the regional accent did not vary within an enumerators' calls, I conduct tests that drop enumerators one by one as well as in trios (one enumerator per accent) to examine the robustness of this finding. Figures A14 and A15 show the point estimates when dropping one enumerator and one trio of enumerators, respectively. They suggest that the inference is generally robust and that the effect does not seem to be driven by any single enumerator or pair/trio of enumerators.

	Access/Process					Response to Petition				
	Dispatcher Gave Name	Petition Made	Second Official	Program Officer	Complete	Incomplete	Any Info.	Red Tape	*Alcaldía* Only	extra
PANEL A: INTENT-TO-TREAT AMCE ESTIMATES, IPW ADJUSTMENT										
Lower-Middle Class	0.011	0.014	0.017	0.044	0.021	0.048*	0.069**	−0.019	−0.036**	0.003
	(0.020)	(0.025)	(0.029)	(0.028)	(0.018)	(0.029)	(0.029)	(0.021)	(0.017)	(0.024)
PANEL B: COMPLIER AMCE ESTIMATES, IPW ADJUSTMENT										
Lower-Middle Class	0.028	0.019	0.033	0.069	0.035	0.065	0.100**	−0.028	−0.053**	0.003
	(0.028)	(0.037)	(0.044)	(0.042)	(0.027)	(0.043)	(0.043)	(0.031)	(0.025)	(0.036)
PANEL C: INTENT-TO-TREAT AMCE ESTIMATES, ENTITY FIXED EFFECTS										
Lower-Middle Class	−0.015	0.016	−0.004	0.049*	0.024	0.057**	0.081***	−0.027	−0.039**	0.002
	(0.019)	(0.025)	(0.028)	(0.025)	(0.019)	(0.028)	(0.028)	(0.021)	(0.017)	(0.026)
PANEL D: COMPLIER AMCE ESTIMATES, ENTITY FIXED EFFECTS										
Lower-Middle Class	0.002	0.028	0.009	0.083**	0.038	0.087**	0.125***	0.006	−0.055**	0.006
	(0.025)	(0.036)	(0.041)	(0.037)	(0.028)	(0.040)	(0.040)	(0.037)	(0.025)	(0.037)
Mean DV, Paisa Accent	0.842	0.723	0.53	0.296	0.119	0.414	0.533	0.124	0.066	0.266
All Factors	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
DV range	{0, 1}	{0, 1}	{0, 1}	{0, 1}	{0, 1}	{0, 1}	{0, 1}	{0, 1}	{0, 1}	{0, 1}
Observations	1,194	1,194	1,194	1,194	1,194	1,194	1,194	1,194	1,194	1,194

Note: *p<0.1; **p<0.05; ***p<0.01

Table A18: Estimates of the intent-to-treat and complier AMCEs of the class treatment. Heteroskedasticity robust standard errors in parentheses. "Observed" indicates that the accent was observed by double coders that listened to all call recordings.

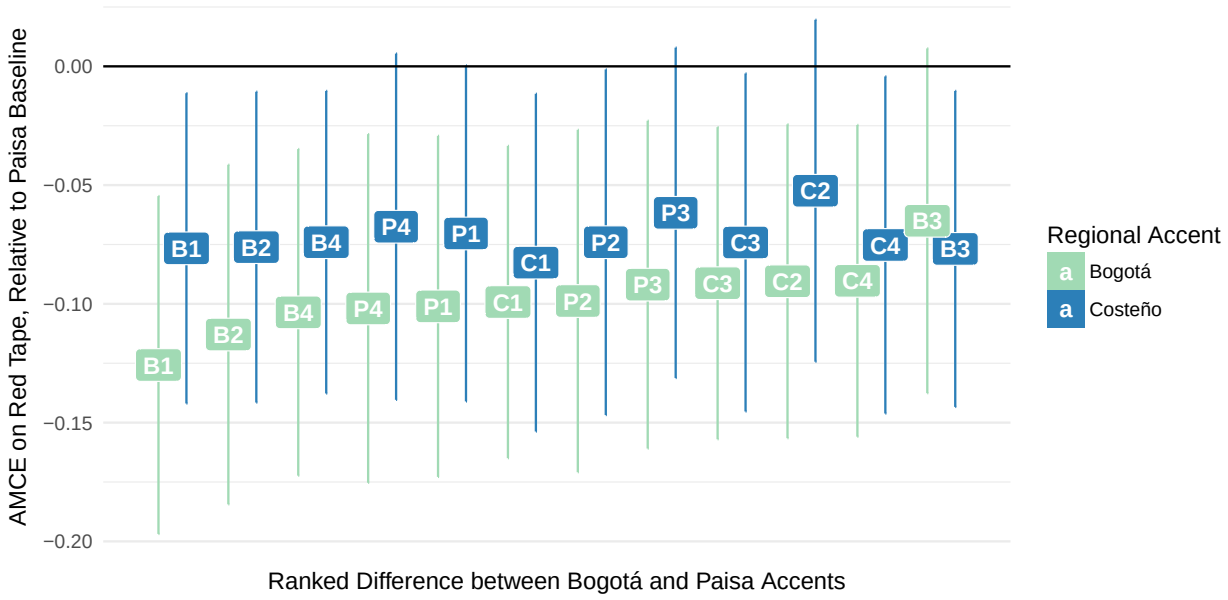


Figure A14: AMCE of Bogotá and Costeño accents relative to a Paisa accent when dropping one enumerator. The enumerator codes are labeled on the points and indexed by accent ("B", "C", or "P") and number. The bars indicate 95% confidence intervals calculated on heteroskedasticity-robust standard errors.

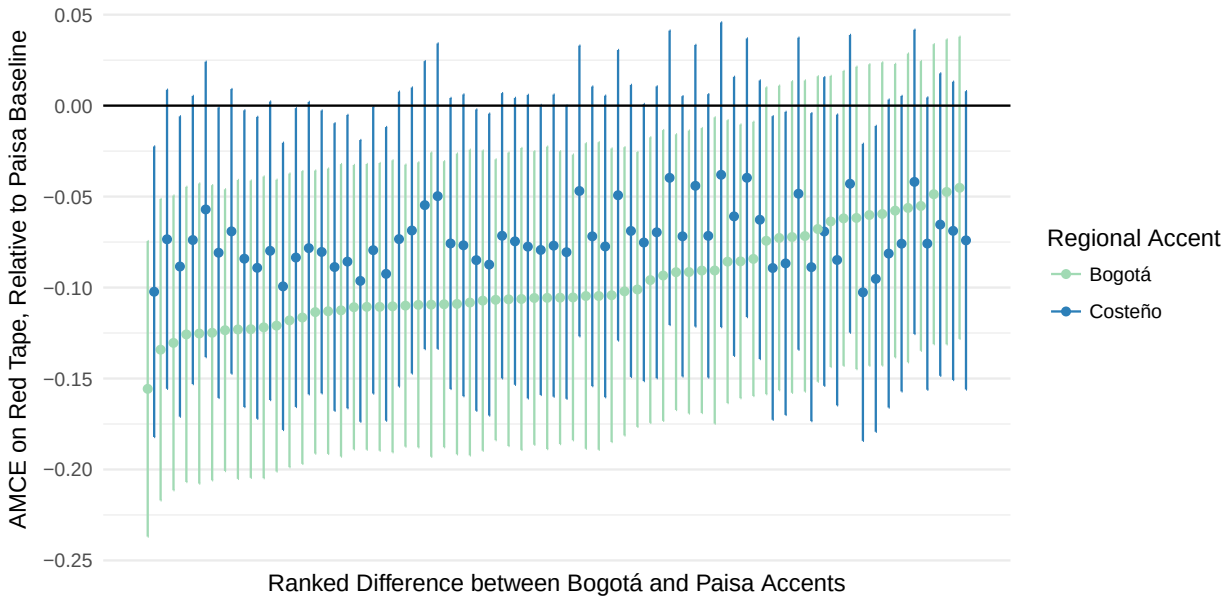


Figure A15: AMCE of Bogotá and Costeño accents relative to a Paisa accent when dropping each permutation of three enumerators (one per accent). Note that by dropping three enumerators simultaneously, the effective sample is approximately 75% of the main sample reported in Table 4, inflating standard error estimates accordingly. The bars indicate 95% confidence intervals calculated on heteroskedasticity-robust standard errors.

A17.3 Regional Accents in Home Region

In the main results, I analyze regional accents without regard to the match between the accent of the petitioner and the accent native to the municipality where the audit was conducted. This analysis redefines the treatment indicator for accent as being an "in-region" (home) accent. Because the experimental accent treatment only includes 3 of $\approx$ 12 regional accents, I subset to the regions of Colombia in which there is common support for the treatment. Table A19 clarifies the definition of the region for purposes of analysis as well as the total number of petitions in the subsample. In sum, this sample represents about 55% of all answered calls.

				n of Petitions	
Accent	Region	Departments	Total	"In-region"	"Out-region"
Bogotá	Centro Oriente (subset)	(Bogotá) Cundinamarca	198	65	133
Costeño	Caribe	Atlántico Bolívar Cesar Córdoba La Guajira Magdalena San Andrés Sucre	189	58	131
Paisa	Eje Cafetero - Antioquia	Antioquia Caldas Quindío Risaralda	270	85	185

Table A19: Definition of regions for the analysis of "in-region" accents. The sample from which these municipalities are drawn is the 1194 answered calls. Note that by construction, $\frac{1}{3}$ of calls should be "in-region"; this proportion is maintained in this subsample.

With both adjustment strategies (IPW and entity fixed effects), the region indicator is interacted with all factors and an indicator for the program. Results are reported in Table A20. The main takeaways are as follows:

- We cannot reject the null hypothesis that the conditional AMCE = 0 for the pooled subsample or any subgroup therein.
- For some outcomes, there are statistically significant differences between regions. If anything, these differences seem to be driven by the fact that, Costeño confederates seem to receive slightly "worse" service "in region" in the Atlantic Coast (Caribe). This was not anticipated.

A17.4 Migrant Status in the "Call Answered" and "Petitioned" Samples

Migrant status was not revealed until petitions were made (see Table 3), however the main analysis analyzes outcomes based on migrant status within the sample of all answered calls (Table 6). This serves to inflate the

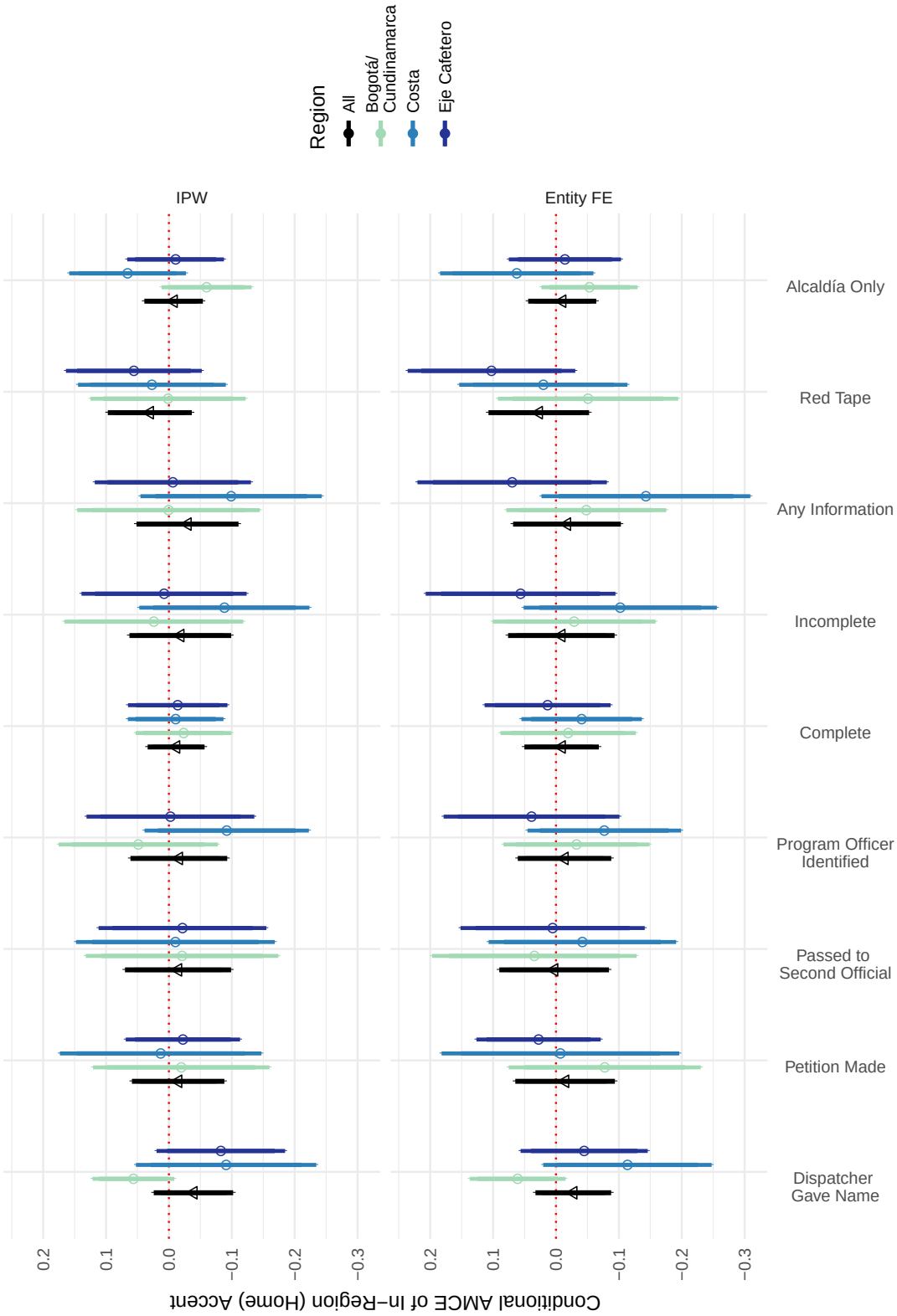


Table A20: Estimates of the conditional AMCE of an "in region" accent petition. Bars represent 95% confidence intervals constructed on heteroskedasticity robust standard errors. The panels correspond to the adjustment strategy used in estimation.

effective rate of noncompliance for the migrant factor. This attenuates the resultant intent-to-treat estimates. The F-tests in Tables 4 and 6 (columns 1-4) suggest that there is no reason to believe that migrant status was revealed prior to the petition. As such, the estimates in the smaller sample should be larger in magnitude than those in the main text. Table A21 supports this interpretation.

	Response to Petition									
	Complete		Incomplete		Any Info.		Red Tape		*Alcaldía* Only	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
PANEL A: IPW ESTIMATES										
Migrant	−0.002	−0.003	−0.027	−0.054	−0.029	−0.057*	−0.036	−0.049	0.054***	0.070***
	(0.017)	(0.021)	(0.029)	(0.033)	(0.029)	(0.030)	(0.024)	(0.030)	(0.017)	(0.021)
PANEL B: ESTIMATES WITH ENTITY FIXED EFFECTS										
Migrant	0.003	−0.003	−0.044	−0.065*	−0.041	−0.067**	−0.041	−0.033	0.061***	0.081***
	(0.018)	(0.025)	(0.028)	(0.035)	(0.028)	(0.032)	(0.026)	(0.034)	(0.017)	(0.023)
PANEL C: ESTIMATES WITH ENTITY + ENUMERATOR FIXED EFFECTS										
Migrant	0.002	0.0003	−0.043	−0.063*	−0.041	−0.063**	−0.040	−0.029	0.061***	0.077***
	(0.018)	(0.026)	(0.028)	(0.035)	(0.028)	(0.032)	(0.026)	(0.035)	(0.017)	(0.023)
Mean DV, Resident	0.102	0.135	0.447	0.592	0.731	0.713	0.252	0.334	0.061	0.081
Program	✓	✓	✓	✓	✓	✓	✓	✓	✓	
All Factors	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
DV range	{0, 1}	{0, 1}	{0, 1}	{0, 1}	{0, 1}	{0, 1}	{0, 1}	{0, 1}	{0, 1}	{0, 1}
Sample	Answered	Petitioned	Answered	Petitioned	Answered	Petitioned	Answered	Petitioned	Answered	Petitioned
Observations	1,194	911	1,194	911	1,194	911	1,194	911	1,194	911

Note: *p<0.1; **p<0.05; ***p<0.01

Table A21: Estimates of the AMCEs of the migrant treatment on both the call answered subsample from the main text as well as the petitioned sample. Heteroskedasticity robust standard errors in parentheses.

A17.5 Survey Outcomes

In this section, I examine the responses of enumerators to survey questions about their experience of each call. The survey consisted of five questions, translated to English as follows:

1. *Satisfaction:* On a scale from 1 to 5, where 1 is "not at all satisfied" and 5 is "very satisfied," how satisfied are you with the service given by the public servant during the call?

2. *Confidence (in answers):* On a scale from 1-4, where 1 is "not confident" and 4 is "very confident," how much confidence did you have in the responses given by the public servant?

3. *Actionable information:* On a scale from 1 to 5, where 1 is "very easy" and 5 is "very difficult," how hard would it be to carry out the process (service) you asked about on the basis of the information you received?

4. *Knowledge:* On a scale from 1 to 5, where 1 is "very low" and 5 is "very high," what level of knowledge did the public servant have when responding to the request?

5. *Respect:* On a scale from 1 to 5, where 1 is "very little respect" and 5 is "lots of respect," how respectful was the public servant while responding to the request?

Due to an issue in the programming of the survey, responses are missing for 59/1194 answered calls and 30/911 of the calls in which a petition was made. In these cases, the survey did not appear at the end of data input. The differential proportions of missing survey responses indicate that this error occurred as part of the sequence in the survey. This may be endogenous to some of the experimental manipulations, if through the trajectory of the call. However, missingness is balanced across the factors.

My main measure of service provision is a z-score index comprising the five measures enumerated above. Component # 3 is reversed such that higher scores on the scale map onto higher values of the index (better service). I also report the standardized measure of respect given arguments made in the paper. Estimates of AMCES of the experimental manipulations on these outcomes are reported in Table A22.

Note that the enumerator effects reported seem to correspond to idiosyncracies in how individual enumerators assess service. The estimates are *not* robust to dropping one enumerator at a time. I focus on the within-enumerator estimates in columns (3) and (6) of both panels as the main measure of the relationship between petition and petitioner attributes and service provision.

	Dependent variable:					
	Service Index (Standardized)			Respect (Standardized)		
	(1)	(2)	(3)	(4)	(5)	(6)
PANEL A: CLASS AND ACCENT ON ANSWERED CALLS SUBSAMPLE						
Lower Middle Class	0.109**	0.110**	0.096**	0.020	0.010	0.002
	(0.047)	(0.047)	(0.045)	(0.059)	(0.061)	(0.058)
Bogotá Accent	0.287***	0.226***		0.238***	0.191**	
	(0.058)	(0.063)		(0.075)	(0.081)	
Costeño Accent	0.062	0.064		−0.297***	−0.305***	
	(0.059)	(0.063)		(0.079)	(0.084)	
DV mean, Lower Class	-0.052	-0.052	-0.052	-0.006	-0.006	-0.006
DV mean, Paisa	-0.106	-0.106	-0.106	0.033	0.033	0.033
DV Range	[-2.957, 1.904]	[-2.957, 1.904]	[-2.957, 1.904]	[-3.767, 1.263]	[-3.767, 1.263]	[-3.767, 1.263]
Observations	1,135	1,135	1,135	1,135	1,135	1,135
PANEL B: MIGRANT STATUS AND QUESTION DIFFICULTY ON PETITION SUBSAMPLE						
Migrant	0.060	0.085	0.085	0.109*	0.143**	0.125*
	(0.049)	(0.057)	(0.055)	(0.061)	(0.072)	(0.071)
Technical Petition	−0.128**	−0.110*	−0.117**	−0.124**	−0.107	−0.114
	(0.050)	(0.058)	(0.056)	(0.063)	(0.075)	(0.072)
DV mean, Easy	-0.052	-0.052	-0.052	-0.006	-0.006	-0.006
DV mean, Resident	0.062	0.062	0.062	-0.003	-0.003	-0.003
DV Range	[-2.957, 1.904]	[-2.957, 1.904]	[-2.957, 1.904]	[-3.767, 1.263]	[-3.767, 1.263]	[-3.767, 1.263]
Observations	881	881	881	881	881	881
Estimator	IPW	Entity FE	Entity, Enum. FE	IPW	Entity FE	Entity, Enum. FE
Program	✓	✓	✓	✓	✓	✓
All Factors	✓	✓	✓	✓	✓	✓
Note:						*p<0.1; **p<0.05; ***p<0.01

Table A22: The AMCEs of treatment conditions on enumerators' perceived treatment and service by bureaucrats. The outcome for columns 1-3 (both panels) is a Z-score index of five attributes of service. The outcome for columns 4-6 is the standardized "respect" component of that index. Heteroskedasticity-robust standard errors in parentheses.

A18 Supporting Tables for Tests of the Mechanism

This section provides tables to support the graphical analysis in Section 6 of the main text. The first tests examine the cost of effort and employee type (contractor/civil servant). For covariates with within-*alcaldía* variation, I do not run the specification with *alcaldía* fixed effects, since this reduces the effective sample dramatically. Instead, I run a second specification with indicators for stratum (to account for differential probabilities of assignment) and enumerator.

A18.1 Distinguishing Bureaucrat Taste-Driven from Oversight-Driven Bias

Table A23 shows that bias in information provision by class was attenuated to zero on technical questions. While the interaction is not generally significant, differences are quite stark. Note, however, that the theory implies a one-tailed test while the table reflects (conservative) two-tailed p-values.

	Complete	Incomplete	Any Info.	Alcaldía Only	Red Tape
	(1)	(2)	(3)	(4)	(5)
PANEL A: CONDITIONAL AMCE BY DIFFICULTY OF PETITION; IPW ESTIMATES					
Lower-Middle Class	0.039	0.080**	0.118***	−0.040***	0.036
	(0.026)	(0.038)	(0.038)	(0.015)	(0.034)
Hard: Lower-Middle Class	−0.034	−0.067	−0.101*	0.009	−0.064
	(0.035)	(0.057)	(0.058)	(0.034)	(0.048)
Conditional Effect, Technical Petition	0.004	0.013	0.017	-0.031	-0.029
	(0.023)	(0.042)	(0.044)	(0.030)	(0.034)
PANEL B: CONDITIONAL AMCE BY DIFFICULTY OF PETITION; STRATUM + ENUMERATOR FE					
Lower-Middle Class	0.030	0.068*	0.098***	−0.037**	0.030
	(0.026)	(0.037)	(0.038)	(0.015)	(0.034)
Hard: Lower-Middle Class	−0.021	−0.049	−0.070	0.004	−0.054
	(0.034)	(0.056)	(0.057)	(0.034)	(0.048)
Conditional Effect, Technical Petition	0.010	0.019	0.029	-0.033	-0.024
	(0.023)	(0.042)	(0.043)	(0.030)	(0.033)
Observations	1,194	1,194	1,194	1,194	1,194

Note: *p<0.1; **p<0.05; ***p<0.01

Table A23: Estimates of the conditional AMCE of a lower-middle class petitioner by the difficulty of the question. The base category is the "easy"/inscriptions questions. The experimental treatment technical petition is interacted with all factors and a program indicator. "Conditional effect" refers to the conditional effect of lower-middle class. Heteroskedasticity- robust standard errors in parentheses.

Table A24 shows that bias in information provision by class was attenuated to zero for MFA petitions. While the interaction is not generally significant, differences are large and robust to different estimators. Note that the theory implies a one-tailed test while the table reflects (conservative) two-tailed p-values.

	Complete	Incomplete	Any Info.	Alcaldía Only	Red Tape
	(1)	(2)	(3)	(4)	(5)
PANEL A: CONDITIONAL AMCE BY DIFFICULTY OF PETITION; IPW ESTIMATES					
Lower-Middle Class	0.003	0.030	0.033	−0.021	0.019
	(0.021)	(0.040)	(0.041)	(0.020)	(0.031)
SISBÉN: Lower-Middle Class	0.036	0.031	0.067	−0.029	−0.034
	(0.035)	(0.057)	(0.058)	(0.033)	(0.049)
Conditional Effect, SISBÉN	0.039	0.061	0.100**	-0.050*	-0.015
	(0.028)	(0.041)	(0.041)	(0.026)	(0.037)
PANEL B: CONDITIONAL AMCE BY DIFFICULTY OF PETITION; STRATUM + ENUMERATOR FE					
Lower-Middle Class	0.007	0.022	0.029	−0.019	0.019
	(0.020)	(0.039)	(0.040)	(0.019)	(0.031)
SISBÉN: Lower-Middle Class	0.028	0.047	0.075	−0.032	−0.029
	(0.035)	(0.056)	(0.057)	(0.031)	(0.048)
Conditional Effect, SISBÉN	0.035	0.069*	0.104***	-0.051**	-0.010
	(0.029)	(0.040)	(0.040)	(0.025)	(0.037)
Observations	1,194	1,194	1,194	1,194	1,194
Note:					*p<0.1; **p<0.05; ***p<0.01

Table A24: Estimates of the conditional AMCE of a lower-middle class petitioner by the audited program (MFA or SISBEÉN). The base category is MFA. The program indicator is interacted with all factors in the experimental design. "Conditional effect" refers to the conditional effect of lower-middle class. Heteroskedasticity-robust standard errors in parentheses.

A18.2 Isolating Complaint-Driven Bias

Table A25 examines the conditional effect of class by level of municipal poverty. Panels A and B show the estimates using both of the main estimators in the manuscript. Panels C and D demonstrate that these findings are robust to the use of flexible, interactive controls for municipal population.

One alternative explanation for the positive association between class-bias and poverty rate is clientelism. I conduct three tests to show that the evidence is inconsistent with this explanation. First, I show that levels of service given to the lower middle class do not vary in municipal poverty rates. If a politician were simply co-opting a social program to devote services clentelistically as in Weitz-Shapiro (2012), we would expect lower levels of service by bureaucrats across the board (e.g. even for the lower middle class). If this happens disproportionately in poor places, then there should be a negative association between municipal poverty rates and service outcomes for the lower middle class. Table A26 indicates that this is not the case. There is little evidence of a correlation, and if anything, there is weak evidence of a a *positive* correlation between municipal poverty and information provision. This correlation is not robust to alternate functional forms (Panel B) or to dropping Bogotá (Panels C-D), which accounts for a disproportionate share of observations. This provides no evidence in favor of a clientelism explanation for observed findings.

	Complete	Incomplete	Any Info.	Alcaldía Only	Red Tape
	(1)	(2)	(3)	(4)	(5)
PANEL A: CONDITIONAL AMCE BY TERCILE OF POVERTY RATE; IPW ESTIMATES					
Lower-Middle Class	0.013	−0.024	−0.011	−0.027	−0.007
	(0.029)	(0.046)	(0.051)	(0.028)	(0.045)
Medium Poverty: Lower-Middle Class	0.019	0.085	0.105	−0.025	0.062
	(0.042)	(0.067)	(0.070)	(0.043)	(0.062)
High Poverty: Lower-Middle Class	0.001	0.139**	0.139**	−0.012	−0.032
	(0.045)	(0.066)	(0.070)	(0.040)	(0.060)
Conditional Effect in M	0.032	0.061*	0.094**	-0.051*	0.055*
	(0.028)	(0.047)	(0.046)	(0.034)	(0.039)
Conditional Effect in H	0.014	0.115***	0.128***	-0.038*	-0.039
	(0.035)	(0.045)	(0.044)	(0.026)	(0.040)
PANEL B: CONDITIONAL AMCE BY TERCILE OF POVERTY RATE; ENTITY + ENUMERATOR FE					
Lower-Middle Class	0.019	−0.024	−0.005	−0.020	−0.013
	(0.036)	(0.050)	(0.053)	(0.030)	(0.054)
Medium Poverty: Lower-Middle Class	0.025	0.091	0.117	−0.039	0.080
	(0.051)	(0.077)	(0.077)	(0.050)	(0.074)
High Poverty: Lower-Middle Class	−0.001	0.151**	0.150**	−0.030	−0.033
	(0.057)	(0.077)	(0.076)	(0.048)	(0.075)
Conditional Effect in M	0.044	0.067	0.111**	-0.058*	0.067*
	(0.037)	(0.061)	(0.060)	(0.042)	(0.054)
Conditional Effect in H	0.018	0.127**	0.145***	-0.050*	-0.047
	(0.048)	(0.060)	(0.059)	(0.039)	(0.056)
PANEL C: CAMCE BY TERCILE OF POVERTY RATE WITH INTERACTIVE POPULATION CONTROL; IPW ESTIMATES					
Lower-Middle Class	0.010	0.019	0.029	−0.033	0.004
	(0.036)	(0.056)	(0.056)	(0.036)	(0.058)
Medium Poverty: Lower-Middle Class	0.028	0.037	0.065	−0.012	0.054
	(0.052)	(0.080)	(0.081)	(0.056)	(0.077)
High Poverty: Lower-Middle Class	−0.009	0.111	0.102	−0.005	−0.034
	(0.053)	(0.082)	(0.082)	(0.057)	(0.083)
Conditional Effect in M	0.039*	0.056	0.095**	-0.045*	0.057*
	(0.031)	(0.050)	(0.047)	(0.036)	(0.040)
Conditional Effect in H	0.001	0.130***	0.131***	-0.038	-0.030
	(0.036)	(0.048)	(0.049)	(0.032)	(0.048)
Interactive Population Decile Bins	✓	✓	✓	✓	✓
PANEL D: CAMCE BY TERCILE OF POVERTY RATE WITH INTERACTIVE POPULATION CONTROL; ENTITY + ENUMERATOR FE					
Lower-Middle Class	0.023	−0.003	−0.011	−0.030	−0.020
	(0.045)	(0.069)	(0.062)	(0.041)	(0.072)
Medium Poverty: Lower-Middle Class	0.028	0.054	0.113	−0.021	0.087
	(0.065)	(0.096)	(0.083)	(0.062)	(0.094)
High Poverty: Lower-Middle Class	−0.028	0.146	0.159*	−0.017	−0.021
	(0.071)	(0.105)	(0.093)	(0.067)	(0.107)
Conditional Effect in M	0.051*	0.051	0.101**	-0.051	0.067*
	(0.040)	(0.065)	(0.060)	(0.045)	(0.053)
Conditional Effect in H	-0.005	0.144**	0.147**	-0.048	-0.041
	(0.049)	(0.065)	(0.063)	(0.044)	(0.065)
Interactive Population Decile Bins	✓	✓	✓	✓	✓
Observations	1,194	1,194	1,194	1,194	1,194
Note:					*p<0.1; **p<0.05; ***p<0.01

Table A25: Estimates of the conditional AMCE by tercile of poverty. The base category is the first tercile (lowest rate of poverty). All covariates and moderators (poverty tercile indicator and demeaned poverty decile bins) are interacted across all factors in the design. Standard errors are clustered at the municipality level since this is the level of measurement of the poverty moderator.

Second, I draw on documentation of clientelism in Colombia to identify variation in the presumed intensity of clientelism across municipalities. I show that the positive association between class-bias and poverty rate is robust to controlling interactively for these measures. The tests are as follows. First, I show that there is no association between documented threats to electoral integrity. These threats include clientelism, fraud, intimidation, and electoral violence. To the extent that an emerging literature on clientelism suggests that clientelism includes both "carrots" and "sticks," this provides a measure of both instruments (Mares and Young, 2018). Using data from the Misión de Observacion Electoral in Colombia, I control for a binary indicator for a general predicted threat to the 2018 national elections (Misión de Observación Electoral, 2018). Where a threat is identified, I code this variable as a "1." This creates two categories, which I demean and interact across all factors and the program indicator. Panels A and B of Table A27 suggest that results are not sensitive to estimating effects within levels of electoral threat.

Writing on clientelism in Colombia suggest that clientelism is practiced in distinct patterns in different regions (Ocampo, 2014). To account for these patterns, I include interactive department ($n = 30$) fixed effects in Panels C and D of Table A27. Note that some departments have few municipalities and few calls, so Panel D, in particular represents a subset of the sample in departments where there is variation in both population category within department. Nevertheless, results are consistent with the broader patterns documented in the main text and in Table A25. These analyses provide no evidence that clientelism is driving the observed association between poverty and bias.

Figures A16 and A17 show no evidence in variation in class-based bias as a function of local political competition or mayor ideology. Figure A16 shows plots analogous to those on municipal poverty except with three competition measures as moderators. The left column uses the ratio of unique councilors to total councilors (1997-2015); the middle column uses the effective number of mayoral candidates in the last 3 elections; and the last column uses an inverse covariance weighted index of the first two plus unique last names (*apellidos*) over council elections from 1997-2015.

Figure A17 plots coefficients interactive specifications for both the competition and ideology variables. There is no evidence of heterogeneity in the magnitude of class-driven bias as a function of these political features that may capture the tastes of the politician.

	Complete	Incomplete	Any Info.	Alcaldía Only	Red Tape
	(1)	(2)	(3)	(4)	(5)
Panel A: Linear Association between Poverty and Outcomes, Lower-Middle Class Petitioners Only					
Poverty rate	−0.011	0.268***	0.255**	−0.017	−0.098
	(0.060)	(0.104)	(0.105)	(0.043)	(0.080)
Observations	600	600	600	600	600
Panel B: Quadratic Association between Poverty and Outcomes, Lower-Middle Class Petitioners Only					
Poverty rate	0.195	0.775	0.970	0.445	−0.091
	(0.360)	(0.616)	(0.593)	(0.283)	(0.499)
Poverty rate^2	−0.182	−0.449	−0.631	−0.409*	−0.006
	(0.311)	(0.535)	(0.508)	(0.238)	(0.428)
Observations	600	600	600	600	600
Panel C: Linear Association between Poverty and Outcomes, Lower-Middle Class Outside of Bogotá					
Poverty rate	−0.008	0.053	0.044	−0.028	−0.136
	(0.066)	(0.107)	(0.593)	(0.047)	(0.091)
Observations	559	559	559	559	559
Panel D: Quadratic Association between Poverty and Outcomes, Lower-Middle Class Outside of Bogotá					
Poverty rate	0.264	−0.747	−0.483	0.477	−0.379
	(0.419)	(0.645)	(0.591)	(0.311)	(0.586)
Poverty rate^2	−0.233	0.685	0.452	−0.432*	0.208
	(0.350)	(0.554)	(0.505)	(0.255)	(0.484)
Observations	559	559	559	559	559
Factors (not Class)	✓	✓	✓	✓	✓
Program Indicator	✓	✓	✓	✓	✓
Estimator	IPW	IPW	IPW	IPW	IPW
Note:					*p<0.1; **p<0.05; ***p<0.01

Table A26: Estimates of the association between municipal rates and service devoted to the lower middle class. The sample includes only calls made by lower-middle class petitioners, and in Panels C and D, only calls made outside of Bogotá. All covariates and and a program indicator are interacted across all factors in the design. Standard errors are clustered at the municipality level since this is the level of measurement of poverty rates.

	Complete	Incomplete	Any Info.	Alcaldía Only	Red Tape
	(1)	(2)	(3)	(4)	(5)
PANEL A: CONDITIONAL AMCE BY TERCILE OF POVERTY WITH INTERACTIVE ELECTORAL THREAT CONTROLS					
Lower-Middle Class	0.010	−0.023	−0.013	−0.017	−0.017
	(0.029)	(0.050)	(0.046)	(0.030)	(0.047)
Medium Poverty: Lower-Middle Class	0.026	0.090	0.116*	−0.041	0.081
	(0.044)	(0.074)	(0.068)	(0.044)	(0.064)
High Poverty: Lower-Middle Class	−0.007	0.147**	0.140**	−0.014	−0.028
	(0.044)	(0.070)	(0.068)	(0.040)	(0.061)
Conditional Effect in M	0.036*	0.067*	0.103**	-0.059**	0.064*
	(0.029)	(0.048)	(0.047)	(0.033)	(0.041)
Conditional Effect in H	0.003	0.124***	0.128***	-0.032*	-0.045
	(0.035)	(0.046)	(0.046)	(0.026)	(0.041)
PANEL B: CONDITIONAL AMCE BY TERCILE OF POVERTYWITH INTERACTIVE ELECTORAL THREAT, POPULATION CONTROLS					
Lower-Middle Class	0.015	0.020	0.034	−0.041	0.012
	(0.035)	(0.059)	(0.054)	(0.037)	(0.059)
Medium Poverty: Lower-Middle Class	0.024	0.042	0.066	−0.005	0.048
	(0.050)	(0.083)	(0.080)	(0.054)	(0.075)
High Poverty: Lower-Middle Class	−0.033	0.123	0.089	0.018	−0.060
	(0.052)	(0.087)	(0.087)	(0.057)	(0.087)
Conditional Effect in M	0.039*	0.061	0.101**	-0.046*	0.060*
	(0.031)	(0.050)	(0.048)	(0.036)	(0.041)
Conditional Effect in H	-0.018	0.142***	0.124***	-0.023	-0.048
	(0.036)	(0.050)	(0.050)	(0.034)	(0.048)
Interactive Population Decile Bins	✓	✓	✓	✓	✓
PANEL C: CAMCE BY TERCILE OF POVERTY RATE WITH INTERACTIVE DEPARTMENT FIXED EFFECTS					
Lower-Middle Class	−0.034	0.032	−0.003	−0.035	0.010
	(0.041)	(0.061)	(0.056)	(0.036)	(0.058)
Medium Poverty: Lower-Middle Class	0.072	0.059	0.131	−0.028	0.077
	(0.054)	(0.080)	(0.080)	(0.054)	(0.077)
High Poverty: Lower-Middle Class	0.072	0.097	0.169*	−0.042	−0.006
	(0.066)	(0.098)	(0.091)	(0.062)	(0.084)
Conditional Effect in M	0.038	0.091**	0.129***	-0.063**	0.088**
	(0.033)	(0.051)	(0.052)	(0.038)	(0.045)
Conditional Effect in H	0.038	0.129**	0.166***	-0.077**	0.005
	(0.040)	(0.059)	(0.055)	(0.037)	(0.049)
PANEL D: CAMCE BY TERCILE OF POVERTY RATE WITH INTERACTIVE DEPARTMENT FIXED EFFECTS, POPULATION CONTROLS					
Lower-Middle Class	−0.068	0.160**	0.091	−0.041	0.027
	(0.055)	(0.077)	(0.073)	(0.037)	(0.072)
Medium Poverty: Lower-Middle Class	0.116	−0.077	0.039	−0.005	0.066
	(0.071)	(0.095)	(0.096)	(0.054)	(0.091)
High Poverty: Lower-Middle Class	0.114	−0.105	0.009	0.018	−0.036
	(0.092)	(0.129)	(0.126)	(0.057)	(0.115)
Conditional Effect in M	0.048*	0.083*	0.130***	-0.046*	0.094**
	(0.036)	(0.054)	(0.053)	(0.036)	(0.046)
Conditional Effect in H	0.046	0.055	0.101*	-0.023	-0.008
	(0.046)	(0.071)	(0.069)	(0.034)	(0.061)
Interactive Population Decile Bins	✓	✓	✓	✓	✓
Estimator	IPW	IPW	IPW	IPW	IPW
Observations	1,194	1,194	1,194	1,194	1,194
Note:					*p<0.1; **p<0.05; ***p<0.01

Table A27: Estimates of the conditional AMCE by tercile of poverty, controlling for electoral threats, department, and poverty. The base category is the first tercile (lowest rate of poverty). All covariates and moderators (poverty tercile indicator, demeaned, poverty decile bins, demeaned electoral threat indicators, and demeaned department indicators) are interacted across all factors in the design. All estimates use the IPW estimator. Standard errors are clustered at the municipality level since this is the level of measurement of the poverty moderator.

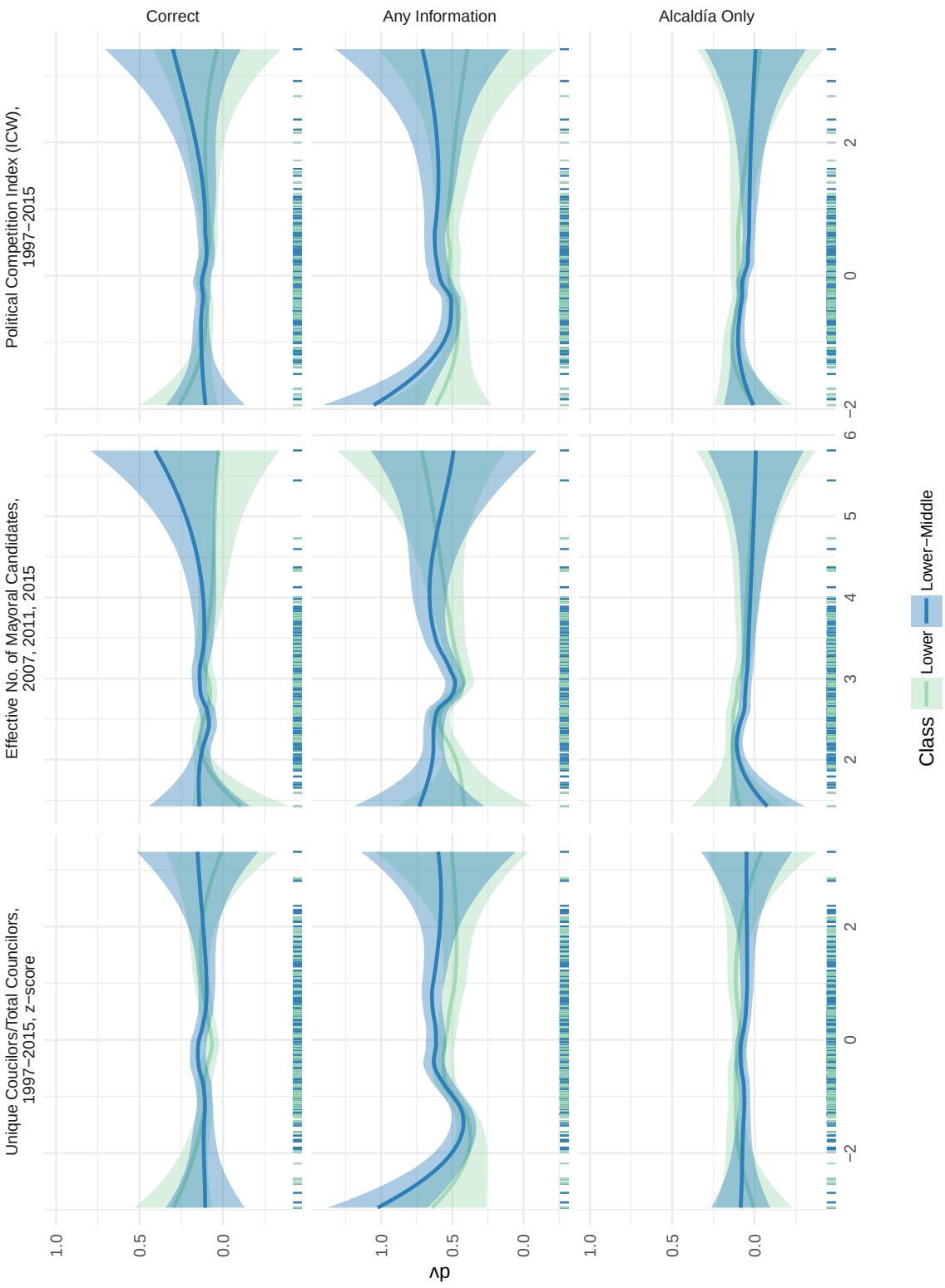


Figure A16: There is no evidence that class-based bias varies in measures of local political competition. Lines estimated by local polynomial regression (Loess) with 95% confidence intervals.

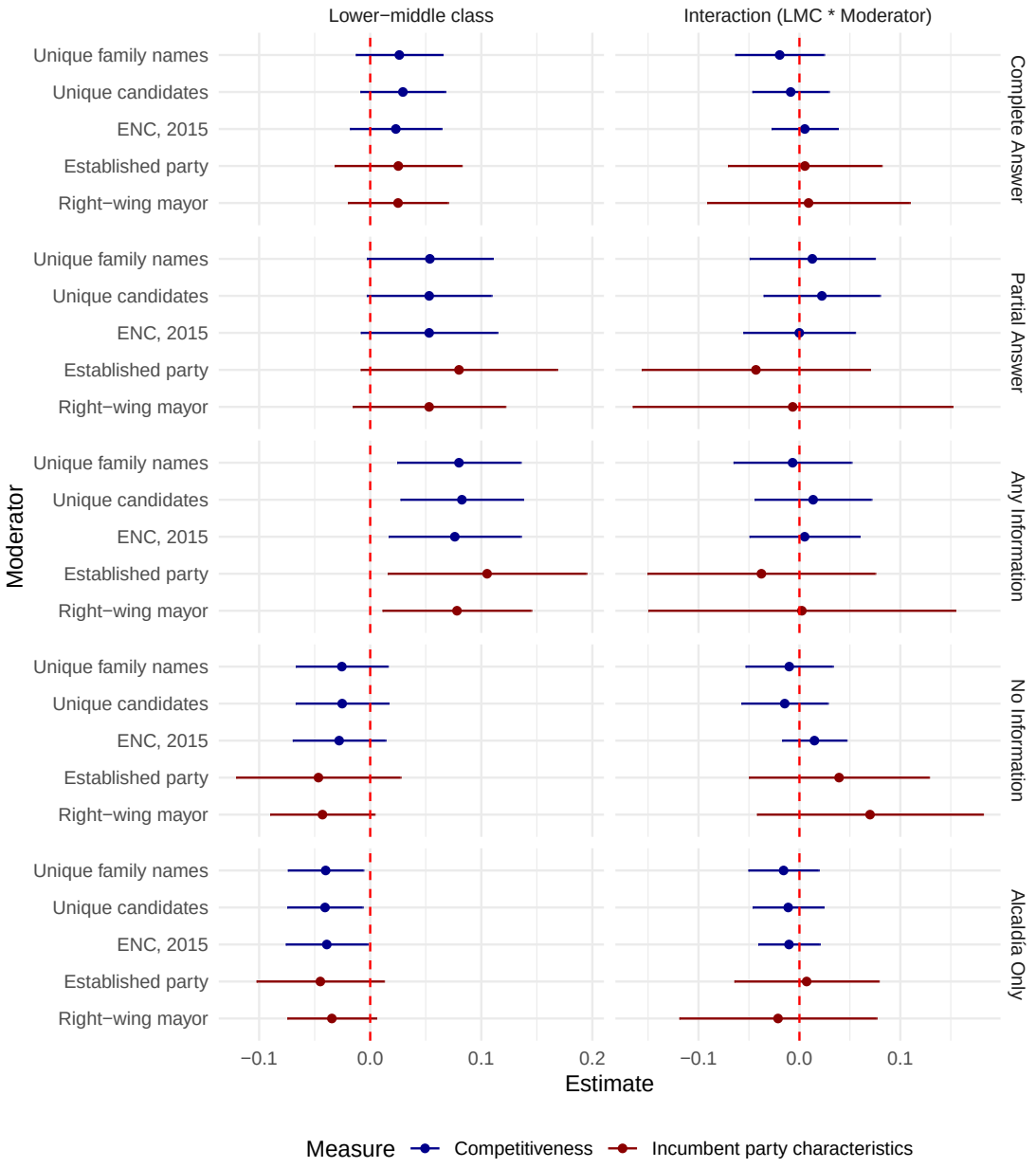


Figure A17: Estimates of conditional AMCEs and interaction terms for political competition variables and ideological placement of the incumbent candidates. Each of the competitiveness measures is a standardized Z-score such that left column estimates bias at the mean of the variable. The incumbent ideology measures are binary indicators such that the left column estimates bias when the moderator is equal to zero and the right column graphs the difference in conditional AMCEs.

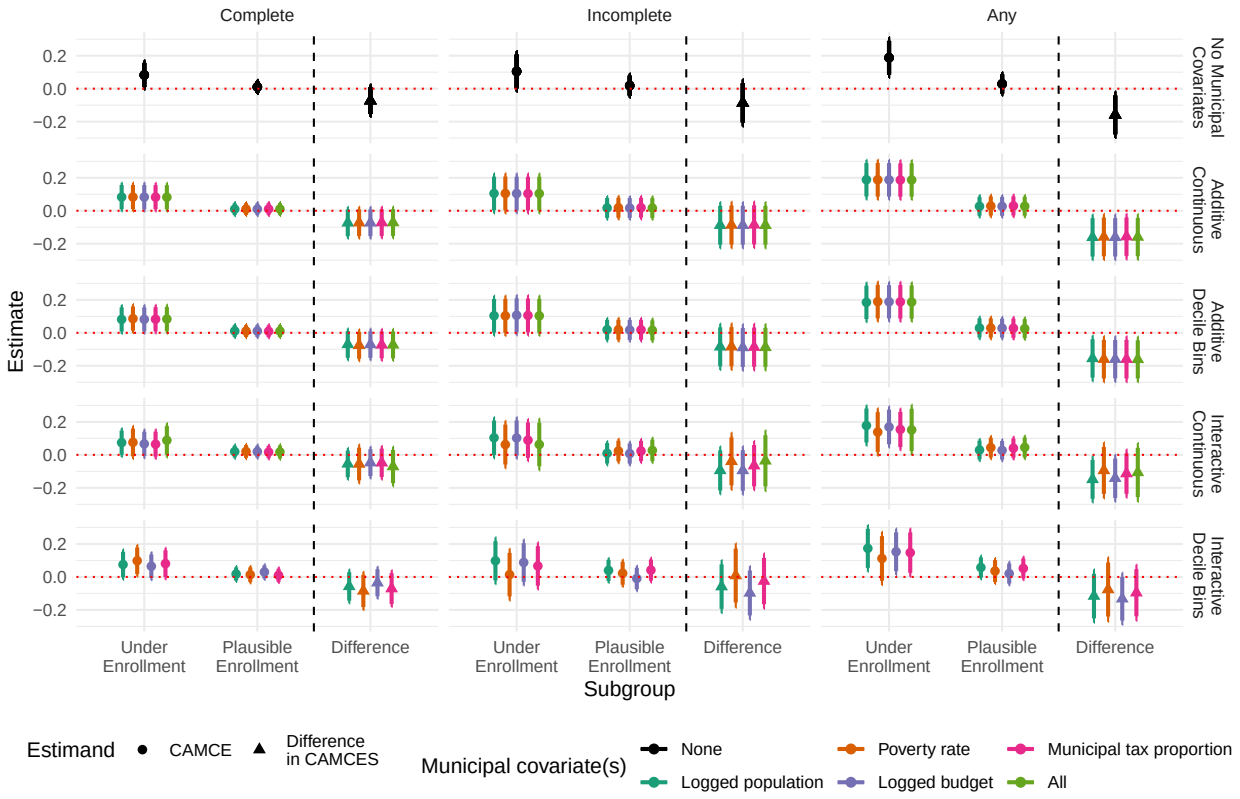


Figure A18: Robustness of the association between measured bureaucratic bias and SISBÉN enrollment category. The top row corresponds to Panel A of Table 6. The second and third rows depict estimates from estimators enter covariates linearly. The fourth and fifth rows depict the estimates from estimators that enter covariates interactively. Thick bars represent 90% CIs and thin bars represent 95% CIs.

A19 Robustness of Link to Administrative SISBÉN Enrollment

Figure A18 conducts robustness tests on Table 6 varying: (1) the set of covariates included; (2) the functional form of the covariates (linear or decile bins); and (3) whether covariates are entered linearly or interactively in the estimator. In general, across specifications, bias emerges (for some outcome measures) in municipalities characterized with "underenrollment" but not for municipalities with "plausible enrollment." The difference in CAMCEs varies somewhat in significance but is consistently negative and sizable.

For the analysis of SISBÉN enrollment and bias in Section 7, I examine the robustness of the classification of "plausibly intended enrollment." In the main text, this category encompasses any municipality for which enrollment falls between the number of individuals in poverty and the population. However, the "plausible" category could also include places with substantial over-enrollment. I examine the robustness of the finding to redefinition of this category. Specifically, I define this category as:

$$\text{Plausible} \in [\text{Poverty Rate}, \min\{j + \text{Poverty Rate}, 1\}] \tag{11}$$

for $j \in [0.4, 1]$. Note that the main definition assumes that $j = 1$. The revised scatter plot illustrating this coding is graphed in Figure A19.

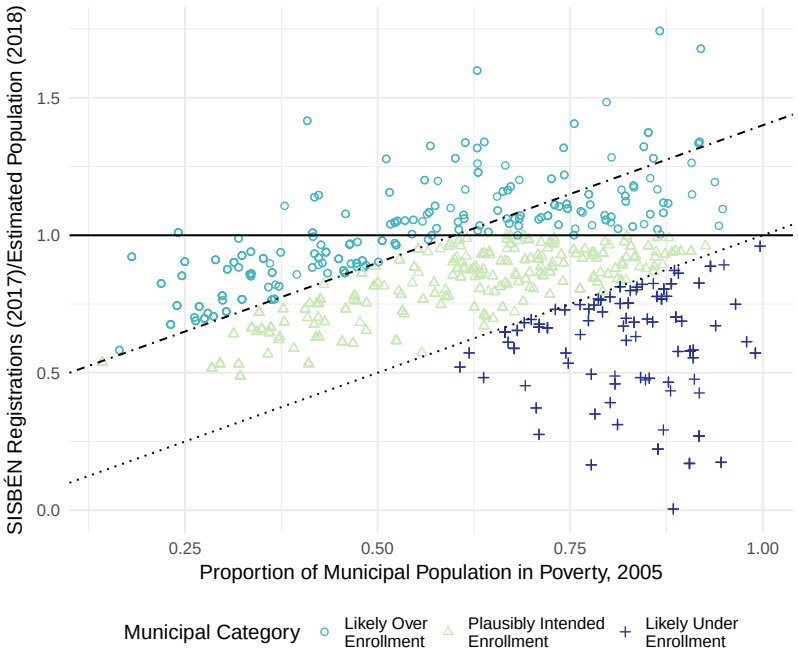


Figure A19: Visualization of the redefinition of "plausible enrollment" for $j = 0.4$.

Re-estimating Panel A of Table 5 with this specification, Figure A20 indicates the the point estimates for Plausible Enrollment and the difference (lower panel) are remarkably similar

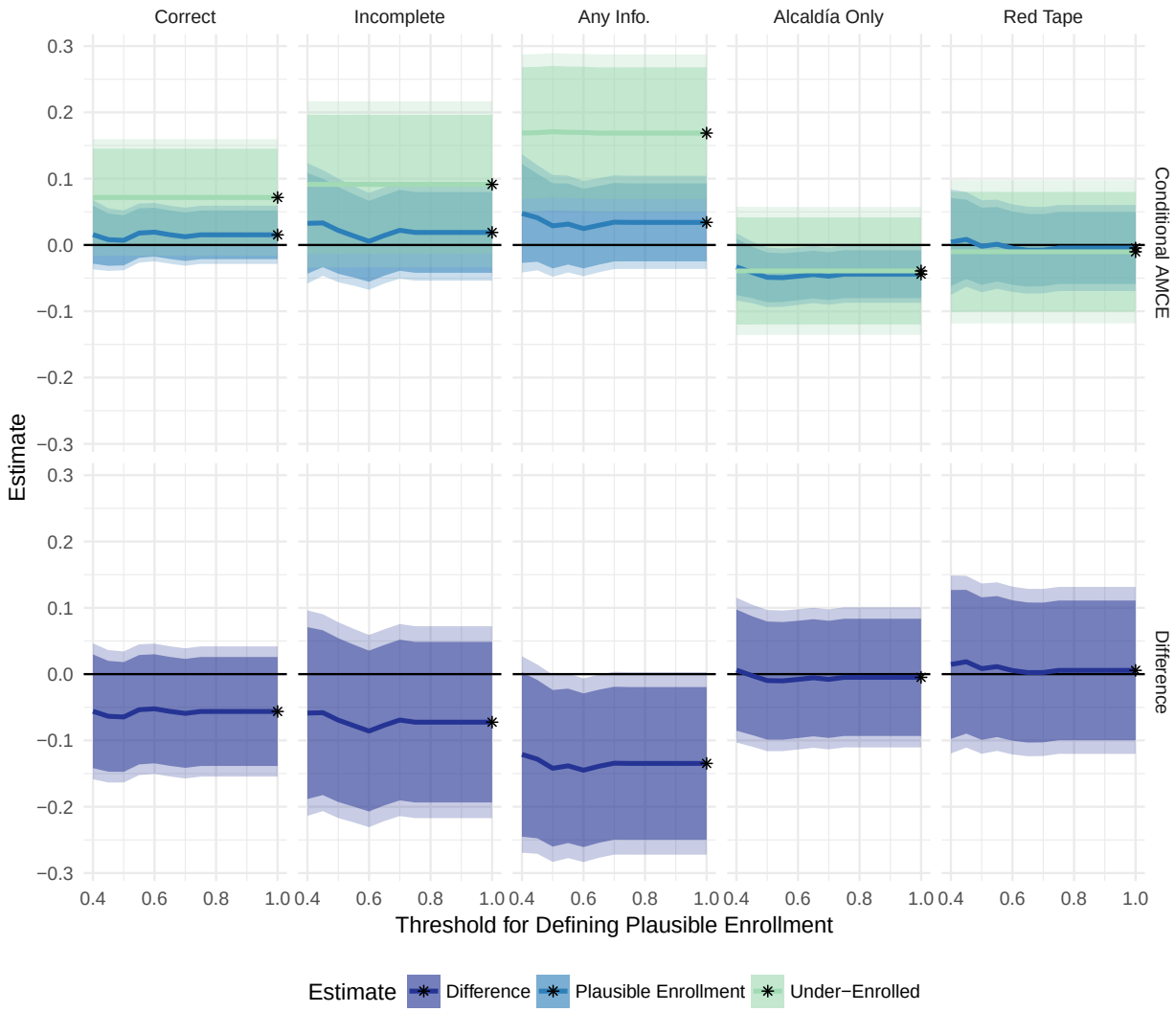


Figure A20: Robustness of the results in Table 5, Panel A to redefining "plausible enrollment." The x-axis corresponds to j in Equation 11. The stars represent the estimates reported (or implied) by Table 5 Panel A. 90 and 95% confidence intervals calculated on the basis of cluster robust standard errors.

Supplementary Appendix: References

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