Bureaucratic Incentives and Administrative Data Production

Appendix

January 9, 2026

Contents

A1 Proofs

Remark 1
Consider four cases. First, suppose technocrat's effort is interior in both periods. In this case, the politician monitors more in the first period if:

$$\frac{1-\sigma_1^{\mathcal{I}}+\sigma_1^{\mathcal{M}}\pi_1+F(\widehat{a})(-1+\sigma_1^{\mathcal{E}}+\sigma_1^{\mathcal{I}}-\sigma_1^{\mathcal{M}}\pi_1)}{c} > \frac{1-\sigma_1^{\mathcal{I}}-\delta+(\sigma_1^{\mathcal{M}}+\delta)(\pi_1-\rho)+F(\widehat{a})(-1+\sigma_t^{\mathcal{E}}+\delta+\sigma_t^{\mathcal{I}}+\delta-(\sigma_t^{\mathcal{M}}+\delta)(\pi_1-\rho))}{c}$$

This simplifies to:

$$\rho > \frac{\delta(1-F(\widehat{a})(2-\pi_1)-\pi_1)}{(1-F(\widehat{a}))(-\delta-\sigma_i^{\mathcal{M}})}$$

Second, suppose that the technocrat exerts zero effort in both periods. In this case, the politician monitors more in the first period if:

$$\frac{\pi_1(1-\sigma_1^{\mathcal{I}}+\sigma_1^{\mathcal{M}}+F(\widehat{a})(-1+\sigma_1^{\mathcal{E}}+\sigma_1^{\mathcal{I}}-\sigma_1^{\mathcal{M}}))}{c} > \frac{(\pi_1-\rho)(1-\sigma_1^{\mathcal{I}}-\delta+\sigma_{t1}^{\mathcal{M}}+\delta+F(\widehat{a})(-1+\sigma_1^{\mathcal{E}}+\delta+\sigma_1^{\mathcal{I}}+\delta-\sigma_1^{\mathcal{M}}-\delta))}{c}.$$

This simplifies to:

$$\rho > \frac{\delta\pi_1(2+F(\widehat{a}))}{1+F(\widehat{a})(-1+\sigma_1^{\mathcal{E}}+\sigma_1^{\mathcal{I}}-\sigma_1^{\mathcal{M}})+2\delta-\sigma_1^{\mathcal{I}}+\sigma_1^{\mathcal{M}}}.$$

Third, suppose that the technocrat exerts zero effort in the first period but exerts positive effort if retained. In this case, the politician monitors more in the first period if:

$$\frac{\pi_1(1-\sigma_1^{\mathcal{I}}+\sigma_1^{\mathcal{M}}+F(\widehat{a})(-1+\sigma_1^{\mathcal{E}}+\sigma_1^{\mathcal{I}}-\sigma_1^{\mathcal{M}}))}{c} > \frac{1-\sigma_1^{\mathcal{I}}-\delta+(\sigma_1^{\mathcal{M}}+\delta)(\pi_1-\rho)+F(\widehat{a})(-1+\sigma_t^{\mathcal{E}}+\delta+\sigma_t^{\mathcal{I}}+\delta-(\sigma_t^{\mathcal{M}}+\delta)(\pi_1-\rho))}{c}$$

This simplifies to:

$$\rho > \frac{-1+F(\widehat{a})(\delta(-2+\pi_1)+(1-\sigma_1^{\mathcal{E}}-\sigma_1^{\mathcal{I}})(1-\pi_1)+\delta+\pi_1(1-\delta)+\sigma_1^{\mathcal{I}}(1-\pi_1))}{(1-F(\widehat{a}))(-\delta-\sigma_i^{\mathcal{M}})}$$

Finally, suppose that the technocrat exerts positive effort in the first period but zero effort if retained. In this case, monitors more in the first period if:

$$\frac{1-\sigma_1^{\mathcal{I}}+\sigma_1^{\mathcal{M}}\pi_1+F(\widehat{a})(-1+\sigma_1^{\mathcal{E}}+\sigma_1^{\mathcal{I}}-\sigma_1^{\mathcal{M}}\pi_1)}{c} > \frac{(\pi_1-\rho)(1-\sigma_1^{\mathcal{I}}+\delta+\sigma_1^{\mathcal{M}}+\delta+F(\widehat{a})(-1+\sigma_1^{\mathcal{E}}+\delta+\sigma_1^{\mathcal{I}}+\delta-\sigma_1^{\mathcal{M}}-\delta))}{c}$$

This simplifies to:

$$\rho > \frac{-1+F(\widehat{a})((1-\sigma_1^{\mathcal{E}}-\sigma_1^{\mathcal{I}})(1-\phi_1)+\phi_1\delta)+\sigma_1^{\mathcal{I}}+\phi_1(1+2\delta-\sigma_1^{\mathcal{I}})}{1+F(\widehat{a})(-1+\sigma_1^{\mathcal{E}}+\sigma_1^{\mathcal{I}}-\sigma_1^{\mathcal{M}})+2\delta-\sigma_1^{\mathcal{I}}+\sigma_1^{\mathcal{M}}}. \blacksquare$$

Remark 2: Bureaucrats exert more effort in the first period (in expectation) when

$$\pi_1 e_1^{L*}+(1-\pi_1)e_1^{T*} > (\pi_1-\rho)e_2^{L^*}+(1-\pi_1+\rho)e_2^{T^*}.$$

This can be rewritten as:

$$(\pi_1-\rho)(e_1^{L*}-e_2^{L*})+(1-\pi_1)(e_1^{T*}-e_2^{T*})+\rho(e_1^{L*}-e_2^{T*}) > 0. \quad (1)$$

Consider four cases. In the first case, the technocrat's effort is interior in both periods. Because monitoring enters both bureaucrats' effort linearly, we can decompose the bureaucrat's effort due to intrinsic motives (i.e., public service motivation) from the effort induced from monitoring as: $P_t^{\theta} = e_t^{\theta *} - \frac{m_t}{c}$. We can express (1) as:

$$(\pi - \rho)(P_1^{L*} - P_2^{L*}) + (1 - \pi)(P_1^{T*} - P_2^{T*}) + \rho(P_1^{L*} - P_2^{T*}) + \frac{m_1^* - m_2^*}{c} > 0.$$

Substituting in equilibrium effort and monitoring rates yields:

$$E[e_1^*] - E[e_2^*] = \overbrace{-\frac{(\pi - \rho)F(\widehat{a})\delta}{c} - \frac{(1-\pi)\delta}{c}}^{<0} + \overbrace{\frac{\rho\left(2(1-F(\widehat{a}))(1-\sigma_1^{\mathcal{I}}) + (1-F(\widehat{a}))\sigma_1^{\mathcal{M}} - \delta\right)}{c}}^{>0} + \underbrace{\frac{(1-F(\widehat{a})(\sigma_1^{\mathcal{M}}\rho - \delta(\pi_1 - \rho)) - \delta(1-2F(\widehat{a}))}{c^2}}_{\text{Ambiguous}},$$

which is ambiguous in sign. This difference is increasing in ρ:

$$\frac{\partial E[e_1^*] - E[e_2^*]}{\partial \rho} = \frac{(1-F(\widehat{a}))(c(2(1-\sigma_1^{\mathcal{I}}) - \delta + \sigma_1^{\mathcal{M}}) + (\delta + \sigma_1^{\mathcal{M}})(1+\pi_1))}{c^2} > 0.$$

Second, consider the case in which the technocrat does not work in either period. Since $e_t^{T*} = 0 \forall t$, (1) simplifies to:

$$\begin{aligned} E[e_1^*] - E[e_2^*] =& (\pi_1 - \rho)(e_1^{L*} - e_2^{L*}) + \rho e_1^{L*} \\ =& \overbrace{\frac{(\pi_1 - \rho)\left(\rho(1 + 2\delta + F(\widehat{a})(\sigma_1^{\mathcal{E}} + \sigma_1^{\mathcal{I}} - 1 - \sigma_1^{\mathcal{M}})) - \delta(cF(\widehat{a}) + (2 + F(\widehat{a}))\pi_1)\right)}^{\text{Ambiguous}}}{c^2} + \\ & \underbrace{\frac{\rho\left((c + \pi_1)(1 - \sigma_1^{\mathcal{I}} + \sigma_1^{\mathcal{M}} + F(\widehat{a})(\delta + \sigma_1^{\mathcal{E}} + \sigma_1^{\mathcal{I}} - \sigma_1^{\mathcal{M}} - 1))\right)}{c^2}}_{>0} \end{aligned}$$

it is straightforward to see that this expression is ambiguous in sign. Note further that this difference is increasing in ρ:

$$\frac{\partial E[e_1^*] - E[e_2^*]}{\partial \rho} = \frac{c(1 - \sigma_1^{\mathcal{I}} + \sigma_1^{\mathcal{M}} + F(\widehat{a})(\sigma_1^{\mathcal{E}} + \sigma_1^{\mathcal{I}} - \sigma_1^{\mathcal{M}} - 1 + \delta)) + 2(\pi_1 - \rho)(1 + 2\delta - \sigma_1^{\mathcal{I}} + \sigma_1^{\mathcal{M}} + F(\widehat{a})(\sigma_1^{\mathcal{E}} + \sigma_1^{\mathcal{I}} - \sigma_1^{\mathcal{M}} - 1 + \delta))}{c^2} > 0.$$

Third, consider the case in which the technocrat does not work in the first period but exerts non-zero effort if retained. Since $e_1^{T*} = 0$, (1) simplifies to:

$$E[e_1^*] - E[e_2^*] = (\pi_1 - \rho)(e_1^{L*} - e_2^{L*}) - (1 - \pi_1)e_2^{T*} + \rho(e_1^{L*} - e_2^{T*})$$

In this sum, the first term is ambiguous in sign, the second term is negative, and the final term is positive. Plugging in equilibrium effort an differentiating yields:

$$\frac{\partial E[e_1^*] - E[e_2^*]}{\partial \rho} = \frac{(1-F(\widehat{a}))(c(2(1-\sigma_1^{\mathcal{I}}) + \sigma_1^{\mathcal{M}} - \delta)) + (\delta + \sigma_1^{\mathcal{M}})(2 - \pi_1)}{c^2} > 0.$$

Finally, consider the case in which the techocrat exerts effort in the first period but exerts zero effort if retained. Since $e_2^{T*} = 0$, (1) simplifies to:

$$E[e_1^*] - E[e_2^*] = (\pi_1 - \rho)(e_1^{L*} - e_2^{L*}) + (1 - \pi_1)e_1^{T*} + \rho e_1^{L*}$$

Here, the first term is negative (since the change in the monitoring rate is sufficient to reduce the technocrat's effort to 0 in the second period) and the second and third terms are obviously positive. Differentiating with respect to ρ:

$$\frac{\partial E[e_1^*] - E[e_2^*]}{\partial \rho} = \frac{c(1 - \sigma_1^{\mathcal{I}} + \sigma_1^{\mathcal{M}} + F(\widehat{a})(\sigma_1^{\mathcal{E}} + \sigma_1^{\mathcal{I}} - \sigma_1^{\mathcal{M}} - 1 + \delta)) + 2(\pi_1 - \rho)(1 + 2\delta - \sigma_1^{\mathcal{I}} + \sigma_1^{\mathcal{M}} + F(\widehat{a})(\sigma_1^{\mathcal{E}} + \sigma_1^{\mathcal{I}} - \sigma_1^{\mathcal{M}} - 1 + \delta))}{c^2} > 0.$$

■

Remark 3: Denote the share of households classified as eligible, as a function of bureaucratic effort by $\mathcal{S}(e)$:

$$(S)(e \mid \theta) = \begin{cases} e\left(F(\widehat{a})\sigma_t^{\mathcal{E}} + (1 - F(\widehat{a}))(1 - \sigma_t^{\mathcal{I}})\right) & \text{if } \theta = T \\ e\left(F(\widehat{a})\sigma_t^{\mathcal{E}} + (1 - F(\widehat{a}))(1 - \sigma_t^{\mathcal{I}} + \sigma_t^{\mathcal{M}})\right) & \text{if } \theta = L. \end{cases}$$

Note that for a fixed level of effort, e, $\mathcal{S}(e \mid L) > \mathcal{S}(e \mid T)$ since $\sigma_t^{\mathcal{M}} > 0$. The appointee classifies more households as eligible if:

$$\pi_1 \mathcal{S}(e_1^{L*} \mid L) + (1 - \pi_1)\mathcal{S}(e_1^{T*} \mid T) > (\pi_1 - \rho)\mathcal{S}(e_2^{L*} \mid L) + (1 - \pi_1 + \rho)\mathcal{S}(e_2^{T*} \mid T) \tag{2}$$

This can be rewritten as:

$$\pi_1 \left(\mathcal{S}(e_1^{L*} \mid L) - \mathcal{S}(e_2^{L*} \mid L)\right) + (1 - \pi_1)\left(\mathcal{S}(e_1^{T*} \mid T) - \mathcal{S}(e_2^{T*} \mid T)\right) + \rho\left(\mathcal{S}(e_2^{L^*} \mid L) - \mathcal{S}(e_2^{T*} \mid T)\right) > 0$$

Note that the last term in the sum, $\mathcal{S}(e_2^{L^*} \mid L) - \mathcal{S}(e_2^{T*} \mid T)$ must be positive: the politician's monitoring rate is equivalent for both types in the same t and the loyalist exerts greater effort than the technocrat. By inspection, thus, the right hand side of the expression is increasing in ρ. ■

Remark 4: Assume that knowledge increases incrementally over time, whereas the monitoring rate is sticky in the short run. Denote by $g(t)$ the knowledge accrued by a bureaucrat between $t = 1$ and $t = 2$, such that the bureaucrat's knowledge at time $t \in [1, 2]$ is $\sigma_1^{\mathcal{E}} + g(t)\delta$, etc. Further, assume that $g(0) = 0$, $g(1) = 1$, and $g'(t) > 0$, such that knowledge is monotonically increasing from (e.g.,) $\sigma_1^{\mathcal{E}}$ at time $t = 1$ to $\sigma_1^{\mathcal{E}} + \delta$, at time $t = 2$ as in the main text. Consider first a technocrat. Given that a household has been entered in the register, the probability that it is classified as eligible is given by:

$$\mathcal{R}(t \mid \theta = T) = F(\widehat{a})(\sigma_1^{\mathcal{E}} + g(t)\delta) + (1 - F(\widehat{a}))(1 - \sigma_1^{\mathcal{I}} - g(t)\delta).$$

It is straightforward to show that:

$$\frac{\partial R(t \mid \theta = L)}{t} = F(\widehat{a})g'(t)\delta - (1 - F(\widehat{a}))g'(t)\delta = (2F(\widehat{a}) - 1)g'(t)\delta < 0$$

Now consider a loyalist. Given that a household has been entered in the register, the probability that it is classified as eligible is given by:

$$\mathcal{R}(t \mid \theta = T) = F(\widehat{a})(\sigma^{\mathcal{E}} + g(t)\delta) + (1 - F(\widehat{a}))(1 - \sigma^{\mathcal{I}} + \sigma^{\mathcal{M}}).$$

It is straightforward to show that:

$$\frac{\partial R(t \mid \theta = L)}{t} = F(\widehat{a})g'(t)\delta > 0.$$

The aggregate change across bureaucrat types (under the symmetric learning) is given by:

$$\pi_1 F(\widehat{a})g'(t)\delta + (1-\pi_1)(2F(\widehat{a})-1)g'(t)\delta = (F(\widehat{a})(2-\pi_1)+\pi_1-1)g'(t)\delta$$
$$\Rightarrow \pi_1 \geq \frac{(1-2F(\widehat{a}))g'(t)\delta}{1-F(\widehat{a})}$$

Thus, conditional on observing a household in the register, the probability that the household is classified as eligible should increasing in the experience of the bureaucrat for sufficient π_1. ■

A2 Bureaucratic appointments

Figure 5 suggests that the post-election increase in the hiring of social registry-related bureaucrats was less marked in Brazil than in Colombia. However, the one-term limit in Colombia implies that there were lower levels of turnover in Brazil following elections than in Colombia. To that end, Figure A1 reports estimates of dynamic average treatment effects on the treated (ATTs), which are defined as:

$$ATT_t = [Y_t(\text{New mayor} = 1) - Y_t(\text{New mayor} = 0) \mid \text{New mayor} = 1],$$

where t indexes calendar months. I consider two outcome measures (Y_t): the log number of new enumerators and an indicator for any new enumerator. The figure shows that new mayors appoint more new interviewers in the first 3-6 months of their administrations, but then turnover rates between new mayors and re-elected mayors converge.

Table A1 compares the tenure of registry administrators in both countries. Note that because SISBEÉN was substantially older than CadUnico at the relative times of study (27 years versus 11 years), the longest-serving SISBÉN administrators have substantially longer tenures in their jobs in Colombia than CadUnico administrators in Brazil.

		Tenure in local government, in years		Tenure maintaining social registry, in years	
		Civil servant	Contractor	Civil servant	Contractor
Brazil	Mean	5.61 [5.51, 5.71]	1.84 [1.70, 1.97]	3.26 [3.22, 3.31]	2.67 [2.52, 2.83]
	Median	3.76 [3.70, 3.82]	1.30 [1.14, 1.46]	2.50 [2.45, 2.55]	1.98 [1.84, 2.12]
Colombia	Mean	9.71 [8.82, 10.59]	3.02 [2.52, 3.52]	6.82 [6.15, 7.48]	2.11 [1.78, 2.44]
	Median	6.27 [5.02, 8.67]	2.27 [2.21, 2.23]	2.90 [2.44, 3.86]	1.57 [1.24, 2.24]

Table A1: Tenure is measured in years working for the local government or in maintaining the social measure. 95% confidence intervals in brackets.

A3 Contextual information on SISBÉN and CadUnico

A3.1 SISBÉN: Transition from SISBÉN-III to SISBÉN-IV

This study analyzes data from the first two years of SISBÉN-IV, the fourth iteration of the data collection and index construction. The transition from SISBÉN-III to SISBÉN-IV in March 2021 coincided with a large

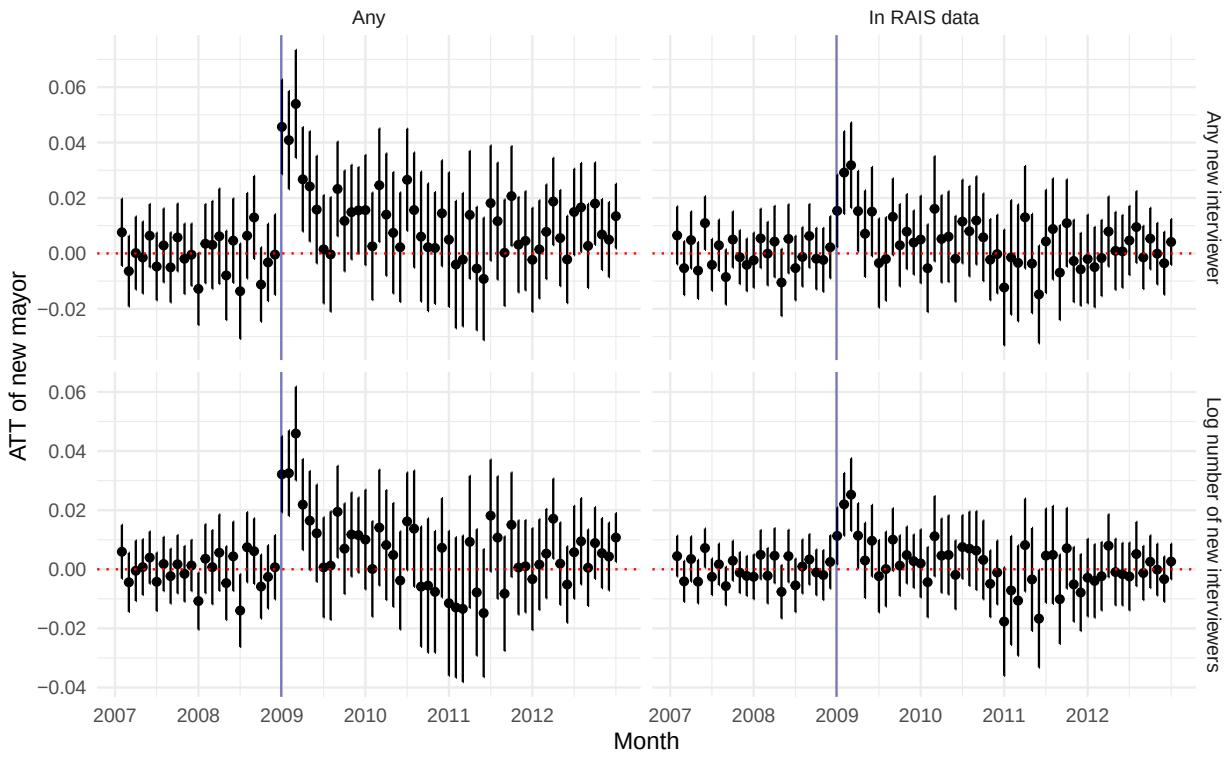

Figure A1: Dynamic ATT estimates of the effect of a new mayor on the selection/recruitment of new CadUnico interviewers. Estimates are estimated using the

drop in enrollment. SISBÉN-III was used from 2011-2020, though public microdata samples analogous to those provided in 2021 and 2022 are available starting in 2014. Figure A2 shows a growth in enrollment in SISBÉN-III from 2014-2020, with a large decrease in enrollment coinciding with the transition to SISBÉN-IV: on average, enrollment fell by 33% in municipal centers and 35% outside municipal centers. Declines in enrollment stem from some combination of the following:

- Actualization of municipal resident households (i.e., removing households that have migrated to another muncipality).
- De-duplication of households who were enrolled multiple times during the course of SISBÉN-III.
- Households that were enrolled in SISBÉN-III were missed during the initial enrollment in SISBÉN-IV.

Figure A3 disaggregates the mean trends in Figure A2 by municipalities in which the bureaucrat was replaced versus retained by the mayor (in 2021). These lines approximate pre-trends for the first-differences analyses reported in Table 6 and Figure 4.

Finally, to further characterize trends in SISBÉN-III scores—which determineed eligibility for means-tested programs until 2021—Figure A4 plots average municipal SISBÉN-III scores over time. Note that SISBÉN-III scores ranged from 0 to 100, where lower numbers represented lower scores. The plot shows that scores decreased from 2014-2017. In 2018 and especially 2019, when new surveys for SISBÉN-IV by national con-

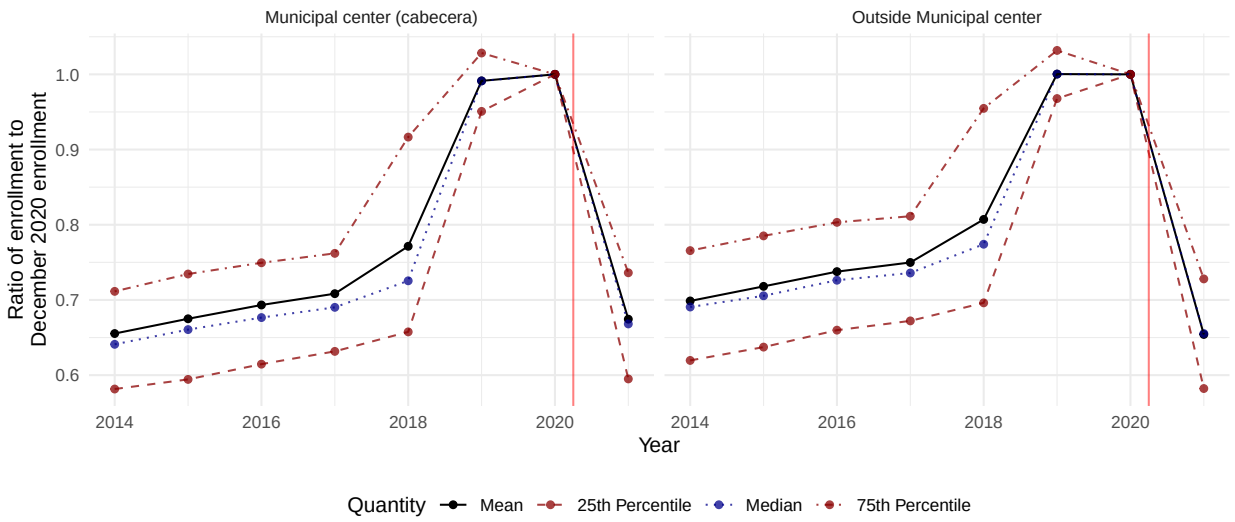

Figure A2: Ratio of households enrolled in SISBÉN (as calculated from the random sample of microdata) by year, from 2014-2021. Municipal-level enrollment is divided by municipal enrollment in 2020.

tractors inflated substantially the rolls of SISBÉN-III, as depicted in Figure A2, average municipal scores increased. This plot is consistent with the idea that municipal administrators score households as (marginally) poorer over time. National contractors then enter and distortions to increase the transfer-eligible population are eliminated or substantially attenuated, resulting in an increase in scores.

A3.2 CadUnico: Properties of December 2012 Cross-Section

This section aims to clarify the structure of the CadUnico database. Households enter the database sometime after 2001, but to remain eligible for social programs, they must be re-interviewed at least once every 24 months. The data used in this project is a cross section of the database from December 2012. Figure A5 provides a visualization of this data. The green line represents enrollment, which grows at a similar rate, at least between 2003 and 2012. The blue line depicts the distribution of dates of the most recent interview. Consistent with the 24-month requirement for maintaining access to benefits, approximately $^2/_3$ of households were interviewed in 2011 or 2012.

The analyses I conduct rely on a link between the CadUnico interviewer and RAIS employer-employee data. Since RAIS examines employment between 2008 and 2012, it is not suprising to see that this matched sample overrepresents recently-enrolled and recently-interviewed households, as is evident from the dashed lines. Indeed, within this subsample, nearly 90% of households were interviewed in 2011 or 2012.
Table A2 clarifies the number of interviews per year from 2009-2012, both in the full December 2012 cross-section of the data set. Recall that these represent the most recent interview for each household. It also reports the number of municipalities and interviewers represented among these interviews. The three right columns report analogous figures for the interviews that can be matched—by interviewer ID—to the RAIS employer-employee data. Note that many municipalities rely on interns to conduct some interviews. These individuals are not recorded in RAIS and represent some of the drop-off between Columns 2-4 and Columns 5-7.

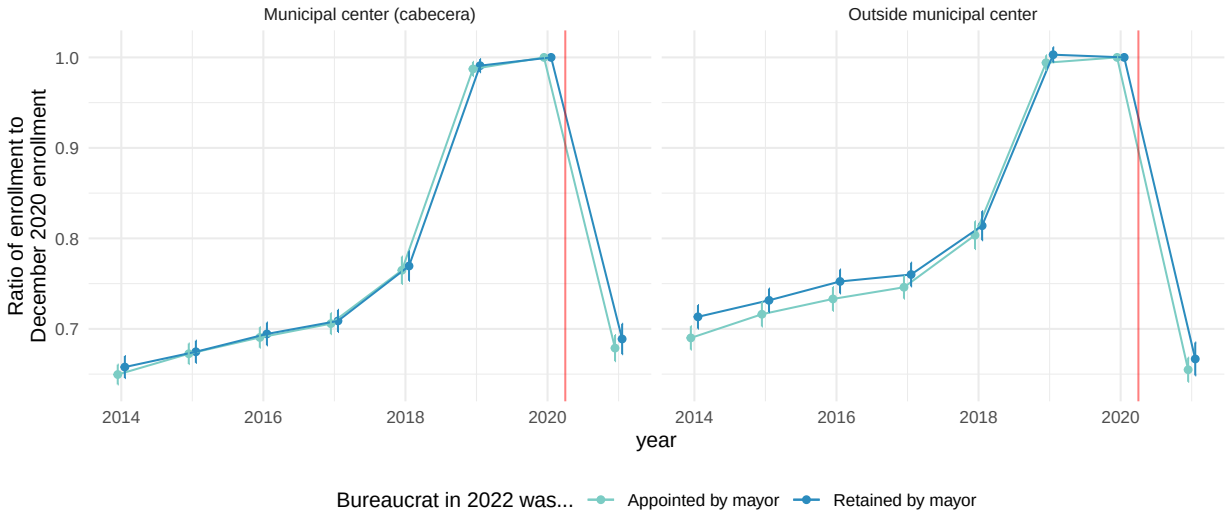

Figure A3: Ratio of household enrollment relative to 2020 for municipalities who responded to the survey, divided by those in which the bureaucrat was appointed or retained by the politician who entered office in 2021.

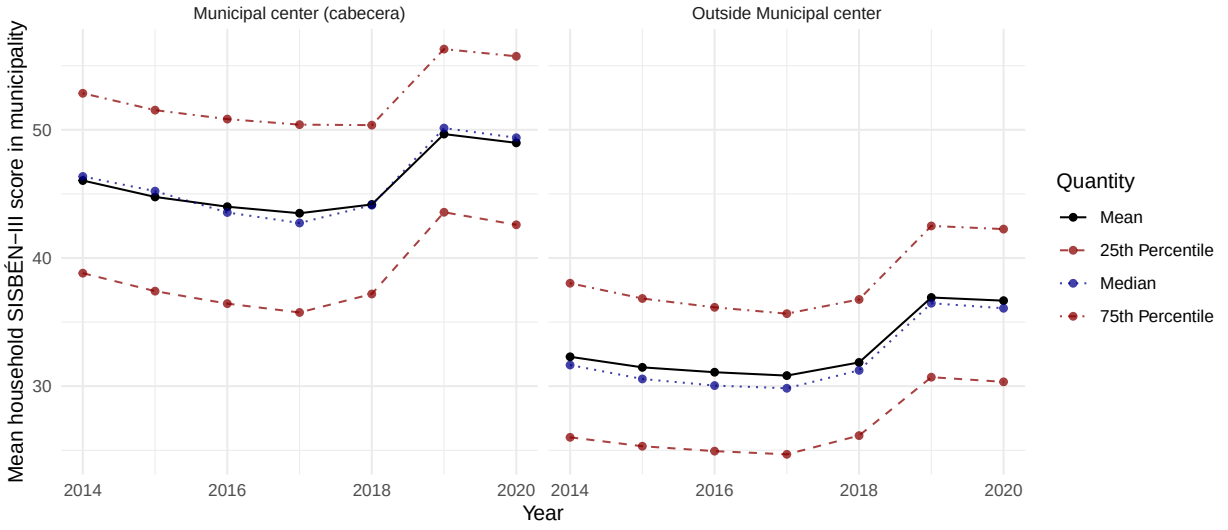

Figure A4: Trends in municipal average SISBÉN score (at household level). The lines depict the mean, median, and inter-quartile range of these scores, by year, from 2014-2020.

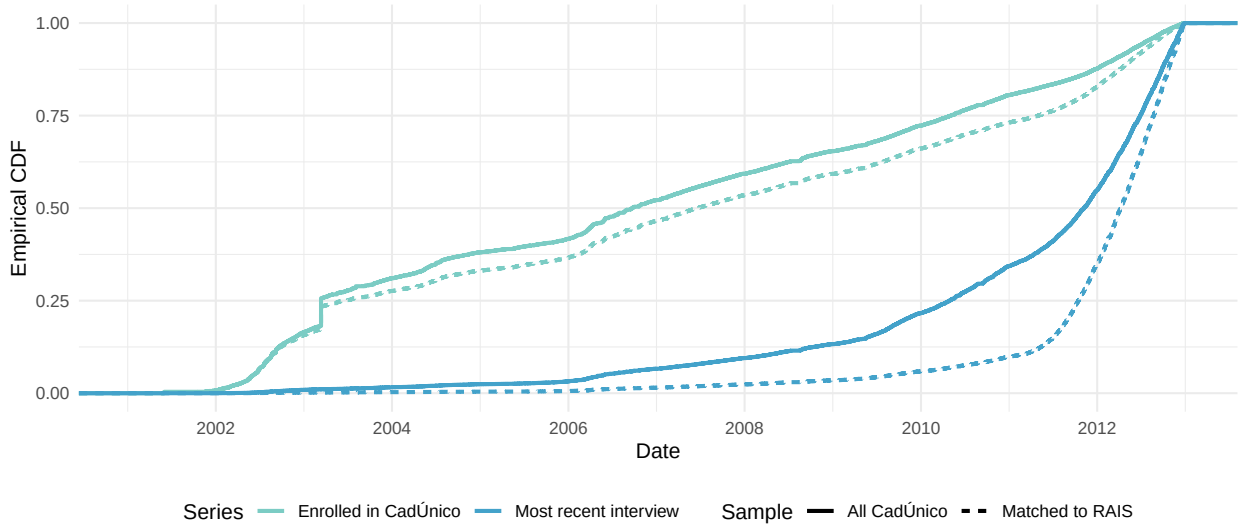

Figure A5: Empirical CDF of CadUnico enrollment and the most recent interview. The dashed lines represent the sample interviewed (most recently) by an interviewer who is in the RAIS data between 2008 and 2012.

	All interviews			Matched to an interviewer in RAIS		
Year	Interviews	Municipalities	Interviewers	Interviews (%)	Municipalities (%)	Interviewers (%)
2009	2,725,647	5,552	23,704	267,752 (9.8%)	3,914 (70.4%)	10,843 (45.7%)
2010	3,387,725	5,538	28,892	403,090 (11.9%)	4,600 (83.1%)	15,104 (52.3%)
2011	5,884,287	5,550	40,605	3,191,868 (54.2%)	5,288 (95.3%)	25,239 (62.2%)
2012	10,380,005	5,551	41,243	6,461,514 (62.2%)	5,275 (95.0%)	25,625 (62.1%)

Table A2: Description of the number of interviews, unique municpalities, and unique interviewers in the December 2012 cross-section of CadUnico and the sample that can be matched to RAIS.

A4 Analysis of oversight strategies: ancillary analysis

A4.1 Survey design validation

Table A3 examines the covariate profile of municipalities in each survey sample relative to all Colombian municipalities. Across census, geographic, and administrative measures, the municipalities in the sample ($n = 752$) resemble the population ($n = 1,102$).

A4.2 Survey wording

The English translations of survey questions used to measure oversight are listed in Table A4.

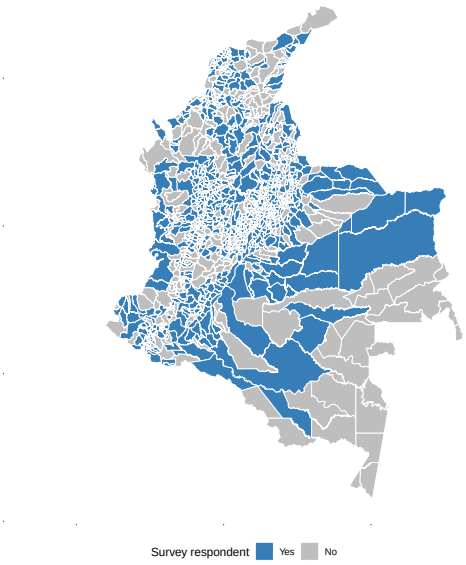

Figure A6: Municipalities in the survey sample.

Outcome	Question	Response options
Oversight frequency	How often is your performance reviewed by your supervisor?	1: Weekly; 2: Every two weeks; 3: Monthly; 4: Bi-annally; 5: Annually; 6: Never
Mayor supervises	Who in the *alcaldía* (local government) oversees you work? (Select all that apply)	1: Mayor selected; 0: Mayor not selected
Goals	Has the alcaldía set targets for the administration of SISBÉN in [municipality] this year?	1: Yes; 0: No or unsure
Freedom	When you are assigned a task regarding the administration of SISBÉN, how much freedom do you have to carry it out?	1: A large amount; 2: A lot; 3: A moderate amount; 2: A little; 5: None at all

Table A4: English translations of questions used in Table 5.

A4.3 Robustness and interpretation of results

I present several pieces of evidence in support of the results/interpretation in Table 5. First, Figure A7 reports results from an within-subjects design in which respondents were asked whether they had seen a given punishment applied to (a) a civil servant; and (b) a contractor.[1] We can common experiences/expectations about the types of punishments applied to civil servants versus contractors. These experiences do not vary appreciably by a respondent's contract type or appointment status.

Second, Table A5 leverages the fact that the survey was conducted at the same time as two other original

[1]These covary with retention versus appointment by the current mayor, but the descriptor is distinct from the main "treatment" in the paper.

surveys of data-producing bureaucrats: those that input contract data into the national contracts database and those that apply for municipal grants from the resource royalies (Regalías) program. It shows that while staffing decisions are positively correlated across municipalities, perhaps due to common pools of potential bureaucrats, oversight decisions are less strongly correlated within municipality.

Third, Figure A8 shows that among bureaucrats appointed by the current mayor, rates of oversight and goal setting do not vary detectably in tenures. This is inconsistent with the results in Table 5 being driven by "new hires" among mayoral appointees.

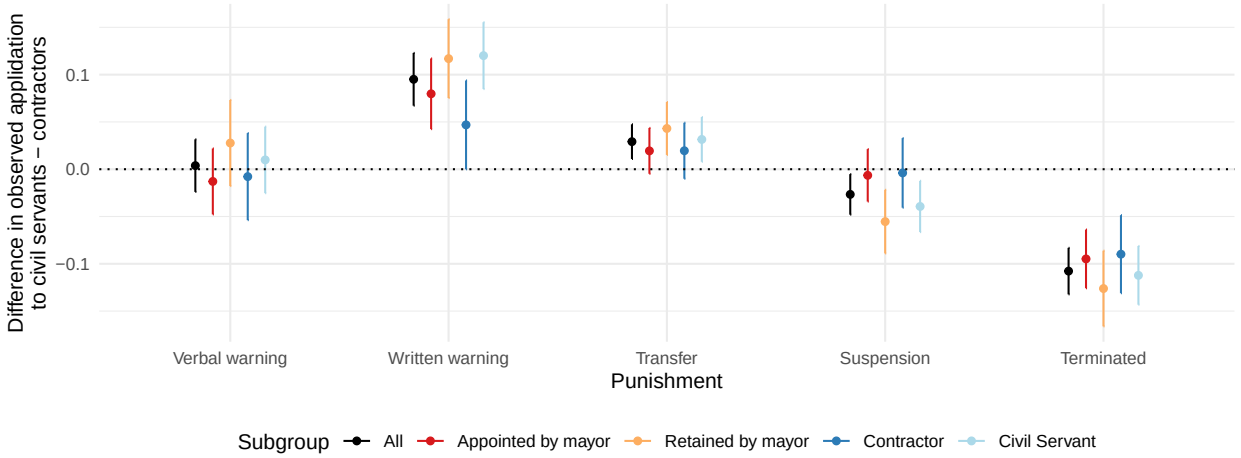

Figure A7: Difference in the rate of the observed application of five punishments to civil servants versus contractors. The punishments are ordered along the x-axis in order of severity/professional consequence.

A5 Analysis of effort allocation: ancillary analysis

A5.1 SISBÉN baseline enrollment

Table 6 documents a differential increase in enrollment between 2021 and 2022 municipalities in which the SISBÉN administrator was appointed by the current mayor. Table A6 reports regressions of baseline SISBÉN enrollment in March 2021 on bureaucrat appointment status and the covariates used Table 6. While the estimated coefficients on "Appointed by mayor" are negative, meaning that there was lower baseline enrollment per capita, these coefficients are not distinguishable from zero at standard thresholds. Moreover, the enrollment means suggest that there were more households to enroll in both zones of both types of municipalities. Thus, the results in Table 6 are not driven by ceiling effects in places with retained administrators.

It is worthwhile to note that, on average, >80% of households *per municipality* are enrolled in SISBÉN (for both urban and rural zones). It is important to clarify that that this is driven by the fact that most municipalities are very small. In large cities, enrollment is substantially lower. For example, in Colombia's largest three cities, baseline enrollment was 41.3% (Bogotá), 45.5% (Medellín), and 45.3% (Cali).

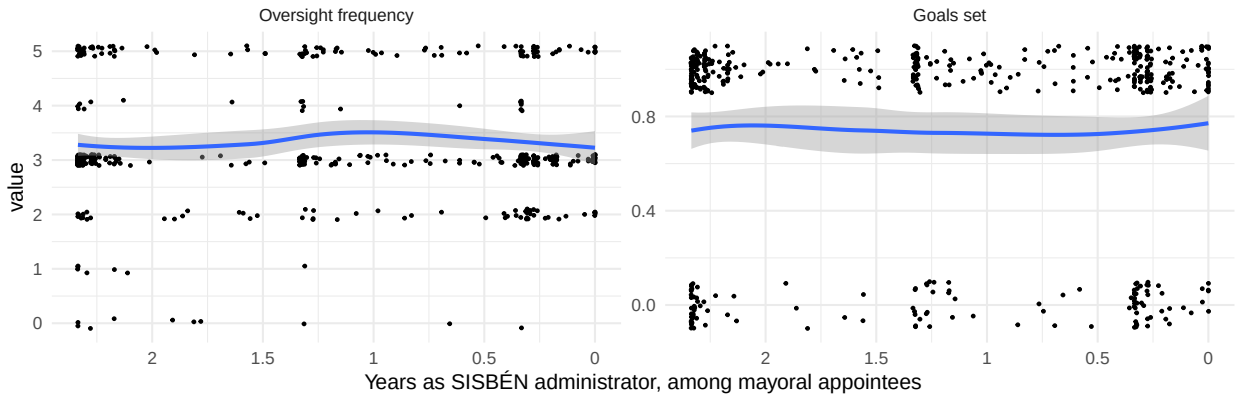

Figure A8: There is no evidence that the frequency of oversight and goal setting vary as a function of tenure among appointees.

A6 Analysis of scores: ancillary analysis

A6.1 Colombia: Contextualizing estimates

First, it is useful to consider how the outcome variable—the change in the cumulative mass function—is constructed. Figure A9 plots the raw data underlying the change in the cumulative mass functions from 2021 to 2022 in one representative municipality. This illustrates how this outcome is constructed. Analogous comparisons are made for households outside the municipal center and for changes between 2022 and 2023.

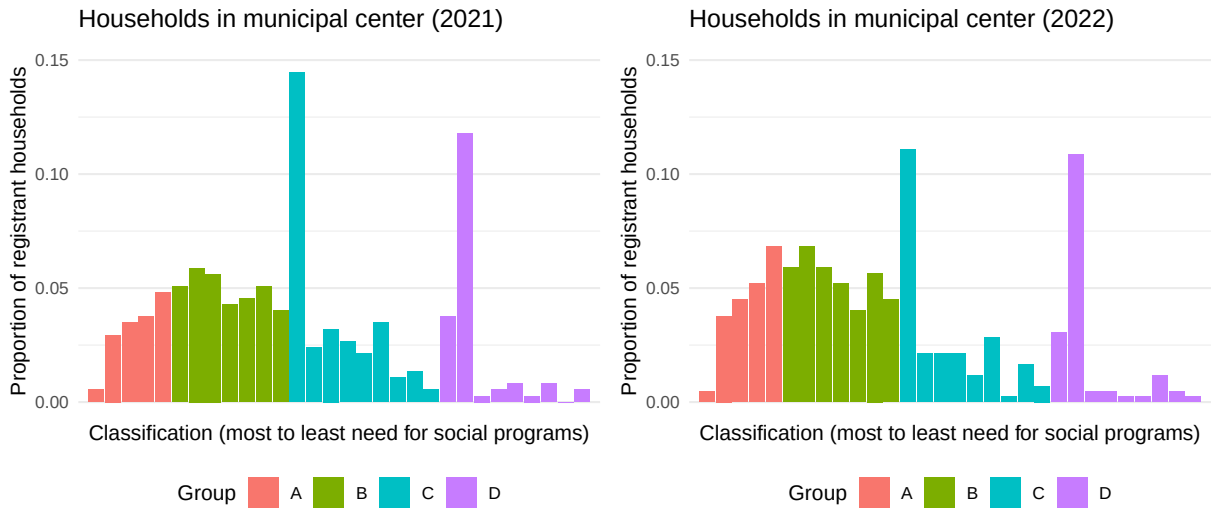

Figure A9: These plots show the distribution of households across SISBEN-IV categories in 2021 and 2022 in the municipality with the median change in households in extreme or moderate poverty (Falan, Tolima).

Figure A10 depicts the distribution of differences in the cumulative mass functions from 2021 to 2022. This plot therefore summarizes the dependent variable in Figure 4.
Second, it is possible that the poorer populations reported by mayor-appointed bureaucrats stems from the

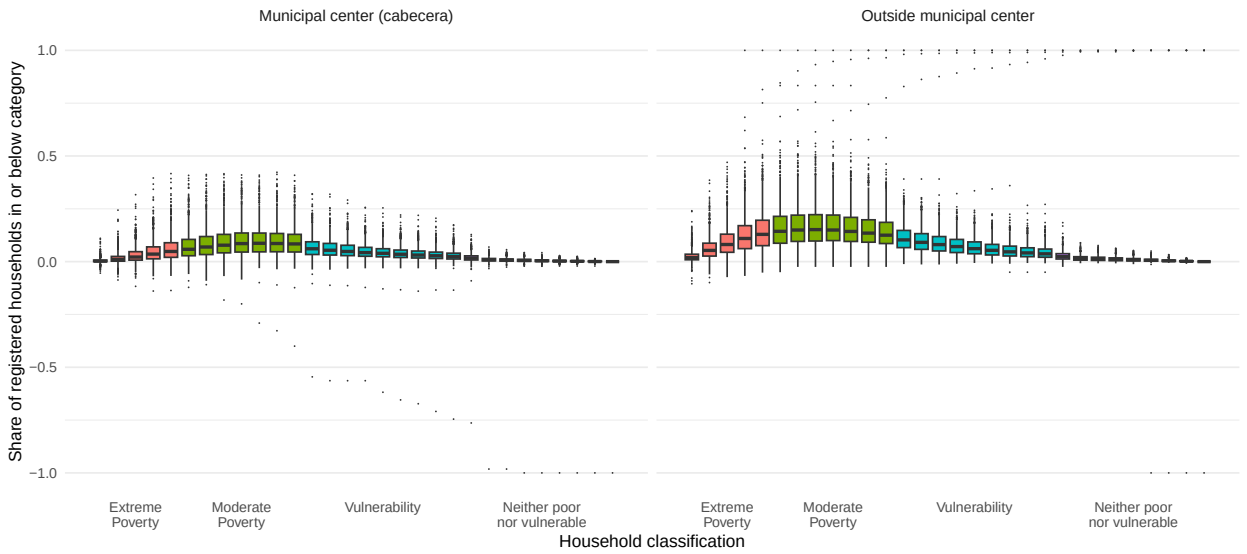

Figure A10: These plots depict the distribution of changes in the cumulative mass functions of the SISBEN-IV household classification from 2021 to 2022. Points above zero correspond to increases in poverty.

increase in effort alone: harder-working bureaucrats find poorer households and enroll them. I show that new enrollment, in isolation, explain the observed patterns. To do so, I show that despite large-scale increases in enrollment, less vulnerable categories *shrunk* in enrollment between 2021 and 2022. This means that some households must have been reclassified.

To see the logic, consider the four large categories ("Extreme poverty", "Moderate poverty", "Vulnerability", and "Neither poor nor vulnerable") that can be constructed from the 31 categories. Table A7 shows that despite increases of enrollment of 19% in municipal centers and 37% in the rural area outside these areas, the number of households classified in the latter two categories ("Vulnerability" and "Neither poor nor vulnerable") *shrunk* in a majority of municipalities. This provides evidence of reclassification of existing households. These reductions in households in these categories was more likely in municipalities with a bureaucrat appointed by the mayor. Figure A11 reports estimates of the difference using the same covariates as Figure 4.

A6.2 Brazil: Bolsa Familia enrollment

In Brazil, we can match receipt of Bolsa Familia to CadUnico scores. Table A8 reports specifications analogous to those in Figure 5 for enrollment in Bolsa Familia (Panel A). It suggests that within municipality, bureaucrats appointed by the current mayor increase enrollment in Bolsa Familia by 4.8 percentage points (Column 1). This corresponds to a 9.1% increase on the average enrollment rate by bureaucrat and 22% of the within-municipality standard deviation between bureaucrats. But this increase is not simply from registering more poor families. Appointed bureaucrats also exhibit a smaller gap between the households that they classify as poor enough for Bolsa Familia and the share of households enrolled (Panel B). Here, the estimated difference between appointed and retained bureaucrats is -2.7 percentage points, which corresponds to 20% of the average gap across bureaucrats and 14% of the within-munciipal standard deviation between bureaucrats.

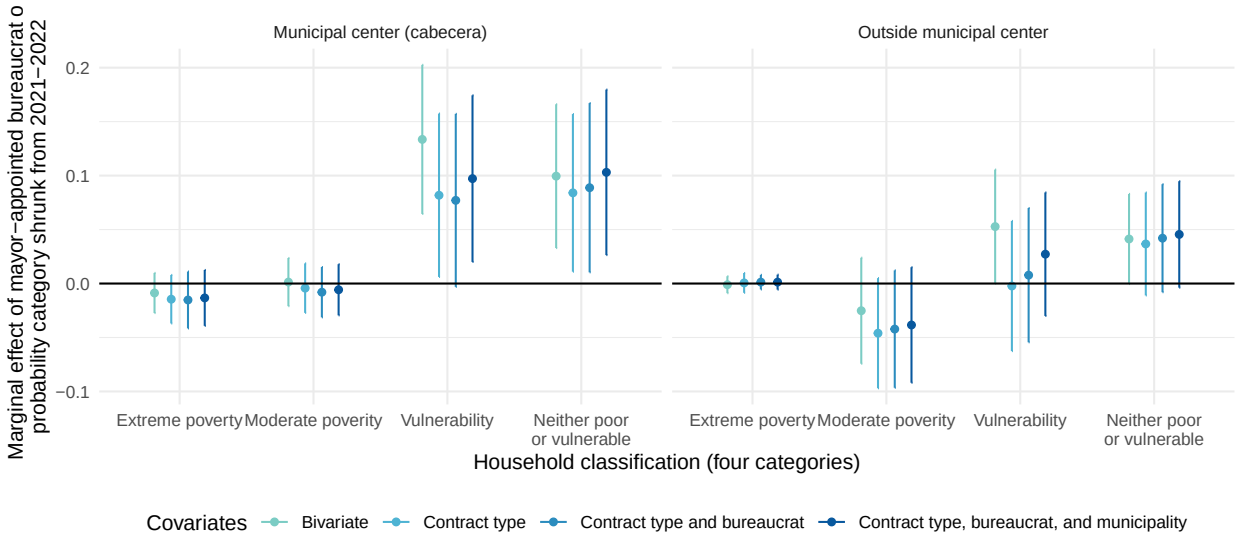

Figure A11: Estimates of the marginal effect of having a bureaucrat appointed by the mayor on the probability that enrollment in a category shrunk (in absolute terms) between 2021 and 2022. This provides evidence of reclassification of enrolled households. 95% confidence intervals are calculated based on heteroskedasticity-robust standard errors

A7 Analysis of bureaucratic learning: ancillary analysis

Figure A12 suggests that the increases in Bolsa Familia qualification, by order of the interview, documented in Figure 6 are driven by a combination of learning and selection. Here, selection determines which bureaucrats are able to continue to conduct more interviews. To provide a non-parametric decomposition of these two dynamics, Figure A12 divides interviews according to decile of the total interviews conducted. This decomposition suggests that longer-surving bureaucrats produce more Bolsa Familia recipients in a fixed number of interviews, even from the first interviews. But the rate at which interviewee households qualify for Bolsa Familia increases in a bureaucrat's experience for most deciles.

For an additional measure of bureaucratic learning, I examine the degree to which bunching around the thresholds change over time. In contrast to the evidence in the main text that uses within-bureaucrat changes in behavior, this looks at the rate at which changes in the the eligibility threshold in August 2009 were internalized by bureaucrats. Figure A13 shows that bunching at the unconditional and conditional thresholds jumps when the threshold changes (the blue lines) and continues to increase over the subsequent years. This suggests that learning (in the aggregate) accrues over time.

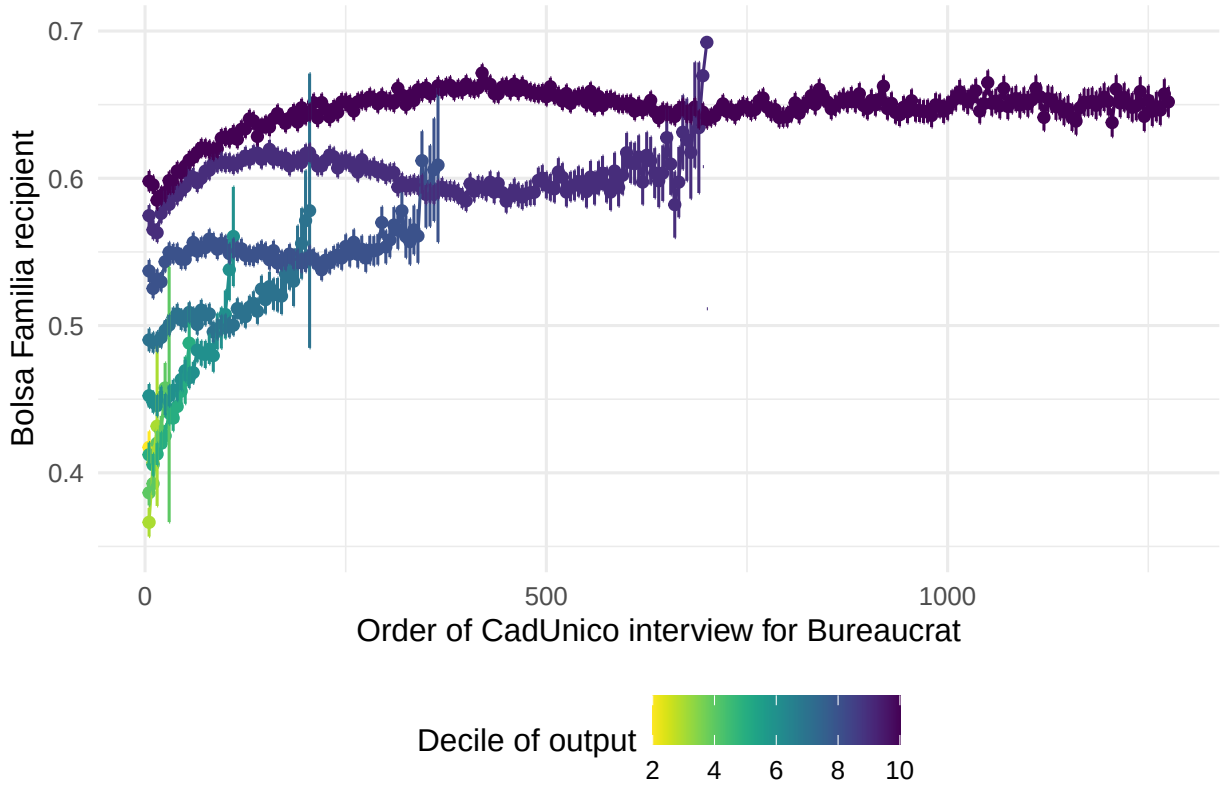

Figure A12: The evolution of eligibility classifications, conditional on decile of the number of total interviews in the register.

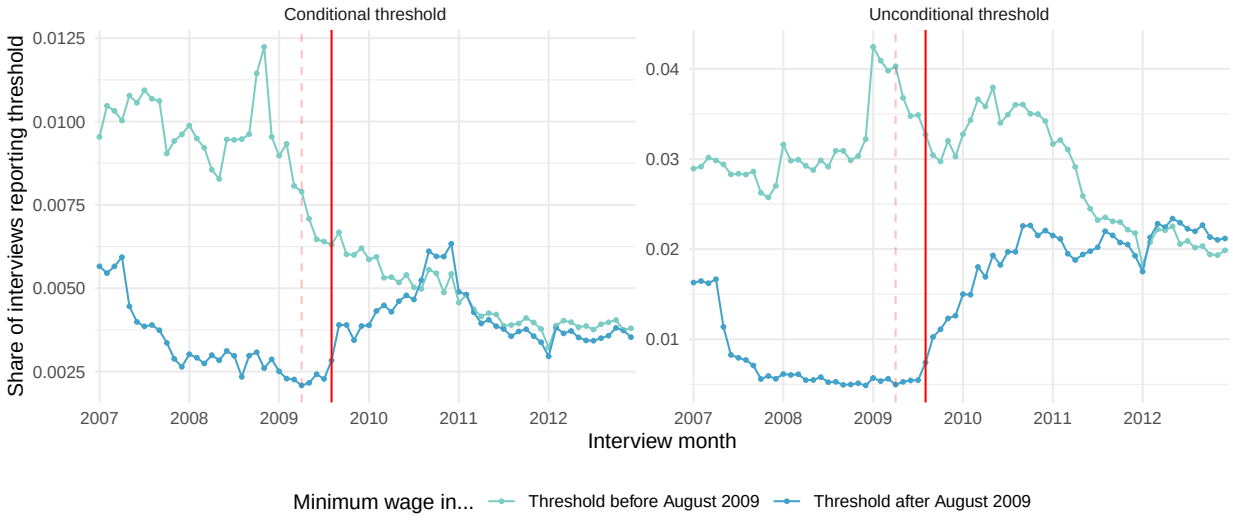

Figure A13: The proportion of households with an income at the each eligibility cut-off, by month. The increase in the blue starting in August 2009 corresponds to the adjustment in the unconditional and conditional cut-offs for Bolsa Familia eligibility.

Characteristic	All municipalities	Not in sample	In sample	Difference p-value
REGION				
Caribe	0.178 (0.383)	0.261 (0.44)	0.14 (0.347)	0.025
Centro Oriente	0.333 (0.472)	0.264 (0.441)	0.366 (0.482)	0.152
Centro Sur	0.104 (0.306)	0.115 (0.319)	0.1 (0.3)	0.742
Eje Cafetero - Antioquia	0.162 (0.368)	0.106 (0.308)	0.188 (0.391)	0.153
Pacífico	0.061 (0.239)	0.06 (0.238)	0.061 (0.24)	0.978
Llano	0.162 (0.368)	0.195 (0.397)	0.146 (0.354)	0.366
MUNICIPAL CATEGORY				
Category 1	0.025 (0.155)	0.032 (0.175)	0.021 (0.144)	0.644
Category 2	0.016 (0.127)	0.017 (0.13)	0.016 (0.125)	0.948
Category 3	0.017 (0.13)	0.011 (0.107)	0.02 (0.14)	0.676
Category 4	0.021 (0.143)	0.02 (0.14)	0.021 (0.144)	0.955
Category 5	0.035 (0.183)	0.026 (0.159)	0.039 (0.193)	0.65
Category 6	0.882 (0.323)	0.885 (0.319)	0.88 (0.325)	0.917
Special Category	0.005 (0.067)	0.009 (0.092)	0.003 (0.052)	0.496
POPULATION				
Population	45,761 (268,038)	53,223 (169,944)	42,319 (302,808)	0.801
NATIONAL PLANNING DEPARTMENT GOVERNANCE INDICES				
Municipal capacity index	50.769 (11.211)	48.647 (11.158)	51.753 (11.106)	0.062
Resource mobilization index	24.695 (17.496)	21.496 (15.632)	26.18 (18.115)	0.079
Resource execution index	67.3 (13.125)	67.894 (12.675)	67.025 (13.328)	0.66
Open government index	75.767 (26.162)	71.954 (28.029)	77.537 (25.071)	0.143
Territorial organization index	33.611 (12.127)	31.587 (12.552)	34.551 (11.815)	0.096
Public services index	48.309 (11.047)	47.373 (10.579)	48.744 (11.238)	0.41
Security and convivencia index	90.499 (6.284)	90.768 (6.244)	90.374 (6.303)	0.675

Table A3: Characteristics of Colombian municipalities and municipalities in and outside the sample of SISBÉN administrators. The table reports means and standard deviations (in parentheses) for each municipal covariate. The right column reports the (two-sided) p-value on the difference in means between the population (all municipalities) and the sample.

	ICC $n = 459$	SISBÉN and SECOP $n = 375$	SISBÉN and Regalías $n = 373$	SECOP and Regalías $n = 260$
Current Mayor	0.09	0.05	0.13	0.03
Contractor	0.13	0.18	0.06	0.12
Oversight frequency	0.07	0.04	-0.01	-0.07
Oversight by mayor	0.03	0.08	-0.08	0.04
Goals set	0.01	0.01	0.02	0.04
Perceived freedom	-0.04	-0.06	-0.02	-0.12

Table A5: Intra-class correlation and within-municipality correlations by bureacrat portfolio (SISBÉN, SECOP, or Regalías). Note that these correlations are estimated only for municipalities in which at least two of the bureaucrats responded to the survey. n gives the number of municipalities for the correlations estimated in each column.

	Share of households enrolled in 2021			
	(1)	(2)	(3)	(4)
PANEL A: HOUSEHOLDS IN POPULATION CENTER				
Appointed by mayor	-0.013	-0.025	-0.031^{+}	-0.018
	(0.014)	(0.015)	(0.016)	(0.015)
Num. Obs.	749	749	749	749
DV Mean (Std. Dev.)	0.823 (0.209)	0.823 (0.209)	0.823 (0.209)	0.823 (0.209)
PANEL B: HOUSEHOLDS IN RURAL AREA				
Appointed by mayor	-0.001	-0.023	-0.030	-0.016
	(0.020)	(0.021)	(0.023)	(0.022)
Num. Obs.	748	748	748	748
DV Mean (Std. Dev.)	0.873 (0.280)	0.873 (0.280)	0.873 (0.280)	0.873 (0.280)
PANEL C: ALL HOUSEHOLDS				
Appointed by mayor	-0.006	-0.025	-0.030^{+}	-0.014
	(0.015)	(0.017)	(0.017)	(0.015)
Num. Obs.	748	748	748	748
DV Mean (Std. Dev.)	0.850 (0.214)	0.850 (0.214)	0.850 (0.214)	0.850 (0.214)
Contractor		✓	✓	✓
Bureaucrat covariates			✓	✓
Municipal covariates				✓
Missingness indicators		✓	✓	✓

$^{+}p < 0.1$,* $p < 0.05$,** $p < 0.01$,*** $p < 0.001$

Table A6: This table replicates the specifications in Columns (1)-(4) of Table 6. Heteroskedasticity robust standard errors in parentheses.

Zone	Category	Probability that category enrollment shrunk from 2021 to 2022		
		Retained Bureaucrat	Appointed Bureaucrat	Difference ($A - R$)
U	Extreme poverty	0.020 [0.004, 0.035]	0.011 [0.001, 0.021]	-0.008 [-0.027, 0.009]
U	Moderate poverty	0.023 [0.006, 0.040]	0.025 [0.010, 0.039]	0.001 [-0.021, 0.024]
U	Vulnerability	0.598 [0.542, 0.654]	0.731 [0.690, 0.772]	0.134 [0.064, 0.203]
U	Neither	0.661 [0.607, 0.714]	0.761 [0.721, 0.800]	0.099 [0.032, 0.166]
R	Extreme poverty	0.003 [-0.003, 0.009]	0.002 [-0.002, 0.006]	-0.001 [-0.008, 0.006]
R	Moderate poverty	0.139 [0.100, 0.178]	0.114 [0.085, 0.144]	-0.025 [-0.074, 0.024]
R	Vulnerability	0.823 [0.780, 0.867]	0.876 [0.846, 0.867]	0.053 [-0.000, 0.105]
R	Neither	0.893 [0.859, 0.929]	0.935 [0.912, 9.958]	0.041 [-0.001, 0.083]

Table A7: The probability that enrollment in a category shrunk between 2021 and 2022 in each type of zone. "U" corresponds to the municipal center and "R" corresponds to populations outside the municipal center. Note that overall enrollment increased by 19% in the municipal centers and 37% outside municipal centers over this period.

	(1)	(2)	(3)	(4)
PANEL A: SHARE OF INTERVIEWED HOUSEHOLDS IN BOLSA FAMILIA ROLL				
Appointed by mayor	0.048***	0.049***	0.035***	0.029***
	(0.004)	(0.004)	(0.004)	(0.004)
Observations	33,671	33,671	33,671	33,671
DV Mean (Std. Dev.)	0.530 (0.279)	0.530 (0.279)	0.530 (0.279)	0.530 (0.279)
Within-muni. DV std. dev.	0.217	0.217	0.217	0.217
PANEL B: SHARE OF HOUSEHOLDS UNDER INCOME THRESHOLD - SHARE BF BENEFICIARIES				
Appointed by mayor	-0.027***	-0.028***	-0.021***	-0.018***
	(0.004)	(0.004)	(0.004)	(0.004)
Observations	33,671	33,671	33,671	33,671
DV Mean (Std. Dev.)	0.134 (0.219)	0.134 (0.219)	0.134 (0.219)	0.134 (0.219)
Within-muni. DV std. dev.	0.193	0.193	0.193	0.193
Municipal FE	✓	✓	✓	✓
Contractor Indicator		✓	✓	✓
Bureaucrat Characteristics			✓	✓
Interview experience FE				✓

Table A8: This table reports estimates analogous to those in Figure 5 but for inclusion in Bolsa Familia (Panel A) and the gap between the share of housholds that meet the higher (conditional) income qualification and the share of households included in Bolsa Familia (Panel B). Standard errors are clustered at the municipality level.