

FOR ONLINE PUBLICATION
APPENDIX
for
BUILDING STATE AND CITIZEN:
How Tax Collection in Congo Engenders
Citizen Engagement with the State

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1 Background Information

This section contains additional details about the setting and the property tax campaign of 2016. First, Table 1 shows summary statistics from the baseline and endline surveys.

Table 1: Summary statistics

	Mean	SD	Min	Max	<i>N</i>
Baseline survey data					
Knows tax ministry	0.400	0.490	0	1	2384
Knows property tax	0.0562	0.230	0	1	2384
Reports past visit from tax collector	0.122	0.327	0	1	2384
Trusts provincial government	0.559	0.497	0	1	2383
Voted in 2011 national election	0.738	0.440	0	1	2384
Member of political party	0.263	0.440	0	1	2384
Endline survey data					
Age	48.74	17.09	18	102	2913
Female	0.410	0.492	0	1	2913
Born in Kananga	0.409	0.492	0	1	2913
Years of education	9.609	4.135	0	19	2909
Literate	0.799	0.401	0	1	2913
Unemployed	0.419	0.494	0	1	2913
Household monthly income (USD)	106.4	194.0	0	4800	2903
Lives in non-mudbrick house	0.467	0.499	0	1	2911
Has any source of electricity	0.186	0.389	0	1	2913
Owns motorbike	0.149	0.356	0	1	2913
Owns car or truck	0.0175	0.131	0	1	2913
Works for government	0.234	0.424	0	1	2913

Summary statistics from baseline survey (conducted in March-April 2016) and endline survey (conducted in January-May 2017).

1.1 The 2016 property tax campaign

As noted in the paper, random assignment of the 2016 property tax campaign occurred on the neighborhood level. Figure 1 shows a zoomed-in version of neighborhoods in one part of the city, and Figure 7 shows the extent of

neighborhoods across the city. Neighborhood boundaries approximate roads, ravines, and other landmarks that are easily recognizable from the ground.

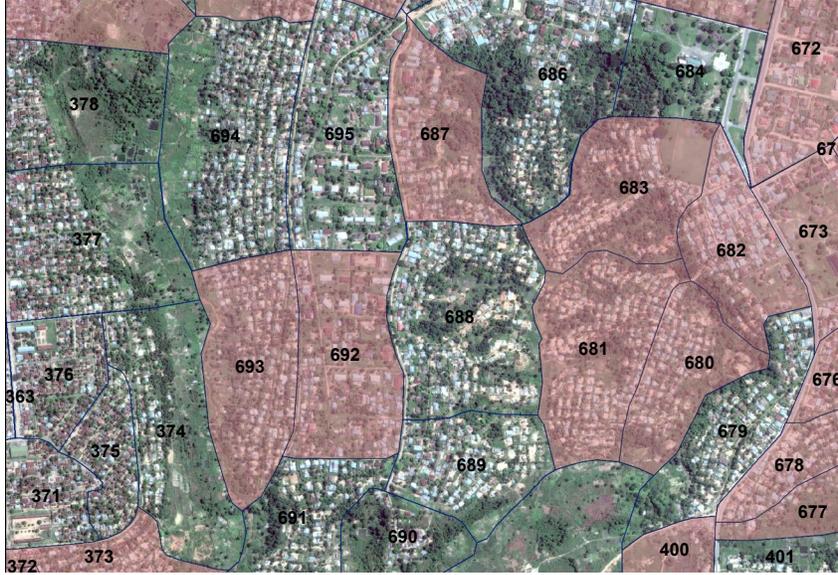


Figure 1: Neighborhoods in Kananga (red indicates treatment)

Tax collectors used tablets and handheld receipt printers. Receipts contained the unique household identification code assigned by collectors during property registration (Figure 2)¹ Only printed receipts were considered valid for the campaign.

Table 2 contains the raw data on tax compliance for the endline sample. The roughly 10 percentage-point increase in compliance reported in the paper using the full administrative data is mirrored in the endline sample.

To characterize tax compliers, Table 3 first reports complier characteristic ratios in the spirit of the κ -weighting method in Abadie (2003)² These are the ratio of the first stage for individuals of the characteristic to the overall first stage. Tax compliers tend to have more education, income, and wealth

¹At times, household codes were erased (usually due to rain). In such cases, I validate self-reported tax payment in two ways. First, I accept a valid printed receipt bearing the property owner’s correct name (presented to the enumerator at endline) as proof of payment. Second, I use fuzzy name matching within neighborhoods with administrative records among individuals who claimed to have paid the tax but could not produce a receipt.

²See also the discussion in (Angrist and Pischke 2008, p. 171).

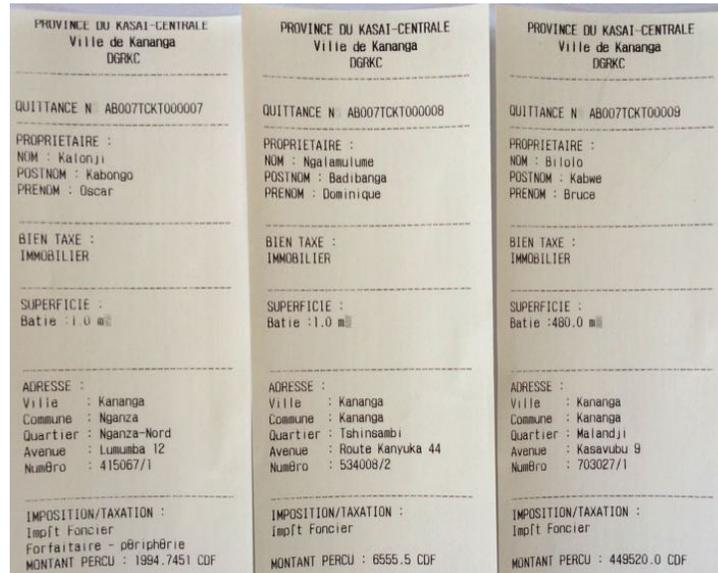


Figure 2: Three examples of printed receipts from the property tax campaign.

Table 2: Tax payment in endline sample

	Nonpayers	Payers	Compliance
Control	1210	0	0%
Treatment	1534	169	9.92%
Total	2744	169	5.80%

Data: endline survey merged with the government’s tax database.

(by several proxies). They are also more likely to be formally employed and less likely to run a business (most of which are small, informal businesses).

Table 3: Tax complier characteristics

	Complier characteristic ratio
Male	1.092
Age above median	0.999
Migrant	0.974
Majority ethnic group (Luluwa)	0.969
Literate	1.194
University graduate	1.223
Income above median	1.279
Wealth above median	1.308
Has electricity	1.549
Unemployed	0.868
Business owner	0.859
Paved or improved road outside house	1.102
Public lighting outside house	1.169

Tax complier characteristic ratios are the first stage for individuals of the characteristic over the full first stage.

1.2 Bribe payment

Payment of bribes could create another possible channel through which the tax campaign might affect participation. For instance, citizens might update their beliefs about the government in different ways after paying a bribe versus paying a tax (or paying nothing at all). If the tax campaign caused an average increase in bribes, citizens might have updated negatively about the professionalism of the government. However, this section demonstrates that there is little evidence that the tax campaign increased bribe payment. Indeed, levels of bribe payment were low across treatment groups.

Two types of collusive bribes are plausible in this context. First, households could have paid the collector a smaller amount than the tax, $b < \tau_1$, where τ_1 in this case is the flat tax of 2,000 CF. The collector might have accepted b in exchange for a promise not to enforce the true rate for the rest of the year. The clearest way to measure such bribes is through household self-reports using local codes for bribes. This type of bribe is typically known as paying the “transport” of the tax collector. Alternatively, individuals might

speak of making an “arrangement” with the tax collector³ The measure of bribe self reports, *Paid bribe*, takes the value of 1 if a participant reported an “arrangement” or having paid “transport.” I examine the intensive margin by using self-reports of the total amount paid, *Bribe amount*.

Second, ‘midrange’ houses, which face a higher levy, could have paid the collector $\tau_1 + b < \tau_2$, where τ_2 here is the flat tax of 6,600 CF.⁴ In this case, the owner of a midrange house would have paid the 2,000 CF rate plus a bribe in exchange for “reclassifying” the house to the lower tax rate. To measure reclassification bribes, a property tax expert from the provincial tax ministry, who did not conduct field-based tax collection but who had initially trained all tax collectors, examined photographs of each house in the sample. Examining each photo on a tablet, one at a time, he assigned to each the correct rate, without knowledge of what the field-based collectors assigned (or the identity of the assigned collector). Comparing the two rates enables me to identify mismatches, in which the household should have paid 6,600 CF but actually paid 2,000 CF. Although it is possible that collectors made mistakes when classifying households, this is unlikely because (a) the key distinction between houses that should pay 6,600 CF and 2,000 CF is obvious (based on the type of building material), and (b) collectors were incentivized to tax households at the true rates since they received as a bonus a constant percentage of what they deposited to the state. *Paid bribe* equals 1 in such cases of reclassification bribes, as well.⁵

Measurement error is always a concern when asking about bribes. However, paying small bribes like these is not taboo in this context. In another project on bribe payment at Kananga’s roadway tolls, nearly 50% of participants openly told enumerators that they bribed the toll officer to avoid paying the full amount (Reid and Weigel, 2017). Nonetheless, to assuage concerns about self-

³Other local codes for bribes include giving the collector a “coffee,” “tea,” “beer,” and “water.”

⁴Midrange houses make up less than 10% of the properties in Kananga.

⁵Payment of bribes is analogous in control neighborhoods. Households could pay bribes to field-based collectors who have strayed beyond the assigned borders of a treated neighborhood, or they could have paid bribes at the tax ministry (where all control individuals were in principle suppose to pay the tax).

reported bribes, I also collected two other measures of bribes. First, *Others bribe* is the perceived frequency of bribe payment among other households on the respondent’s street.⁶ Second, *Going rate* is the respondent’s estimate of ‘how much would one have to give the tax collector so that he/she will pass to the next house?’ These bribe measures are inspired by Khan et al. (2015).

Table 4 shows the average effects of the tax campaign on bribe payment. No coherent pattern emerges. The point estimate for the household bribe payment indicator is a precisely estimated zero. There is a marginally significant *decrease* in reported bribe amounts due to the tax campaign. In contrast, the point estimate is positive and marginally significant when *Others bribe* is the dependent variable. But the corresponding estimate for the going rate of bribes is of tiny magnitude and not statistically different from zero. Note that, in contrast to these null results on perceptions of others paying bribes, treated citizens did update substantially about the amount of tax their neighbors were paying (Table 8 in the paper).

Further evidence comes from considering participants’ self-reported beliefs about why some people in Kananga did *not pay* the property tax. Of the seven possible reasons evaluated by participants, bribe payment was considered the least important (see Figure 3), reinforcing the plausibility of the low measured incidence of bribes in this setting.

Some readers familiar with high rates of reported bribe payment in other parts of the DRC (Paler et al., 2016; Sanchez de la Sierra and Titeca, 2018), a paradigmatic ‘kleptocracy,’ might be puzzled by this null result and the low level of bribe payment in general.⁷ However, upon closer reflection, this result is unsurprising for several reasons. First, collectors faced a considerable degree of uncertainty about the government’s plans to audit their work and pursue sanctions if bribes were found to have been paid. This uncertainty existed because this was the first-ever citizen tax campaign in Kananga. Collectors had no precedent on which to base expectations about the probability of government monitoring and punishment. Moreover, during the campaign,

⁶*Others bribe* is standardized to facilitate interpretation of coefficient magnitude.

⁷I also anticipated an increase in bribe payment, as noted in the pre-analysis plan.

Table 4: No coherent effects of the campaign on bribe payment

	Paid bribe	Bribe amount	Others bribe	Going rate
Campaign	0.000 (0.006)	-23.856* (12.628)	0.091* (0.048)	7.192 (49.964)
Covariates	Yes	Yes	Yes	Yes
Stratum FE	Yes	Yes	Yes	Yes
R^2	0.017	0.016	0.051	0.070
Observations	2913	2913	2046	2566
Clusters	356	356	343	356
Control Mean	0.023	36.345	-0.023	710.341

Paid bribe is an indicator for individuals' self-reported bribe payments using local codes for bribes. It also equals 1 in the case of 'reclassification' bribes. *Bribe amount* is self reported amount paid in bribes. *Others bribe* is a standardized variable increasing in the perceived frequency that one's neighbors are paying bribes instead of the property tax. *Going rate* is the estimated amount of money that it would take to bribe a tax collector in lieu of paying the property tax. Data: endline survey.

the tax ministry suspended an agent for collecting bribes from firms in place of the rental tax. Although the agent was unaffiliated with the property tax campaign, this disciplinary action was explicitly highlighted by tax ministry directors to the collectors working on the 2016 campaign, potentially deterring their future bribe taking. Finally, the tax campaign represented, in most cases, a one-shot game between collector and household. But collusive bribery between bureaucrats and citizens is more likely in repeated games, as when the same collector is responsible for collecting property taxes in a neighborhood year after year (Khan et al., 2015).

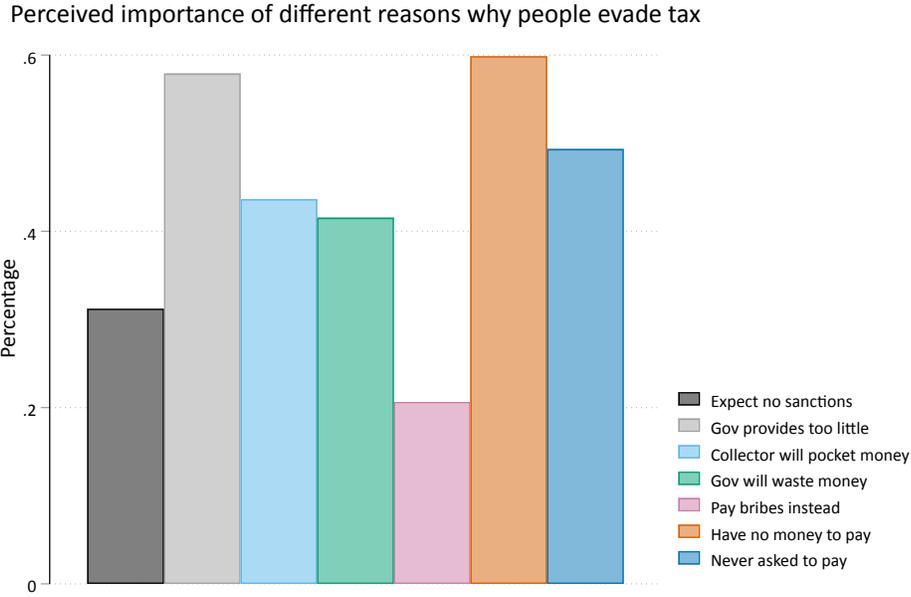


Figure 3: Percentage of respondents who deemed the above reasons ‘very important’ or ‘important’ in explaining why some people evade the property tax.

1.3 Kamuina Nsapu militia activity in Kananga

In August 2016, a clash between the national police and a customary chief in Dibaya territory led to the death of the chief and the beginning of the Kamuina Nsapu militia movement. Although the group’s demands were triggered by local grievances, very shortly the Kamuina Nsapu evolved into a broader protest movement against the national government. In December 2016, President Joseph Kabila did not step down at the end of his constitutionally mandated term. Protests shook Kinshasa and many cities across Congo, and the Kamuina Nsapu took up arms. A cycle of tit-for-tat violence between the army and the Kamuina Nsapu left thousands dead and hundreds of thousands displaced (ReliefWeb, 2017).

These unfortunate events do not affect the internal validity of the research design, as the randomization nets out any broader trends that affect the city as a whole. But endline data collection was more difficult as a result. In particular, the research team could not administer endline surveys in one commune

(Nganza), representing approximately 16% of the city, in which the conflict was most acute.⁸ Individuals in this commune could not be sampled or invited to participate in the endline survey as a result.

The conflict must also inform the interpretation of the external validity of results concerning attitudes toward the provincial government. Although directives to the military during the conflict came from the national government, citizens may have also blamed the provincial government for the conflict that marred the province.

The instability in Kananga would most likely lead causal effects of the tax campaign on participation to be more muted. Because attending a townhall meeting or submitting a government evaluation required traveling across the city, insecurity would have effectively made these forms of participation more costly. Indeed, the government ultimately decided to cancel townhall meetings after April 1 due to increased violence in Kananga. Across the city, the government recommended all citizens to stay in their homes during this period, when there was frequent fighting between the military and militia within the city’s perimeter. Although it is difficult to ascertain precisely how this insecurity interacted with the experiment, the most obvious interpretation is that it would have suppressed participation in both treatment and control.

2 Experimental design and measurement

2.1 Cross-randomized interventions

This study also included two cross-randomized interventions intended for a separate paper on corruption. First, a citizen information treatment was randomized on the household level in all neighborhoods. This treatment was embedded in the informational fliers distributed in early 2016 announcing the property tax campaign. In addition to the basic announcement, treatment fliers mentioned specifically (1) the tax rates that households face, and (2)

⁸This commune is home to many migrants from Dibaya, where the Kamuina Nsapu movement originated. As such, it was the focal point of the conflict in Kananga, even though the majority of the violence occurred in rural areas outside the city.

a photograph of the type of printed receipt households should receive upon payment. Second, collectors were informed that half of treated neighborhoods would be ‘audited’ by the tax ministry leadership. Collectors learned ex ante exactly which neighborhoods these were. The audits did not appear to concern the collectors or their superiors because there was little evidence of widespread bribe taking (as noted previously). More information about both interventions can be found in the study’s pre-analysis plan available in the AEA RCT Registry.

Key baseline covariates were balanced across the relevant treatment and control groups for these cross-randomized interventions, as shown in the pre-analysis plan. Additionally, within the endline sample, receipt of the treatment flier is balanced across individuals in treatment and control. A difference in means test fails to reject the null of equivalence ($t = -0.91$). Table 5 summarizes the three interventions (the on-the-ground tax campaign, audits, and informational fliers).

	Treatment		
	Audit	No Audit	Control
Info	65	62	88
No Info	60	66	90

Table 5: Neighborhoods (clusters) in each treatment cell.

2.2 Endline sampling and probability weights

This section provides more detail about endline sampling. As noted in Section 3 in the paper, selection occurred in two steps. First, enumerators conducted a short screening survey of roughly 20 surveys per neighborhood. Second, from those 20 households, 10 were selected and invited to participate.

As with the baseline survey, enumerators randomly sampled households for the screening survey by following a skip pattern until they walked up and down every street in a neighborhood. If they finished this exercise but had not yet reached the target of 20 screening surveys, they were instructed to choose a different path through the neighborhood orthogonal to the previous

path and continue sampling. If they reached 20 before they had walked down all neighborhood streets, they continued until they reached the end, exceeding the target number of surveys.

After enumerators had randomly administered roughly 20 screening surveys, recording basic household attributes and the eligibility of potential participants, I selected a subsample of eligible participants in Stata. First, I took 4 fully random households from the full set. Second, I selected an additional 6 households per neighborhood based on observed house quality. Assigning higher probability to higher quality houses (e.g. those built with modern materials other than mudbricks) focuses on the population most affected by the tax campaign. Tax collectors differentially targeted higher quality houses, paying them more visits and collecting more tax from them. Oversampling these houses for the endline survey means the unweighted estimates concern this targeted population. It also enables analysis of heterogeneity by house quality, as in the robustness checks shown in Section 4, and estimation of ‘reclassification bribes’ (Section 1.2).

Specifically, for each screening survey respondent, I calculated a house quality index based on characteristics of the compound: the roof, walls, the number of total buildings, and the accessibility to a primary or secondary avenue. The top 6 houses were selected for endline survey enumeration (the “household quality sample”), along with the 4 random draws (the “endline random sample”). The result of this procedure is a slightly higher proportion of relatively higher quality houses in the endline sample. Figure 4 demonstrates this shift graphically: the endline sample is slightly to the right of the full screening survey sample in terms of estimated house quality.

Because of this sampling process, the (unweighted) estimates reported in the paper are not representative of the full population of Kananga, but rather for a slightly better-off sub-population of the city that was more targeted by the tax campaign. For completeness, in robustness tables in Section 4, I include specifications with probability weights to make estimates fully representative of Kananga’s population.

I construct weights as follows. First, for each individual i with house quality

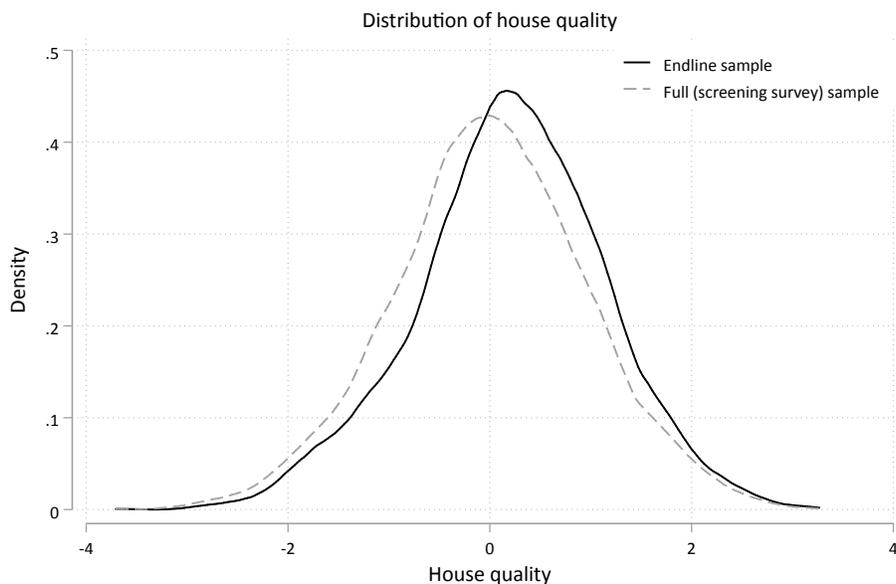


Figure 4: Densities of estimated house quality for the endline sample and the full screening survey sample.

x in neighborhood j , I estimate a weight, w_{ij}^{within} , to adjust for the higher selection probability for relatively high quality houses:

$$w_{ij}^{within} = \frac{f_j^{pop}(x_i)}{f_j^{samp}(x_i)} \quad (1)$$

where $f_j^{pop} \sim N(\mu_j^{pop}, \sigma_j^{pop})$, $f_j^{samp} \sim N(\mu_j^{samp}, \sigma_j^{samp})$, and the μ_j 's and σ_j 's reflect neighborhood-level empirical means and standard deviations, respectively.⁹ Second, I construct a between-neighborhood weight to account for the fact that the number of individuals in the endline sample is (roughly) constant across neighborhoods, but neighborhoods themselves have different numbers

⁹I tried using the empirical densities rather than relying on parametric assumptions, but the resulting weights had large numbers of extreme values. Imposing a normal distribution on neighborhood-level house quality is justified by the empirical distributions of house quality taken in the full endline and screening survey samples (Figure 4).

of property owners. This weight is simply:

$$w_j^{between} = \frac{n_j^{screening} / N}{n_j^{endline} / n} \quad (2)$$

where N is the total number of property owners in Kananga, and n is the total number of property owners in the endline sample. The two weights are then multiplied together and normalized to generate a probability weight that is used in regressions in Section 4. Figure 5 shows the distributions of the ultimate weights. As expected, individuals in the “endline random sample” receive the most weight because they are on average of lower house quality and thus underrepresented in the endline sample. By contrast, the “household quality sample” receives the least weight because these high-house-quality respondents are overrepresented in the endline sample. Using these weights in the main analyses does not substantially alter the results.

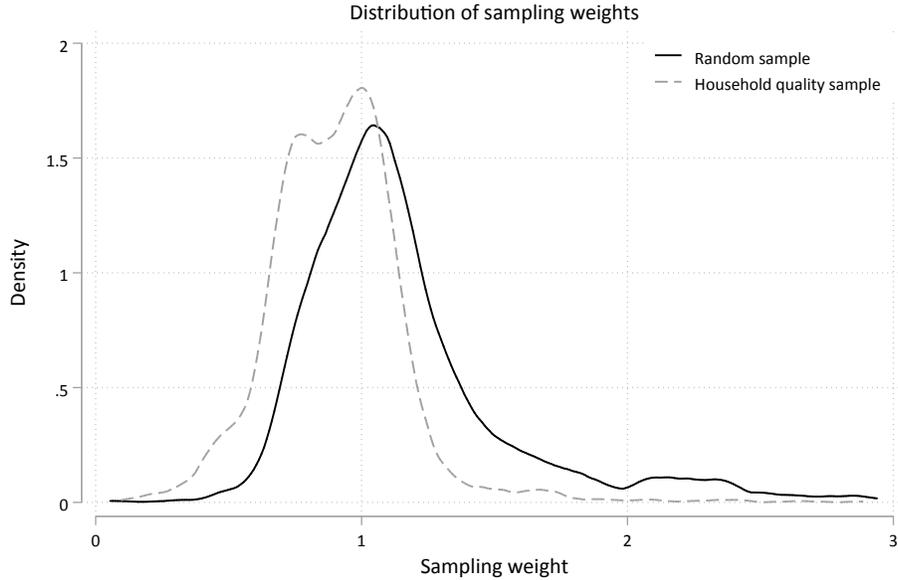


Figure 5: Distributions of the weights for endline subsamples.

2.3 Balance tests

Table 6: Balance checks

Neighborhood-level variables (baseline)	Coefficient	SE	p-value
Quality of roads	0.104	0.077	0.175
Quality of public lighting	-0.048	0.026	0.062
Unemployment	0.013	0.022	0.557
Household wealth index	-0.010	0.013	0.413
Access to electricity	-0.007	0.011	0.498
Past collector visits to neighborhood	0.013	0.024	0.588
Past tax compliance in neighborhood	0.012	0.075	0.872
Knows governor's name	0.016	0.037	0.669
Participation in elections, parties, protests	-0.002	0.015	0.881
Perception of government performance	0.017	0.011	0.125
Perception of government corruption	0.002	0.017	0.908
Trust in government	0.033	0.023	0.163
Importance of prov. govt. for public goods	-0.174	0.142	0.221
Individual-level variables (endline)			
Years of education	0.054	0.048	0.262
Monthly income	-0.027	0.028	0.336
Household wealth index	-0.120	0.066	0.070
Business owner	0.034	0.018	0.063
Government worker	-0.008	0.015	0.613
Multiple plot owner	0.011	0.016	0.479
Born in Kananga	0.004	0.019	0.834
Majority ethnicity	0.012	0.019	0.527
Literate	-0.017	0.014	0.236
Has renters in compound	-0.025	0.038	0.509
Has electricity	-0.015	0.045	0.731
Non-mudbrick walls	-0.036	0.032	0.262
Owns vehicle	0.001	0.015	0.945
Survey enumeration characteristics			
Attrition in endline survey	0.011	0.012	0.363
Refused endline survey midway through	0.001	0.005	0.926
Polygons dropped because of conflict	-0.015	0.020	0.463
Length of baseline survey	0.845	1.293	0.514
Length of midline survey	19.079	17.120	0.266
Length of endline survey	-13.836	22.620	0.541

Results from OLS estimations of Equation [1](#) in the paper with each of the listed variables as the outcome. See paper Section [4.4](#) for further details.

2.4 Townhall meetings and government evaluations

Endline respondents in treatment and control received invitations to a townhall meeting¹⁰ Figure 6 shows a sample invitation in French. The full text of the invitation in English reads as follows. “You are invited to a meeting on taxation in the presence of certain members of the Provincial Government of Kasai Central. This meeting will take place on the [DATE] at 10h00 in the Plenary Room of the Provincial Assembly. To ensure the meeting goes smoothly, please arrive by 9h00. Code to present at the entry: [CODE]. Without this invitation, entry to the Plenary Room will not be possible. So please don’t forget to bring this invitation with you.” In addition to receiving the invitation, respondents were read the following verbal prompt: “The meeting will be an opportunity to obtain information about taxation and public spending in Kananga and to ask questions to officials in the provincial government of Kasai Central.”



Figure 6: Invitation to townhall meeting held at Kananga’s Provincial Assembly building on February 20, 2017.

¹⁰The exception, as noted in the paper, is respondents sampled after April 1, when the provincial government discontinued the meetings due to insecurity in Kananga.

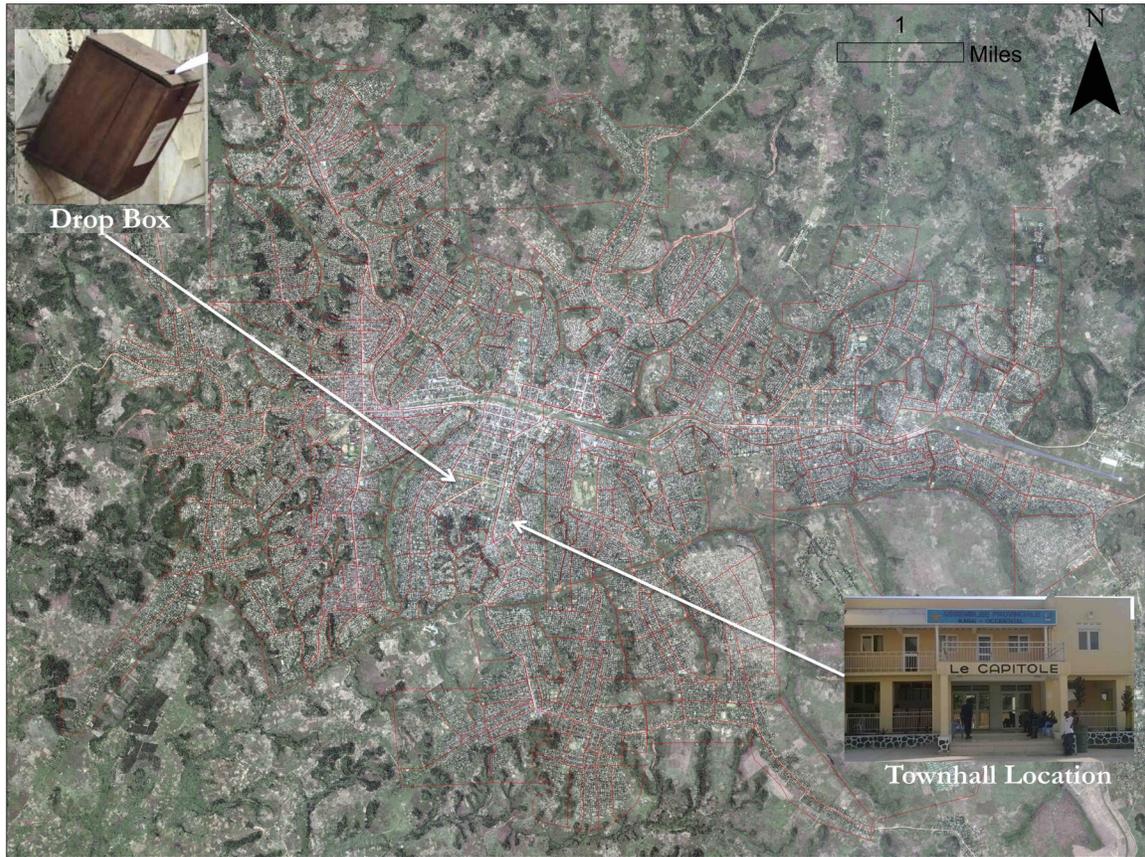


Figure 7: Locations of provincial assembly building (townhall meeting location) and evaluation form drop box in downtown Kananga.

Townhall meetings took place in the provincial assembly building, shown in Figure 8. The location of the building is shown on the map in Figure 7 in the paper. Individuals deposited their invitations when they arrived. The meetings were formal, with the finance minister and tax ministry directors making introductory presentations followed by a period of question and answer. The average meeting time was just over three hours.

To be able to characterize the proceedings, enumerators sat in the back of the meetings and recorded the topics of citizens' comments and questions. The distribution of topics appears in Figure 10. The main type of comment was what I characterize as 'tax bargaining,' i.e. citizens asking why they should pay taxes given the status quo quality of governance and public goods provision.



Figure 8: Provincial Assembly building in Kananga, the location of the townhall meetings. Photo credit: CAID 2016.

The next most common type of comment asked for factual clarifications about provincial taxation (e.g. concerning exemptions, tax rates, etc). Next most common were questions about provincial spending specifically, public goods provision, and provincial corruption. The atmosphere during these meetings was respectful but tense. Citizens were not afraid to express their strong dissatisfaction with the quality of the government in public and to make demands for transparency, accountability, and (above all) more service delivery.

All respondents in treatment and control also received government evaluations after the endline survey. They were read the following script concerning the evaluations: “Now, I’d like to give you an evaluation form that you can send to the provincial government. The form asks for your opinions about the work of the provincial government. It is your decision whether or not you want to deliver it in a locked suggestion box in Biancky [downtown Kananga]. It will be completely anonymous: that’s to say, if you choose to deliver it, the provincial government will never know your identity based on the information on the card. However, a summary of the information on the card and the cards themselves will be anonymously sent to the governor and other officials in the government so they know about your opinions and suggestions.”



Figure 9: Photograph of townhall meeting on January 30, 2017.

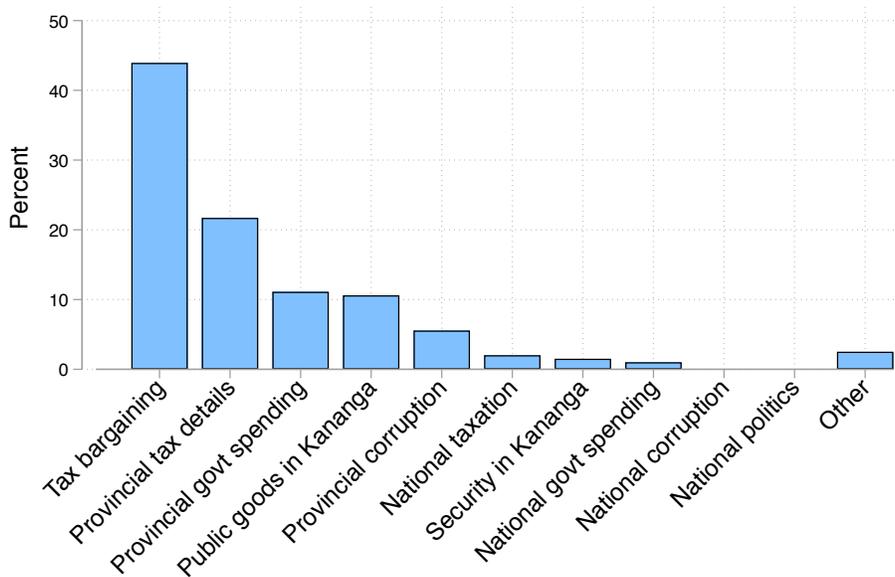


Figure 10: Topics of participants' questions and suggestions during townhall meetings in Kananga.

Kakanda ka matshinkidila Code :

Sungula mandamuna awudi musue :

A. Tshia kumpala, suaku usungule muenenu uwudi musue:

- 1: Ndi nsanka ne bukalinge bua mu polovinse wa Kasai Central ne tshiena musue kushintulula tshintu kampanda ku midimu yende nansha;
- 2: Ndi njinga ne bukalinge bua polovinse wa Kasai Central buenza mudimu wabu bimpe.

B. Mpindieu, suaku ungambile ne udi musue menemene, musue, mubenge anyi mubenge moshe ne munu muiku ku malu adi alonda aa.

Bukalinge bua polovinse budi ne tshia kuvudija mishindu ya bungi bua didibuinka dia bena ditunga ku mapangadika adidi diangata.

- Musue menemene
- Musue
- Mubenge
- Mubenge moshe ne munu muiku

Bukalinge bua polovinse budi ne tshia kuvudija mishindu ya bungi ya dipeta dia ngumu pa ndongamu ya bukalinge bua polovinse

- Musue menemene
- Musue
- Mubenge
- Mubenge moshe ne munu muiku

Diela nseke:

Bukalinge bua polovinse budi ne tshia kutula mfranga ya bungi bua kuenza bintu bia musoko kupitshila pa mfranga idibu batula bua bulombodi

- Musue menemene
- Musue
- Mubenge
- Mubenge moshe ne munu muiku

Bukalinge bua polovinse budi ne tshia kukeba muaba kampanda munda mua tshimenga undi mua kuikala nya kumanyisha malu pa bintu anyi midimu ya musoko.

- Musue menemene
- Musue
- Mubenge
- Mubenge moshe ne munu muiku

Figure 11: Example of government evaluation form.

The full text of the questions on the evaluation form, inspired by (Paler, 2013), is as follows:

First, please choose which of the following options you agree with most:

1. I am satisfied with the Provincial Government of Kasai Central and don't want to change anything about how it works
2. I want the Provincial Government of Kasai Central to do a better job.

Now please indicate if you strongly agree, agree, disagree, or strongly disagree with the following propositions.

- The Provincial Government of Kasai Central should provide more opportunities for public participation in its decisions.
- The Provincial Government of Kasai Central should provide more access to information about its programs.
- The Provincial Government of Kasai Central should spend more money on public goods and development and less money on administration.
- The Provincial Government of Kasai Central should create a place in town where I can report problems with public services.

Comments:

The drop box was located in downtown Kananga (Figure 12). The content of submitted evaluations was highly critical of the government: 91% of individuals who submitted an evaluation expressed disapproval of the government. They overwhelmingly demanded more participation, information, public goods, and a location to report problems with public services (Figure 13). Moreover, 39% of individuals chose to write in additional comments on the bottom of the form. The most common topics of these comments were general demands for better overall governance, more public goods, and improved monitoring of the provincial government (Figure 14). Table 7 replicates the treatment effects on submission of government evaluations while restricting to



Figure 12: Evaluation form drop box in downtown Kananga.
only critical or commented evaluation forms.

To further characterize the content of evaluation comments, the following are the 20 most common substantive words used on submitted forms: Government, Provincial, Should, Work, Population, Development, Better, Roads, Water, Improve, People, Policies, Public goods, State, Leaders, Erosion, Electricity, Country, Needs, Agents.

At the conclusion of the study, the evaluation forms were given to the governor along with a short report summarizing their contents and containing a typed list of all written-in suggestions. The finance minister and head of the tax ministry also received copies.

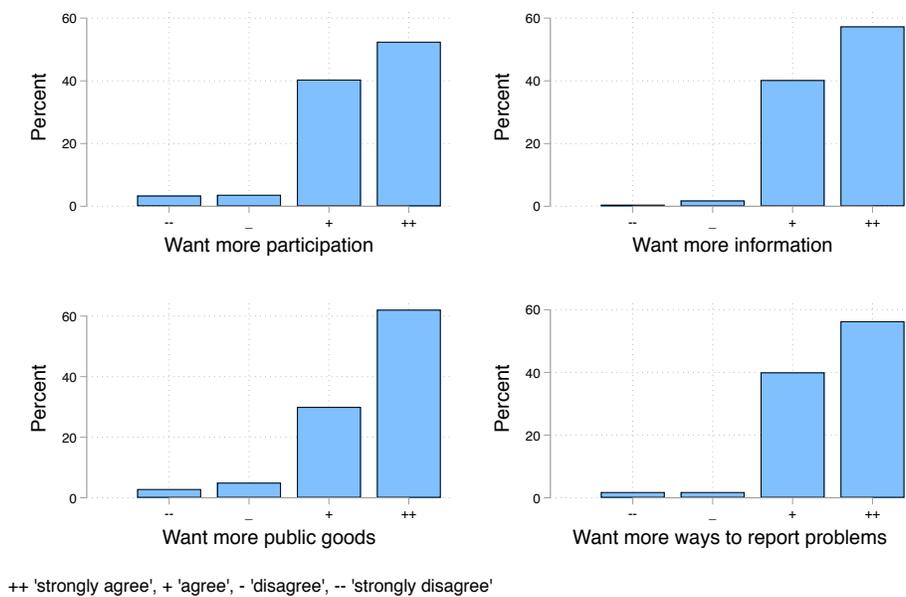


Figure 13: Content of submitted evaluations.

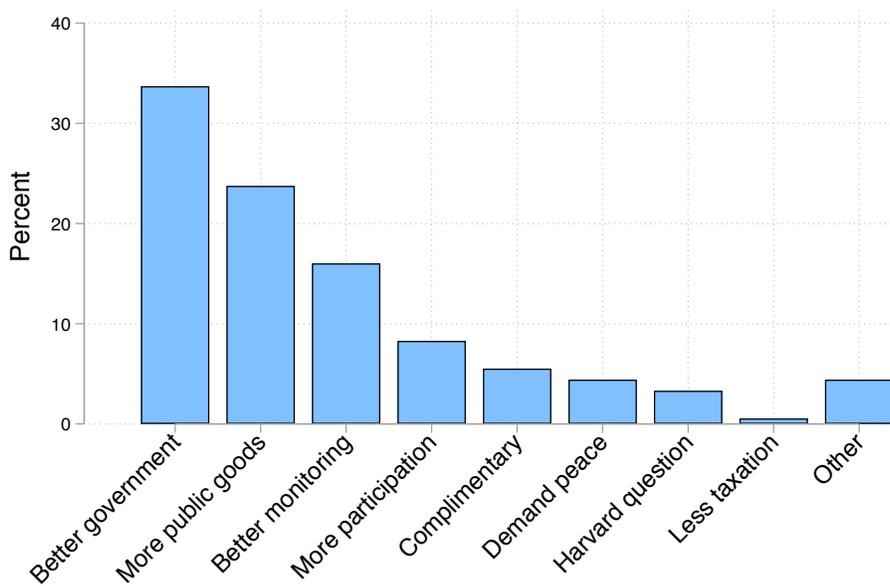


Figure 14: Written-in comments on submitted evaluations.

Table 7: Effects of the campaign on submission of critical and commented evaluations

	Critical evaluation (1)	Written-in suggestion (2)
Campaign	0.022** (0.010)	0.020** (0.008)
Covariates	Yes	Yes
Stratum FE	Yes	Yes
R^2	0.048	0.037
Observations	2913	2913
Clusters	356	356
Control Mean	0.078	0.033

Critical evaluation is an indicator variable for individuals who submitted an evaluation form that was critical of the government (determined by the respondent’s choice to check the box “I want the Provincial Government of Kasai Central to do a better job” on the form). *Written-in suggestion* is an indicator for respondents who dropped off evaluation forms with critical written-in suggestions for the government in addition to the five multiple-choice questions filled out by everyone (see Figure 11). Data: endline survey merged with participation records.

3 Additional tables and figures for the paper

3.1 Effects on political participation (Paper Section 5.2)

This section contains additional figures and tables referenced in the text of Section 5.2 in the paper (except for the main robustness checks, which appear in Section 4). First, Table 8 demonstrates that the main results on participation are unaffected when controlling for the distance between households and the venues of participation. Second, Table 9 shows Average Effect Size (AES) coefficients in estimating the effects of the tax campaign on the *Costly participation index*, following Clingingsmith et al. (2009).

Table 8: Effects of the campaign on participation controlling for distance to respondents' households

	Townhall meeting attendance (1)	Evaluation form submission (2)	Townhall or evaluation (3)	Townhall and evaluation (4)	Costly participation index (5)
Campaign	0.044** (0.020)	0.025** (0.012)	0.049*** (0.016)	0.028*** (0.010)	0.144*** (0.043)
Distance	-0.008 (0.014)	-0.014* (0.008)	-0.016 (0.011)	0.008 (0.006)	-0.016 (0.028)
Covariates	Yes	Yes	Yes	Yes	Yes
Stratum FE	Yes	Yes	Yes	Yes	Yes
R^2	0.062	0.056	0.068	0.039	0.070
Observations	1925	2903	2904	2904	2904
Clusters	251	355	355	355	355
Control Mean	0.185	0.101	0.178	0.035	-0.057

Distance is the average Euclidean distance from respondents' households to the Provincial Assembly building and to the evaluation drop box. As shown in Figure 7 in the paper, these locations are only 1 kilometer apart in downtown Kananga. Using this average distance is easiest to interpret when examining the outcomes in Columns 3-5. The estimates are nearly identical if I control for distance to the individual location of the form of participation (rather than the average) for outcomes in Columns 1-2. Data: endline survey merged with participation records and geographic estimates.

Table 9: Effects of the campaign on participation: AES coefficients for *Costly participation index*

	(1)	(2)	(3)	(4)
AES (Campaign)	0.099*** (0.037)	0.092** (0.037)	0.081** (0.038)	0.113*** (0.035)
Covariates	Paper	Basic	All	Paper
Stratum FE	Yes	Yes	Yes	Yes
Enum FE	No	No	No	Yes
Observations	2913	2913	2814	2913
Clusters	356	345	356	356

Estimated AES coefficients for *Costly participation index*, composed of indicators of attending a townhall and for submitting an evaluation form. Column 1 estimates AES coefficients for the basic specification shown throughout the paper. Column 2 does this for the first robustness specification (controlling for only the three basic covariates). Column 3 does this for the second robustness specification (controlling for the full set of possible covariates). Column 4 does this for the third robustness specification (controlling for enumerator fixed effects). Data: endline survey merged with participation records.

3.2 Alternative explanations (Paper Section 5.3)

This section contains the tables and figures referenced in Section 5.3 of the paper, concerning possible alternative explanations for the reduced-form effect of the tax campaign on participation. First, Table 10 shows that, across a range of measures, there do not appear to be differences in the trust in or familiarity with the research team across treatment and control. Second, Table 11 shows that, for a separate sample of 630 individuals tracked from baseline to endline, views of the provincial government do not appear to have deteriorated over the course of the experiment. This observation makes it unlikely that the treatment effect could be explained by declining participation in control rather than increasing participation in treatment. Third, Figure 15 shows that there is not an increase in the participation rate among households in treated neighborhoods close to a border with a control neighborhood, as one would have expected if awareness of the untaxed control was driving participation.

Table 10: Effects of the campaign on trust in and familiarity with the research team

	Trusts researchers (1)	Knows researchers (2)	Past Participant (3)	No phone (4)	Fake phone (5)
Campaign	0.059 (0.051)	-0.028 (0.048)	0.020 (0.037)	0.017 (0.020)	-0.014 (0.016)
Covariates	Yes	Yes	Yes	Yes	Yes
Stratum FE	Yes	Yes	Yes	Yes	Yes
R^2	0.037	0.122	0.016	0.124	0.037
Observations	2733	2913	2913	2913	2913
Clusters	356	356	356	356	356
Control Mean	-0.011	0.034	-0.014	0.183	0.077

Trusts researchers is a standardized measure of respondents' self-reported trust levels in foreign research organizations. *Knows researchers* indicates respondents who could identify the employer of the enumerator in the endline survey. *Past participant* indicates respondents who self-reported participation in past research activities conducted by our team in Kananga. *No phone* indicates that the respondent did not provide a phone number in the endline survey. *Fake phone* indicates that the respondent provided a bad or fake phone number. Data: endline survey.

Table 11: Within-individual changes in beliefs about the government from baseline to endline

	Responsibility of provincial government (sector-based) (1)	Trust in provincial government and tax ministry (2)	Share of taxes spent well (3)
Campaign X Post	0.674** (0.278)	0.183 (0.255)	-9.355 (38.888)
Post	0.004 (0.211)	0.022 (0.206)	38.539 (31.458)
Individual FE	Yes	Yes	Yes
R^2	0.032	0.004	0.006
Observations	1237	1233	1229
Clusters	304	304	304
Control Mean	2.513	5.475	486.924

Responsibility of provincial government (sector-based) is increasing in the perception that the provincial government should be a primary provider of public goods in Kananga. *Trust in provincial government and tax ministry* is an index increasing in trust of the government and tax ministry. *Share of taxes spent well* is increasing in the extent to which individuals expect tax money to be spent well rather than being wasted or stolen. These outcomes are observed twice for a subsample of 630 baseline participants who were found and re-surveyed after the tax campaign. *Post* indicates data collected after the tax campaign. *Campaign X Post* indicate data collected in the treatment group after the tax campaign. Data: repeat baseline sample (separate from main endline sample), used primarily and described in (Weigel, 2018).

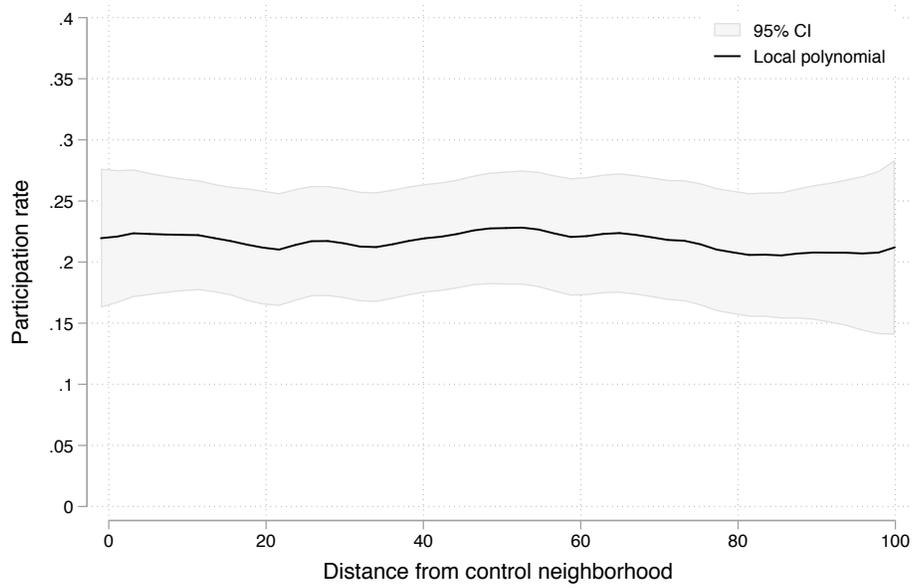


Figure 15: Participation in treatment neighborhoods by distance (in meters) to control.

3.3 Further analyses (Paper Section 5.4)

This section supplements the analyses in paper Section 5.4.

Table 12: Effects of the campaign on national and local participation

	Engagement with national politics (1)	Interest in politics (2)	Engagement with local city chiefs (3)
Campaign	0.031 (0.041)	0.033 (0.037)	-0.099** (0.045)
Covariates	Yes	Yes	Yes
Stratum FE	Yes	Yes	Yes
R^2	0.067	0.267	0.086
Observations	2913	2913	2825
Clusters	356	356	356
Control Mean	-0.005	0.021	0.041

Engagement with national politics is a standardized index increasing in current and expected future participation in national politics. *Interest in politics* is a standardized index increasing in revealed and self-reported interest in politics. *Engagement with local city chiefs* is a standardized index increasing in the revealed legitimacy of local city chiefs. See Section 6 for more information about the underlying survey questions in each of these indices. Data: endline survey.

First, Table 12 explores whether the tax campaign impacted participation at the national or local level. Although there are no detectable effects on self-reported national political participation or general interest in politics,¹¹ individuals in treatment neighborhoods do appear to view local city chiefs as less legitimate. Figure 26 shows the effects on the underlying survey questions about engagement with city chiefs. Treated individuals appear to consult with the most local city chief (avenue chief) less often and also to have diminished views of their quality. Opinions of the higher-level city chiefs (quartier and commune chiefs) appear less affected. This result is only suggestive, but it suggests that strengthening the capacity of the formal state can undermine local intermediaries.

Second, Table 13 explores spillover effects of the tax campaign, leveraging its cluster-level random assignment. There is evidence of spillovers in collec-

¹¹See Figure 25 for a coefficient plot for the individual survey questions.

tor visits, which is not surprising given that neighborhood borders are often not clearly indicated on the ground. However, such spillovers in visits do not appear to lead to a (detectable) spillover on tax payment in control neighborhoods. There is also no statistically significant evidence of spillovers on costly participation, though as noted in the paper, I may be underpowered to detect a small spillover effect on participation, which would in fact be consistent with the proposed mechanism (Section 6.2 in the paper).

Finally, Figure 16 examines the decay of the treatment effect over time, exploiting the random variation in the time gap between tax collection and opportunities for participation. The causal effect visibly declines over time, though this decline is only marginally statistically significant. Comparing lag 1 to lag 4, for instance, rejects equivalence at the 10% level.

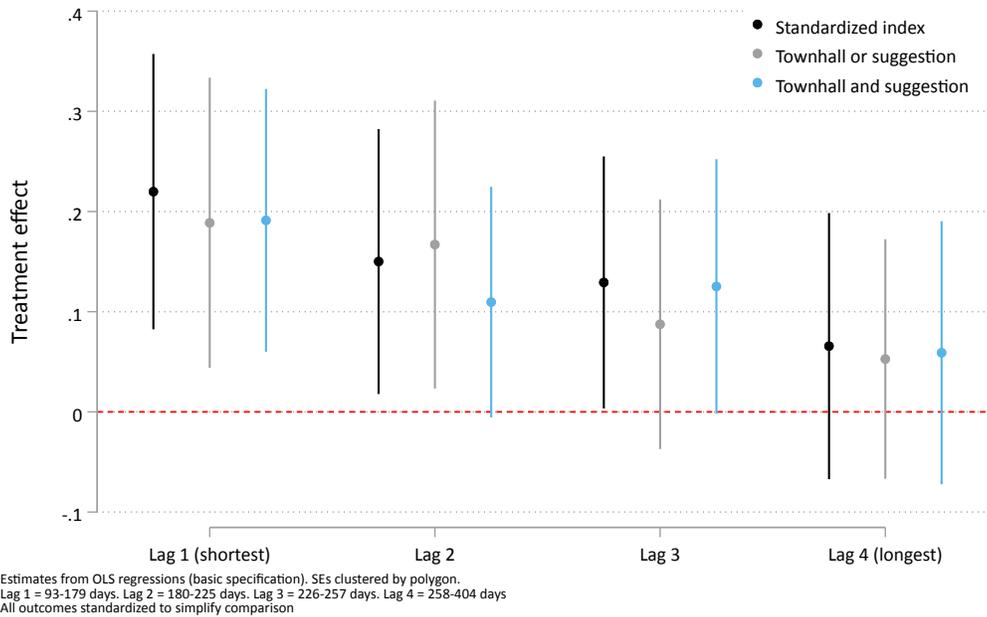


Figure 16: Heterogeneous effects of the campaign by time lag between tax collection and opportunities for participation.

Table 13: Spillover effects of the campaign on tax collector visits, compliance, and participation

	Visited by collectors		Paid property tax		Townhall or evaluation	
	(1)	(2)	(3)	(4)	(5)	(6)
Campaign	0.638*** (0.018)	0.639*** (0.017)	0.110*** (0.010)	0.112*** (0.010)	0.048*** (0.016)	0.048*** (0.016)
Treated neighbors	0.017* (0.009)		0.006 (0.005)		0.001 (0.009)	
Total neighbors	-0.015* (0.009)		-0.009* (0.005)		-0.005 (0.007)	
Treated borders		0.082*** (0.026)		0.006 (0.015)		0.017 (0.025)
Total borders		-0.056* (0.029)		-0.009 (0.015)		-0.027 (0.023)
Covariates	Yes	Yes	Yes	Yes	Yes	Yes
Stratum FE	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.419	0.421	0.086	0.085	0.067	0.067
Observations	2913	2913	2913	2913	2913	2913
Clusters	356	356	356	356	356	356
Control Mean	.16	.16	.0056	.0056	.18	.18

Treated neighbors is a count of the number of adjacent treated neighborhoods. *Total neighbors* is a count of the total number of adjacent neighborhoods. *Treated borders* is the total length (in kilometers) of borders shared with treated neighborhoods. *Total borders* is the total length of all neighborhood borders. Data: endline data merged with administrative data on tax payment and geographic measures on the neighborhood level.

3.4 Mechanisms (Paper Section 6)

This section contains supplementary tables and figures referenced in Section 6 of the paper. First, Table 14 examines the correlations between participation, tax payment, and visits from tax collectors. The positive correlation between visits and participation is suggestive of an informational mechanism like that proposed in the paper.

Table 14: Correlations of participation with payment and collector visits within treated neighborhoods

	Townhall or evaluation		
	<i>All</i> (1)	<i>Nonpayers</i> (2)	<i>All</i> (3)
Paid property tax	0.015 (0.034)		0.006 (0.034)
Visited by tax collector		0.045* (0.024)	0.050** (0.024)
Covariates	Yes	Yes	Yes
Stratum FE	Yes	Yes	Yes
Observations	1703	1505	1703
R^2	0.073	0.075	0.075
Clusters	211	211	211
Control Mean	0.178	0.178	0.178

Townhall or evaluation indicates participation in a townhall or submission of an evaluation. *Paid property tax* and *Visited by tax collector* indicate property tax payment and visits from collectors, respectively, as described on p. 12 in the paper. Data: endline survey merged with government tax database. The sample is restricted to treated neighborhoods. In Column 2, the sample is further restricted to non-payers in treated neighborhoods.

Second, Figure 17 shows the correlation coefficient between house visits and compliance for each individual tax collector. The figure shows that for the majority of collectors these quantities are only weakly correlated, strengthening the logic of the IV strategy developed in the paper.

Third, Figure 18 plots respondents' beliefs about the government's intended use of the property tax revenues it received from the campaign. Infrastructure and education are the two most commonly cited spending categories.

Fourth, Figure 19 compares GPS coordinates from the property register survey and the midline survey to identify compounds that the tax collectors

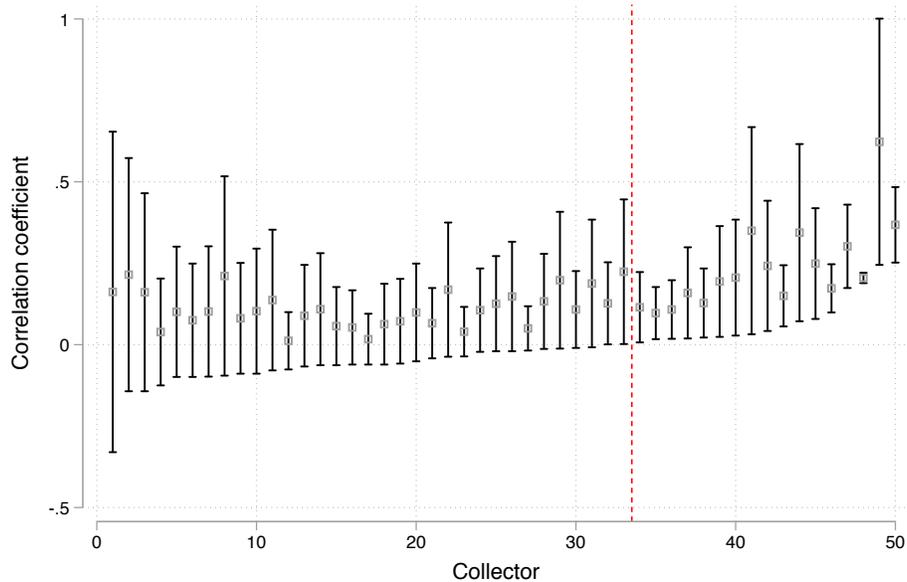


Figure 17: Plotted correlation coefficients (and 95% CIs) between visits and tax compliance for individual tax collectors.

did not visit. Although difficult to analyze, there do not appear to be clear patterns indicating that collectors strategically skipped certain areas.

Fifth, Table 15 shows the estimations from Table 8 but re-estimated *excluding taxpayers* in order to demonstrate that the broad patterns of updating about the capacity of the provincial government apply to non-payers as well.

Sixth, Table 16 compares the overall treatment effects on beliefs about government capacity (Column 1) to the correlation between (a) participation and these beliefs (Column 2), and (b) tax compliance and these beliefs (Column 3). Although this evidence is only suggestive, it is consistent with participators updating about the spending capacity of the government but also envisioning a need for citizen monitoring to ensure the government spends the new revenues well.

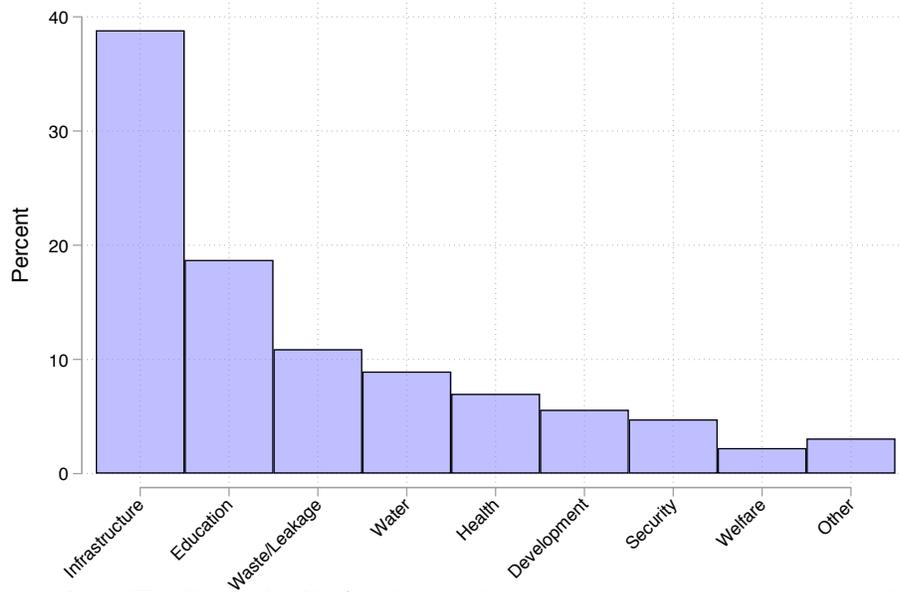


Figure 18: Endline beliefs about how the revenues raised during the 2016 property tax campaign would be spent



Figure 19: Households visited (blue) and skipped (red) by tax collectors during property register survey.

Table 15: Effects of the campaign on citizens' beliefs about the extractive and productive capacity of the provincial government (excluding taxpayers)

<i>Dependent variable</i>	β	SE	R^2	N	μ_c
<i>Panel I: Extractive Capacity - Coercive Compliance</i>					
Information about citizens	0.132***	0.045	0.081	2705	-0.080
Ability to punish evaders	0.021	0.049	0.042	2679	-0.017
<i>Panel II: Extractive Capacity - Voluntary Compliance</i>					
Performance of tax ministry	0.093*	0.048	0.065	2636	-0.076
Confidence in tax collectors	0.063	0.047	0.027	2596	-0.059
Taxes deposited to government	0.147***	0.045	0.041	2580	-0.119
Percent of neighbors who paid	0.257***	0.048	0.089	1816	-0.179
<i>Panel III: Productive Capacity</i>					
Ability to provide public goods	-0.019	0.054	0.039	2322	0.009
Performance of government	0.036	0.050	0.045	2640	-0.030
Tax revenues spent well	0.111**	0.050	0.054	2612	-0.062

Each row summarizes an OLS estimation of Equation 1 in the paper, with the sample restricted to non-taxpayers (cf. paper Table 8). β is the coefficient on the treatment indicator, followed by the cluster-robust standard error, R^2 , number of observations, and control group mean. There are 356 clusters. Data: endline survey.

Table 16: Effects of the campaign on extractive and productive capacity and correlations of beliefs with participation and payment

<i>Dependent variable</i>	<i>Full sample</i>	<i>Treatment group only</i>	
	Treatment Effect (1)	Participators vs not (2)	Payers vs not (3)
<i>Panel I: Extractive Capacity - Coercive Compliance</i>			
Information about citizens	0.152*** (0.044)	-0.098 (0.096)	0.179** (0.072)
Ability to punish evaders	0.048 (0.048)	0.206** (0.100)	0.200*** (0.075)
<i>Panel II: Extractive Capacity - Voluntary Compliance</i>			
Performance of tax ministry	0.122*** (0.047)	-0.031 (0.108)	0.338*** (0.070)
Taxes not pocketed	0.188*** (0.044)	-0.262** (0.121)	0.469*** (0.083)
Neighbors paid taxes	0.348*** (0.052)	-0.129 (0.116)	0.713*** (0.118)
<i>Panel III: Productive Capacity</i>			
Ability to provide public goods	-0.012 (0.053)	-0.040 (0.099)	0.078 (0.104)
Performance of government	0.045 (0.049)	-0.056 (0.119)	0.064 (0.082)
Taxes well spent	0.108** (0.050)	-0.173** (0.084)	-0.002 (0.091)

Each cell summarizes a separate OLS regression. The first column shows the treatment effect from estimating Equation 1 in the paper with the dependent variable indicated. The second column shows the correlation between participation (measured as attendance at a townhall meeting and submission of an evaluation form) and the dependent variable in the treatment group. The third column shows the correlation between payment and the dependent variable in the treatment group. Data: endline survey merged with government tax database and participation records.

4 Robustness checks

This section reports robustness checks for the main estimations in the paper, including the following specifications (variants of Equation [1](#) in the paper):

1. **Basic covariates:** This specification includes only gender, age, age squared in \mathbf{X}_{ijk} and nothing in \mathbf{X}_{jk} .
2. **All covariates:** This specification includes all covariates listed as possible covariates in the pre-analysis plan. On the individual level (i.e. in \mathbf{X}_{ijk}), these include gender, age, age squared, years of education, log income, wealth, a dummy for business owners, a dummy for government workers, and a dummy for multiple plot owners. On the neighborhood level (i.e. in \mathbf{X}_{jk}), these include baseline measures of average road quality, public lighting, wealth, past reported visits from government tax collectors, past reported payment of taxes, knowledge of the governor, political participation, evaluation of the provincial government, trust in the provincial government, views of government corruption, and views of the importance of the provincial government in public goods provision.
3. **Enumerator fixed effects:** This specification includes fixed effects for the 15 enumerators who administered the endline survey.
4. **Sampling weights:** This specification includes the sampling weights discussed in Section [2.2](#). The resulting estimates can be considered representative of all property owners in Kananga.
5. **House quality heterogeneity:** This specification examines heterogeneous treatment effects of the tax campaign by wealth, as proxied by house quality. This specification was mentioned in the pre-analysis plan as a way to shed light on mechanisms. In particular, the signal about the government sent by the tax campaign may be stronger among individuals with less prior contact with the government. Baseline data reveal that less wealthy individuals are a clearly defined subgroup with less past exposure to the state.^{[12](#)} Exploring heterogeneity by this dimen-

¹²Specifically, individuals who are below the median in a household wealth index (constructed using the observed quality of the roof, toilets, floor, access to electricity, and ownership of a vehicle) are 4.5 percentage points less likely to report ever seeing govern-

sion complements the analysis of mechanisms in Section 6 of the paper. Moreover, it is of general interest to explore if property tax collection is regressive in this context, and whether citizens' political responses vary by wealth. For simplicity, I examine heterogeneous treatment effects by interacting the campaign indicator with a binary measure of wealth (*House quality*) that equals 0 if a house is constructed with mud bricks (56% of the sample) and 1 if a house is constructed with fired bricks, cement, or any other modern material (44% of the sample). To be precise, I estimate the following equation:

$$y_{ijk} = \gamma_1 I_{jk}^{Campaign} + \gamma_2 I_{jk}^{Campaign} * House\ quality_{ijk} + \gamma_3 House\ quality_{ijk} + \alpha_k + \mathbf{X}_{ijk}\mathbf{\Gamma} + \mathbf{X}_{jk}\mathbf{\Phi} + \varepsilon_{ijk} \quad (3)$$

In robustness Tables 17 and 18, the estimated treatment effect on households of below-median house quality ($\hat{\gamma}_1$) and the coefficient on the interaction term ($\hat{\gamma}_2$) are reported in the fifth and sixth columns, respectively. The p -value of an F -test of equivalence between the $\hat{\gamma}_1$ and $\hat{\gamma}_2$ parameters is reported in the seventh column.

ment agents in their neighborhood. They are 3.4 percentage points less likely to know the full name of the provincial governor, and 10 percentage points less likely to know the name of the provincial tax ministry. These magnitudes increase considerably among even less wealthy segments of the population (e.g. the bottom quartile of the wealth distribution).

Table 17: Robustness checks for paper Section 5 (Results)

<i>Dependent variable</i>	Basic	All	Enumerator	Sampling	House quality		
	covariates	covariates	fixed effects	weights	heterogeneity		
	$\hat{\beta}_1$	$\hat{\beta}_1$	$\hat{\beta}_1$	$\hat{\beta}_1$	$\hat{\gamma}_1$	$\hat{\gamma}_2$	<i>F</i> -test <i>p</i> -value
<i>Panel I: Compliance</i>							
Paid property tax	0.110 (0.010)	0.107 (0.010)	0.109 (0.010)	0.107 (0.010)	0.092 (0.012)	0.042 (0.018)	0.054
<i>Panel II: Participation</i>							
Townhall meeting attendance	0.042 (0.020)	0.035 (0.021)	0.053 (0.019)	0.039 (0.020)	0.054 (0.024)	-0.024 (0.036)	0.141
Evaluation submission	0.022 (0.012)	0.021 (0.012)	0.025 (0.012)	0.028 (0.013)	0.032 (0.015)	-0.015 (0.023)	0.177
Townhall or evaluation	0.049 (0.016)	0.047 (0.017)	0.052 (0.016)	0.045 (0.017)	0.057 (0.021)	-0.018 (0.029)	0.098
Townhall and evaluation	0.028 (0.009)	0.025 (0.010)	0.032 (0.009)	0.030 (0.010)	0.038 (0.012)	-0.022 (0.016)	0.019
Costly participation index	0.144 (0.042)	0.136 (0.044)	0.157 (0.042)	0.141 (0.044)	0.178 (0.053)	-0.076 (0.074)	0.026
<i>Panel III: Responsibility of the provincial government in public goods provision</i>							
Resp. prov. govt (full index)	0.098 (0.051)	0.114 (0.052)	0.032 (0.041)	0.111 (0.051)	0.098 (0.063)	0.029 (0.086)	0.607
Resp. prov. govt (sector-based)	0.071 (0.053)	0.093 (0.054)	0.011 (0.041)	0.073 (0.053)	0.063 (0.066)	0.046 (0.090)	0.902
Resp. prov. govt (hypotheticals)	0.090 (0.040)	0.079 (0.041)	0.073 (0.040)	0.127 (0.042)	0.113 (0.057)	-0.038 (0.078)	0.224

In Columns 1-4, each cell summarizes an estimation of Equation 1 in the paper for the indicated outcome variable. The top number is the estimated coefficient on the treatment indicator ($\hat{\beta}_1$), and the bottom number is the cluster-robust standard error. Columns 5-7 summarize estimations of Equation 3 showing heterogeneous treatment effects by house quality. Columns 5 and 6 provide estimates of $\hat{\gamma}_1$ and $\hat{\gamma}_2$, and Column 7 shows the *p*-value from an *F*-test of equivalence of these two parameters. For more information about each of these robustness checks, see p. 39. All dependent variables are identical to those discussed in Section 5 of the paper.

Table 18: Robustness checks for paper Section 6 (Mechanisms)

<i>Dependent variable</i>	Basic	All	Enumerator	Sampling	House quality		
	covariates	covariates	fixed effects	weights	heterogeneity		
	$\hat{\beta}_1$	$\hat{\beta}_1$	$\hat{\beta}_1$	$\hat{\beta}_1$	$\hat{\gamma}_1$	$\hat{\gamma}_2$	<i>F</i> -test <i>p</i> -value
<i>Panel I: Extractive capacity - coercive compliance</i>							
Ability to punish evaders	0.132 (0.045)	0.155 (0.043)	0.098 (0.039)	0.135 (0.046)	0.110 (0.059)	0.091 (0.077)	0.878
Information about citizens	0.038 (0.049)	0.023 (0.047)	0.031 (0.038)	0.039 (0.049)	0.038 (0.063)	0.023 (0.085)	0.914
<i>Panel II: Extractive capacity - voluntary compliance</i>							
Performance of tax ministry	0.148 (0.049)	0.128 (0.049)	0.075 (0.042)	0.136 (0.048)	0.102 (0.062)	0.047 (0.085)	0.682
Integrity of tax collectors	0.206 (0.045)	0.198 (0.044)	0.165 (0.040)	0.188 (0.046)	0.172 (0.057)	0.037 (0.081)	0.287
Perceived citizen compliance	0.323 (0.054)	0.335 (0.052)	0.363 (0.049)	0.359 (0.054)	0.258 (0.063)	0.215 (0.094)	0.757
<i>Panel III: Productive capacity</i>							
Ability to provide public goods	0.002 (0.054)	0.019 (0.054)	-0.033 (0.041)	-0.004 (0.055)	0.001 (0.070)	-0.030 (0.091)	0.836
Performance of government	0.066 (0.051)	0.052 (0.049)	0.005 (0.040)	0.063 (0.052)	-0.020 (0.066)	0.138 (0.090)	0.270
Share of taxes spent well	0.128 (0.050)	0.112 (0.048)	0.074 (0.043)	0.140 (0.050)	0.205 (0.063)	-0.206 (0.081)	0.002

In Columns 1-4, each cell summarizes an estimation of Equation 1 in the paper for the indicated outcome variable. The top number is the estimated coefficient on the treatment indicator ($\hat{\beta}_1$), and the bottom number is the cluster-robust standard error. Columns 5-7 summarize estimations of Equation 3 showing heterogeneous treatment effects by house quality. Columns 5 and 6 provide estimates of $\hat{\gamma}_1$ and $\hat{\gamma}_2$, and Column 7 shows the *p*-value from an *F*-test of equivalence of these two parameters. For more information about each of these robustness checks, see p. 39. All dependent variables are identical to those discussed in Section 6 of the paper.

5 Coordination mechanism

This section examines the plausibility of a coordination mechanism, as briefly discussed in Section 6.3 of the paper. The intuition behind this mechanism is that a door-to-door tax campaign could increase participation by stimulating communication or shared grievances in treated neighborhoods and thus lowering the costs of coordination. Coordination could have influenced individuals' participation decisions if citizens anticipated being more successful in lobbying the government for public goods spending if more members of the neighborhood attended townhall meetings or submitted evaluations making common demands.¹³

At first glance, this explanation appears unlikely because there were no instances of individuals from the same neighborhood standing up together at townhall meetings to make an overtly joint demand. Also, the intracenter correlation of participating in either the townhall or evaluation submission is relatively low (0.073), and there are not obvious patterns in the spatial distribution of participants within neighborhoods that would suggest a collective action mechanism (Figure 21).¹⁴ However, the campaign could have triggered coordination in more subtle ways.

More formal tests of this mechanism include: (1) examining if treated townhall participants were more likely to arrive at meetings accompanied by other members of the neighborhood; (2) examining if participants' houses were more clustered geographically within treatment; and (3) examining if the campaign had larger effects in areas with higher ex ante potential for collective action. Although there is some suggestive evidence from the first test, overall there is little empirical support for a coordination mechanism.

The first test is whether individuals in treatment neighborhoods were more

¹³Coordination effects would likely be complements to updating about state capacity. Citizens would not only anticipate greater individual-level benefits to participation after observing the tax campaign; they would also be better able to coordinate with their neighbors to lobby the government. That said, Arias et al. (2017) argue that, theoretically, updating and coordination could be complementary, substitutes, or independent mechanisms.

¹⁴For instance, if participants' houses were more densely clustered in treatment neighborhoods, this might suggest a coordination mechanism, as I explore formally below.

likely to travel together to townhall meetings. If the tax campaign lowers barriers to coordination, then one might expect individuals to have shared a motorbike taxi to the townhall meeting venue.¹⁵ They would then arrive together and appear consecutively in participant registration data.¹⁶ Using these data, I define an indicator for individuals who arrived before or after someone from the same neighborhood. I then regress this variable on the treatment indicator using the sample of all townhall participants.

The results are summarized in Table 19. Column 1 shows that the coefficient on the treatment indicator is positive, but not statistically significant at conventional levels.¹⁷ Column 2 controls for the total attendance rate in a neighborhood to explore the possibility that joint arrivals are mechanically explained by the higher number of attendees in treatment. Although the neighborhood attendance rate is also an outcome of treatment, and therefore a “bad control” (Angrist and Pischke, 2008), it is nonetheless suggestive that adding this regressor on the right-hand side does not change the magnitude of the coefficient on the treatment indicator. Column 3 then further controls for the average population density of the neighborhood, which could also impact joint arrivals.¹⁸ Although not statistically significant, the stability of the coefficient across these specifications provides some suggestive evidence that treated townhall participants were more likely to arrive with other members of their neighborhood relative to control townhall participants.

The second test of a coordination mechanism is to examine whether treated participants’ houses were more clustered geographically within neighborhoods compared to control. If individuals were making isolated, independent decisions about whether or not to participate, then their houses would have been, on average, spread out evenly throughout the neighborhood, due to the method

¹⁵As noted, many individuals in the sample lived far from the venue, such that a taxi ride could cost as much as \$2, the median household’s daily income (and the cost of the property tax). Sharing motorbike taxis is very common in Kananga.

¹⁶I observe the order and approximate time at which participants arrived at the meetings.

¹⁷The sample size is small in this analysis, so I may well be underpowered to detect an effect even of this non-trivial magnitude.

¹⁸Population density is estimated by dividing the estimated number of households by the total area of the neighborhood.

Table 19: Effects of the campaign on arriving at a townhall meeting with member of neighborhood

	Arrived at townhall meeting with neighbor		
	(1)	(2)	(3)
Campaign	0.063 (0.039)	0.065* (0.038)	0.061 (0.038)
Neighborhood townhall attendance		0.291** (0.122)	0.263** (0.121)
Neighborhood population density			-0.072* (0.039)
Covariates	Yes	Yes	Yes
Stratum FE	Yes	Yes	Yes
R^2	0.109	0.122	0.131
Observations	480	480	479
Clusters	206	206	205
Control Mean	.067	.067	.067

The outcome variable is an indicator for townhall participants who arrived immediately before or after another individual from the same neighborhood. *Neighborhood townhall attendance* is the average rate of townhall attendance in the neighborhood. *Neighborhood population density* is the estimated total number of houses in a neighborhood divided by its area. Data: endline survey merged with townhall attendance records. The sample includes all individuals who attended a townhall meeting.

of random sampling used by enumerators¹⁹ A stylized depiction appears in the first panel of Figure 20. However, if a coordination mechanism explains the increase in participation caused by the tax campaign, then we might expect individuals in the same vicinity to have also been more likely to attend, such as those within the red circle in the second panel. The third panel indicates a spatial distribution of participator households consistent with a coordination mechanism. The overall spatial distribution of participating households in treatment and control appears in Figure 21.²⁰

An observable implication of this hypothesis is that the average distance among the houses of participators within neighborhoods should be *smaller* in

¹⁹As noted on p. 12, enumerators followed a skip pattern throughout the whole neighborhood, so respondents are typically spread out.

²⁰Figure 22 also shows the intensity of participation by neighborhood.

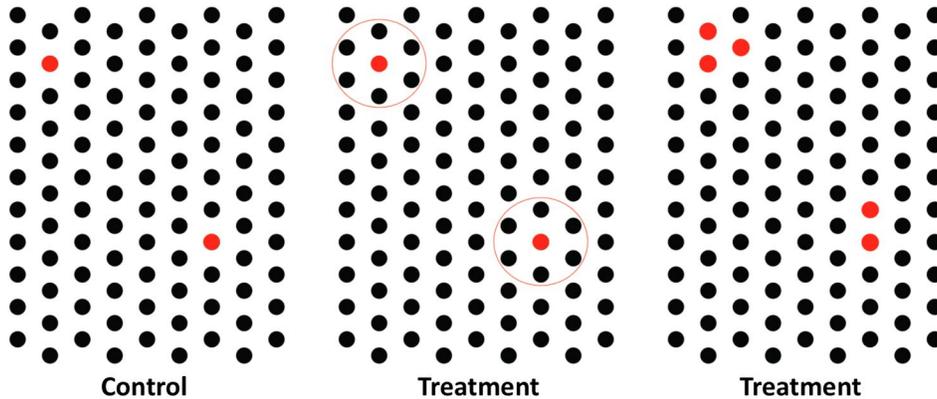


Figure 20: Stylized illustration of the spatial distribution of participant households in treatment and control neighborhoods.

treatment relative to control, conditional on the total number of participants per neighborhood. To construct this measure, I first calculate the Euclidean distance between each participant’s household within a neighborhood and then take the average of these distances.²¹ I then regress this neighborhood-level measure on the treatment indicator to test if the average distance among participating households is smaller in treatment relative to control. As shown in Table 20, the point estimate on the treatment indicator is not statistically distinguishable from zero. This remains true if we condition on the neighborhood participation level — the number of households participating could mechanically decrease the average distance²² — and the average population density of the neighborhood. This analysis, therefore, does not provide much support for a coordination mechanism.

The third test is to examine whether neighborhoods more conducive to collective action exhibit a larger treatment effect. If enhanced coordination explained the increase in participation, the treatment effect should be larger in neighborhoods in which barriers to collective action were lower ex ante. I consider three proxies for the “collective action potential” of different neighborhoods in Kananga. The first, *Baseline ethnic homogeneity*, is the ethnic

²¹The analysis is thus on the neighborhood level, omitting neighborhoods with fewer than two participants.

²²This is, again, a “bad control,” but included for completeness.

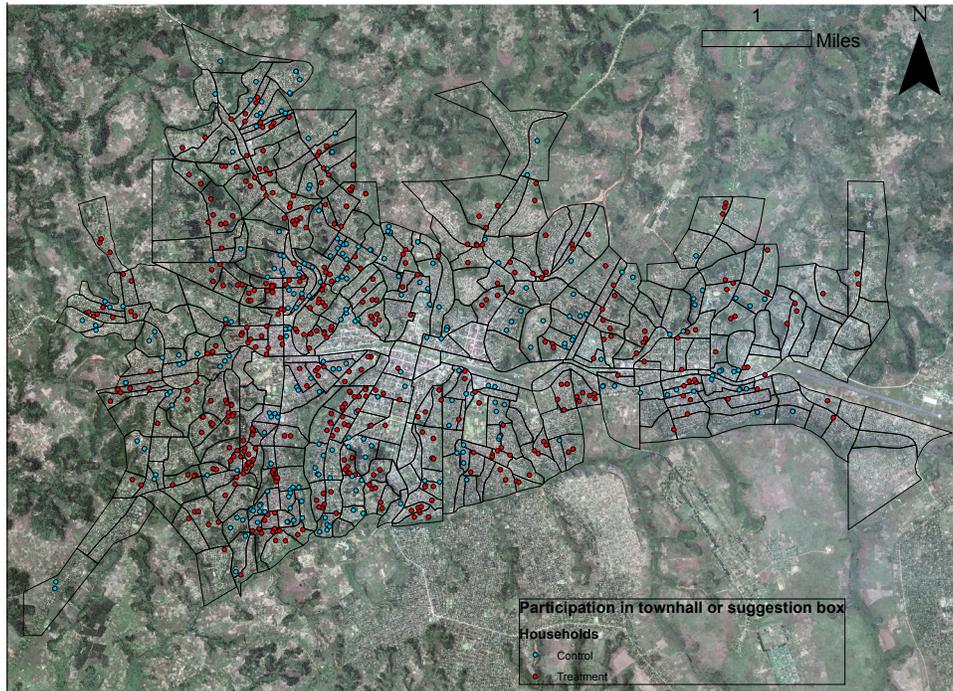


Figure 21: Locations of treatment and control individuals’ households who attended a townhall meeting or submitted an evaluation.

homogeneity of the neighborhood. Numerous studies have documented the challenges to collective action in settings of high ethnic heterogeneity (Easterly and Levine, 1997; Miguel and Gugerty, 2005; Larson and Lewis, 2017). One would therefore predict that coordination would be easier in more ethnically homogeneous neighborhoods and thus that the treatment would have a more pronounced effect in these neighborhoods. I estimate the ethnic homogeneity of neighborhoods using baseline data on self-reported ethnicity. I then split the sample at the median level of ethnic homogeneity and examine if the treatment effect varies across these subsamples. The first column of Table 21 summarizes the results. Although neighborhoods with higher ethnic homogeneity do indeed have higher participation levels, the treatment effect does not significantly differ across more and less homogeneous neighborhoods.

Another proxy of neighborhood level collective-action potential is simply population density. More densely populated networks are characterized by higher rates of information diffusion, which might facilitate coordination (Gra-

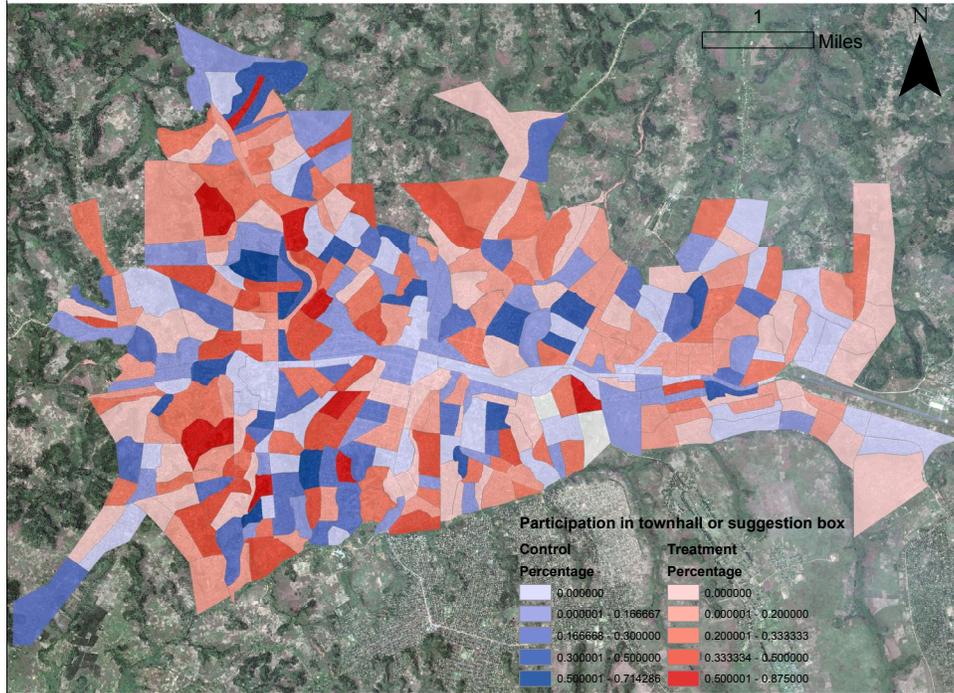


Figure 22: Neighborhood-level participation rates (% of HHs that attended a townhall or submitted an evaluation) across Kananga.

novetter, 1973). I estimate population density, as before, by using estimates of the number of houses in each neighborhood divided by the total area. Analogous to the procedure in examining ethnic homogeneity, I then split the sample between above- and below-median levels of population density and re-estimate treatment effects. Similar to the results in Column 1, no meaningful differences in the treatment effect appear.

Finally, a common way political parties in sub-Saharan Africa solve collective-action problems like getting people to turn out to vote is by working with local intermediaries or brokers (Finan and Schechter, 2012; Stokes et al., 2013; Larreguy et al., 2016). Local notables known as city chiefs typically play this role in Kananga, though they are less influential than in some more consolidated African democracies (Baldwin, 2015). The observed activity of city chiefs at baseline, *Baseline chief activity*, therefore offers another proxy for the collective-action potential of neighborhoods.²³ More active city chiefs might

²³Baseline respondents reported past visits from city chiefs.

Table 20: Effects of the campaign on the average Euclidean distance among participators' households

	Average distance among participating households		
	(1)	(2)	(3)
Campaign	-1.667 (2.636)	-2.189 (2.575)	-2.262 (2.552)
Neighborhood participation level		20.313*** (7.462)	19.630*** (7.452)
Neighborhood population density			-2.068 (2.198)
Stratum FE	Yes	Yes	Yes
R^2	0.225	0.239	0.242
Observations	196	196	196
Control Mean	14	14	14

The outcome variable is the neighborhood-level average Euclidean distance (measured in degrees) among houses of all individuals who either attended a townhall or submitted an evaluation. *Neighborhood participation level* is the average rate of participation (attending a townhall or submitting an evaluation) in the neighborhood. *Neighborhood population density* is the estimated total number of houses divided by the area of the neighborhood. Data are from the endline survey, merged with participation records and geographic measures, collapsed to the neighborhood level. The unit is the neighborhood. The sample includes all neighborhoods with multiple individuals who participated.

have helped organize participation among citizens, and their efforts to do so could have been stimulated by the tax campaign. Analyzing the treatment effect in neighborhoods with above- and below-median chief activity, however, does not reveal significant differences along this dimension. Thus, as with the other proxies of collective-action potential, there is little evidence consistent with a coordination mechanism.

In conclusion, although there is some suggestive evidence that treated townhall participants may have been slightly more likely to arrive at townhall meetings with other members of their neighborhood (Table 19), there is no evidence that treated participants are more clustered geographically or that the treatment effect is larger in neighborhoods with higher collective-action capacity. It is thus unlikely that a coordination mechanism explains the effect of the tax campaign on participation.

Table 21: Heterogeneous effects of the campaign on participation by neighborhood collection-action potential

	Townhall or evaluation		
	(1)	(2)	(3)
Campaign	0.056*** (0.020)	0.056*** (0.022)	0.058** (0.023)
Campaign X High ethnic homogeneity	-0.013 (0.035)		
High ethnic homogeneity	0.042* (0.024)		
Campaign X High population density		-0.013 (0.033)	
High population density		0.029 (0.025)	
Campaign X High chief activity			-0.021 (0.033)
High chief activity			0.024 (0.025)
Covariates	Yes	Yes	Yes
Stratum FE	Yes	Yes	Yes
R^2	0.068	0.067	0.067
Observations	2913	2913	2913
Clusters	356	356	356
Control Mean	0.18	0.18	0.18
F -test p -value	0.16	0.17	0.13

Townhall or evaluation indicates individuals who attended a townhall or submitted an evaluation form. *High ethnic homogeneity* indicates neighborhoods with above-median ethnic homogeneity at baseline. *High population density* indicates neighborhoods with above-median population density, estimated using house counts from satellite maps. *High chief activity* indicates neighborhoods with above-median levels of city chief activity, as measured by baseline respondents' self-reported visits from such chiefs. Data: endline survey merged with participation records and neighborhood-level measures from baseline survey.

6 Exact text of survey questions and question-specific results

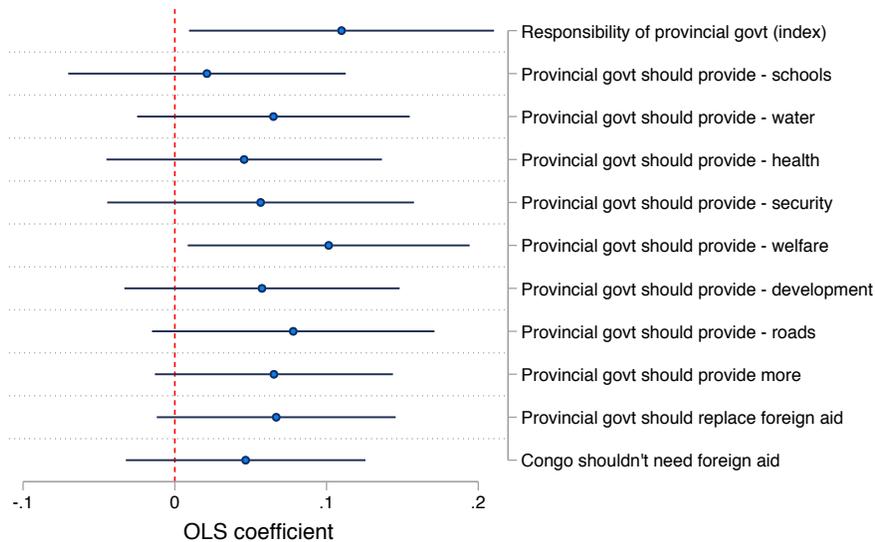
This section provides the exact text of the questions used to construct all survey-based variables considered in the paper. It also shows question-specific results (in cases when I otherwise used indices).

6.1 Variables used in Paper Section 5.

1. *Responsibility of the provincial government in public goods provision: sector-based.* This variable is a standardized index composed of the sum of indicator variables for each time the respondent answered that the provincial government should be primarily responsible for providing public goods in the sector noted. The enumerator first read the prompt and then gave the respondent a laminated list of all the possible providers. Then, the enumerator read of each of the sectors below, asking which provider should be primarily responsible for service provision in that sector. Figure 23 is a coefficient plot for each of these variables.
 - Prompt: ‘I am going to list some services/infrastructure many communities have. Tell me who you think should be primarily responsible for providing each one in our community. This does not need to be the current provider of these services/infrastructure.’
 - Sectors: schools, water system/wells, health care, keeping people safe, helping poor people, economic development, road maintenance.
 - Possible providers: national government, provincial government, NGOs, community organizations, religious groups/leaders, traditional leaders/chiefs, international organizations, ‘everyone should take care of themselves’.
2. *Responsibility of the provincial government in public goods provision: hypotheticals.* This variable is a standardized index composed of respondents’ answers to the three questions below. First, the enumerator read

the prompt. Then, the enumerator read the two points of view asking which the respondent agreed more with. Finally, the enumerators asked if the respondent agreed strongly or just agreed with the statement. Each variable is coded from 0 to 3, where 0 indicates the respondent envisions the least responsibility for the provincial government, and 3 indicates the most responsibility.

- Prompt: ‘Now, I’m going to read you several statements of opposing viewpoints. Please tell me with which statement you most agree.’
- Sets of opposing viewpoints:
 - (a) ‘Some people say the provincial government should take more responsibility to ensure that everyone is provided for’ or ‘Other people say that people should take more responsibility to provide for themselves.’
 - (b) ‘Foreign aid organizations should provide more services in the health and education sectors in Congo’ or ‘Foreign aid organizations should provide fewer services like health care and education; that is the responsibility of the provincial government.’
 - (c) ‘Foreign aid is necessary for Congo to become peaceful and prosperous’ or ‘Foreign aid is not necessary in Congo; we have everything we need to achieve peace and prosperity.’



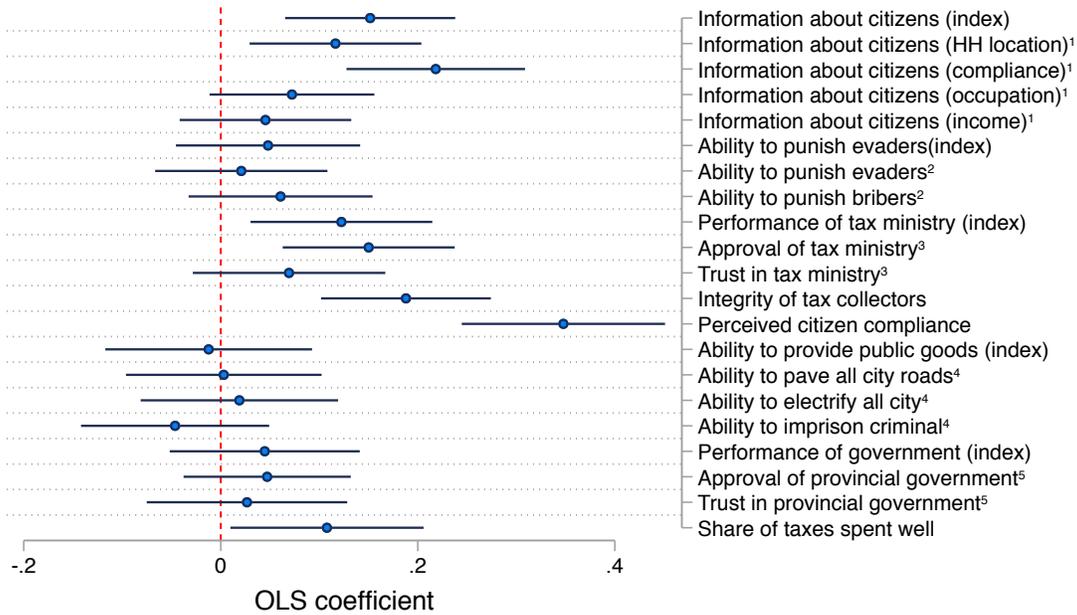
Estimates from OLS regressions in basic specification. SEs clustered by polygon. All variables standardized.

Figure 23: Coefficient plot for individual survey questions about the responsibility of the provincial government in the provision of public goods (sector and hypothetical questions).

6.2 Variables used in Paper Section 6.

1. *Information about citizens.* This standardized index is increasing in the perception that the government possesses information about citizens. The underlying survey questions are as follows, to which respondents answered using a four-point scale: ‘Yes - I am completely sure, Yes - I am somewhat sure, No - I am somewhat sure, No - I am completely sure.’

- Prompt: ‘Now I’d like to ask you how much information you think the provincial government keeps about citizens in its archives.’
- Questions:
 - (a) ‘Do you think the provincial government knows the address of your house?’
 - (b) ‘Do you think the provincial government knows which of your neighbors did not pay the property tax in 2016?’
 - (c) ‘Do you think the provincial government knows what you do



Estimates from OLS regressions in basic specification. SEs clustered by polygon. All variables standardized. Superscripts denote constituent questions of the following indices: 1=Information about citizens, 2=Ability to punish evaders, 3=Performance of tax ministry, 4=Ability to provide public goods, 5=Performance of government.

Figure 24: Coefficient plot for individual survey questions concerning the capacity of the provincial government.

for a living?’

(d) ‘Do you think the provincial government knows how much money you make each month?’

2. *Ability to punish evaders.* This standardized index is increasing in the perceived capacity of the government to punish citizens who evade payment of the property tax. The underlying survey questions are as follows.

(a) ‘Now, imagine that next week a tax collector comes and visits one of your neighbors. Imagine he absolutely refuses to pay. In this case, what is the probability that the government will pursue and enforce sanctions? Choose one of the following options: very likely, likely, unlikely, very unlikely.’

(b) ‘Now imagine your neighbor pays a bribe instead of paying the tax. What is the probability that the government will pursue and enforce sanctions?’

3. *Performance of tax ministry.* This standardized index is increasing in citizens' evaluation of and trust in the tax ministry. The underlying survey questions are as follows.
 - (a) 'I am going to name a number of organizations. For each one, could you tell me how much confidence you have in them: is it a great deal of confidence, quite a lot of confidence, not very much confidence or none at all? The tax ministry.'
 - (b) 'Overall, how would you rate the performance of the tax ministry in Kananga?' [Excellent, Very good, Good, Fair, Poor, Very poor, Terrible]
4. *Integrity of tax collectors.* This standardized index is increasing in citizens' confidence that tax collectors will deposit money to the state account. The underlying survey questions are as follows.
 - (a) 'In general, think of what the tax collectors will do with the money they collect during this 2016 property tax campaign. Imagine the tax collectors collect \$1000 thanks to the campaign. How much of this money will they submit to the state account?'
 - (b) Note: the respondent then answers the question 'How much of this money will they put in their pockets?' If the results do not sum to \$1000, the respondent answers again. Only the integer response to the first question is used for this variable.
5. *Perceived citizen compliance.* This variable captures the share of other citizens whom respondents perceive as having paid the property tax in 2016. The exact question read as follows: 'In your opinion, how many other people in your quartier paid the property tax in 2016?' [All/most/some/a few/none]
6. *Ability to provide public goods.* This standardized index is increasing in the perceived capacity of the provincial government to provide public goods. The underlying survey questions are as follows.
 - Prompt: 'To be successful with its projects, governments need both (1) the desire to do them, and (2) the capacity to execute them. Let's discuss the capacity of the provincial government. Please tell

me if you strongly agree, agree, disagree, strongly disagree or are neutral about the following statements.’

- Questions:

- (a) ‘If the provincial government of Kasai Central wants to improve all of the roads in Kananga, it will do this quickly and without problems.’

- (b) ‘If the provincial government of Kasai Central wants to provide electricity to everyone in Kananga, it will do this efficiently and without problems.’

- (c) ‘If the provincial government of Kasai Central wants to find and imprison a criminal hiding somewhere in Kananga, it will do this efficiently and without problems.’

7. *Performance of government.* This standardized index is increasing in citizens’ evaluation of and trust in the provincial government. The underlying survey questions are as follows.

- (a) ‘I am going to name a number of organizations. For each one, could you tell me how much confidence you have in them: is it a great deal of confidence, quite a lot of confidence, not very much confidence or none at all? The provincial government.’

- (b) ‘Overall, how would you rate the performance of the provincial government in Kananga?’

8. *Share of taxes spent well.* This standardized index is increasing in citizens’ confidence that the money received by the provincial government will be spent prudently and not be wasted or stolen. The underlying survey questions are as follows.

- (a) ‘Now I would like to ask you what you think the provincial government will do with the money it receives from this 2016 property tax campaign. Imagine that the Provincial Government of Kasai Central receives \$1000 thanks to this campaign. How much of this money will be put to good use, for example providing public goods?’

- (b) Note: the respondent then answers the question ‘How much of this money will go to diversion of funds and waste?’ If the results to not

sum to \$1000, the respondent answers again. Only the response to the first question is used for this variable.

9. *Past visits (high)*. This dummy variable indicates neighborhoods with above-median reported past visits from government tax collectors (measured at baseline). I aggregated individual responses for the neighborhood, and then computed this indicator based on all neighborhood-level rates. The baseline survey question was as follows.

(a) ‘Has a government tax collector ever come to your neighborhood?’

10. *Past protest (high)*. This dummy variable indicates neighborhoods with above-median reported past protest participation (measured at baseline). It is constructed analogously to the previous variable. The baseline survey question was as follows.

(a) ‘Have you ever participated in a political protest of any kind?’

6.3 Additional variables considered in Online Appendix

1. *Engagement with national politics*. This standardized index is increasing in respondents’ self-reported past and future participation in national politics. It is composed of the following yes-or-no questions, which I combined into an index (as described on p. 14 in the paper).

- ‘Do you plan to vote in the next election?’
- ‘Have you ever been a member of a political party?’ and (if not current member) ‘Would you consider joining a political party in 2017?’
 - Responses: 0=never member and not considering, 1=past member but not considering, 2=never member and considering, 3=past member and considering, 4=current member.
- ‘Have you ever been in a political march?’ and ‘Would you consider begin in a political march in 2017?’
 - Responses: 0=never participant and not considering, 1=past participant but not considering, 2=never participant and considering, 3=past participant and considering.

- ‘Have you ever participated in a political protest of any kind?’ and ‘Would you consider participating in a political protest in 2017?’ [analogous response key as for marches]
 - ‘Have you ever attended political rallies?’ and ‘Would you consider participating in a political rally in 2017?’ [analogous response key as for marches]
2. *Interest in politics.* This standardized index is increasing in respondents’ interest in politics. It is composed of four sets of questions. The first two variables concern self-reported consumption of political news. The next three gauge interest in politics by respondents’ knowledge of basic facts about the government and politics. The next three variables present the respondent with a choice between receiving information about the state or about some non-state actor. They are coded as 1 if the respondent chose the state information and 0 otherwise. The last set includes hypothetical questions about respondents’ interest in politics, increasing in the view that citizens should be actively involved in politics.
- (a) Set 1: consumption of political news.
- i. ‘How often do you listen to the radio about politics?’ [5=Multiple times per day, 4=1-7 times per week, 3=1-4 times per month, 2=Less than once per month, 1=Only once ever, 0=Never]
 - ii. ‘How often do you read articles on the internet about politics?’ [analogous response key]
- (b) Set 2: knowledge of political facts.
- i. ‘Do you know the name of the current governor of Kasai Central? If yes, what is it?’ [2=Knows full name, 1=Knows part of name, 0=Doesn’t know name]
 - ii. ‘Do you know how many deputies there are in Kasai Central?’ [10=correct answer, 9=wrong by 1,..., 0=wrong by 10 or more]
 - iii. ‘Can you name the territories that make up Kasai Central? If yes, please name them.’ [5=knows all five, ..., 0=knows none]
- (c) Set 3: choice of political information. Prompt: ‘Now I’d like to give

you some information. I will give you three sets of choices. For each, tell me which piece of information you would like me to share with you.'

- i. 'The total spending of the state in Kasai Central in 2016' or 'The total spending of UNICEF in Kasai Central in 2016.'
- ii. 'The percentage of the population that works for the state' or 'The percentage of the population that is Catholic, Protestant, and Pentecostal.'
- iii. 'The percentage of Kananga's public lighting that currently functions' or 'The percentage of Kananga's residents who own a diesel generator.'

(d) Set 4: beliefs about the role of citizens in politics. Prompt: 'Let's talk for a moment about the kind of community you would like to live in. I'm going to read you several statements of opposing viewpoints. Please tell me with which statement you most agree.'

- i. 'Some people say that citizens should have an active role in monitoring the actions of leaders and how the government spends its money' or 'Other people say that citizens should have more respect for authority and trust the government to spend its money in the best possible way.'
- ii. 'It is more important for citizens to have a voice and some influence in politics, even if that means it makes decisions more slowly' or 'It is more important to have a government that make decisions quickly, even if we the citizens have no influence over what it does.'
- iii. 'Citizens and their representatives in the Assembly should ensure that the Governor explains to it on a regular basis how his government spends taxpayers' money' or 'The Governor should be able to devote his full attention to developing the country rather than wasting time justifying his actions.'

3. *Engagement with local city chiefs.* This standardized index is increasing in respondents' self-reported engagement with and trust in local city

chiefs (commune chief, quartier chief, and avenue chief). The index is composed of the following questions. After each variable, I describe how I code it for the index. As always, all variables were first standardized before being combined in the index.

- ‘Has someone from your household ever gone to your commune chief, quartier chief, or avenue chief to discuss a problem affecting your neighborhood or to complain about the provincial government? If yes, which chiefs?’
 - For each chief, I define an indicator that equals 1 if the respondent reports having consulted the chief and 0 otherwise.
- ‘In 2016, did someone from your house contribute to a public good project in your neighborhood, for example improving a road or building a bridge?’
 - This question asks about *Salongo*, an informal tax organized by the avenue chief. Participation in *Salongo* is in some ways the clearest form of engagement with local city chiefs.
- ‘To what extent does your avenue chief respond to the needs of the people on your street?’
 - Respondents chose from a 4 point scale, with 3 indicating a responsive chief and 0 an unresponsive chief.
- ‘Do you know the name of your avenue chief?’
 - This yes-no question gauges revealed engagement with the avenue chief.
- ‘I am going to name a number of organizations. For each one, could you tell me how much confidence you have in them: is it a great deal of confidence, quite a lot of confidence, not very much confidence or none at all? Quartier and avenue chiefs.’
 - This 0-3 question was also included in the index.

4. *Actual public goods provision.* This standardized index is increasing in the perceived level of current public goods provision by the provincial government. It is constructed analogously to the variable *Responsibility of the provincial government in public goods provision: sector-based*. The

enumerator listed a series of sectors, and for each respondents chose whether they thought the provincial government currently provided ‘a lot,’ ‘a little,’ or ‘nothing’ in that sector. Figure 27 is a coefficient plot for each of these variables.

- Enumerator prompt: ‘Now let’s talk about what services the provincial government currently provides to the citizens of Kananga. In your opinion, what level of public services does the Provincial Government of Kasai Central *currently* provide?’
 - Sectors: schools, water system/wells, health care, keeping people safe, helping poor people, economic development, road maintenance.
5. *Trusts researchers*. This variable is increasing in self-reported trust of foreign research organizations. It is constructed like other trust questions already noted. The enumerator prompt was as follows: ‘I am going to name a number of organizations. For each one, could you tell me how much confidence you have in them: is it a great deal of confidence, quite a lot of confidence, not very much confidence or none at all? Foreign research organizations.’
 6. *Knows researchers*. This variable indicates if the respondent was able to identify the employer of the enumerator at the end of the endline survey. The enumerator prompt was as follows: ‘Do you remember who I work for? If yes, please say who you think I work for.’
 7. *Past participant*. This variable indicators participants who report having participated in past activities with our research team (identifiable by referencing props used in lab games from past studies). The enumerator prompt was as follows: ‘Have you ever played any games with envelopes and tents with a [research organization] enumerator in the past?’

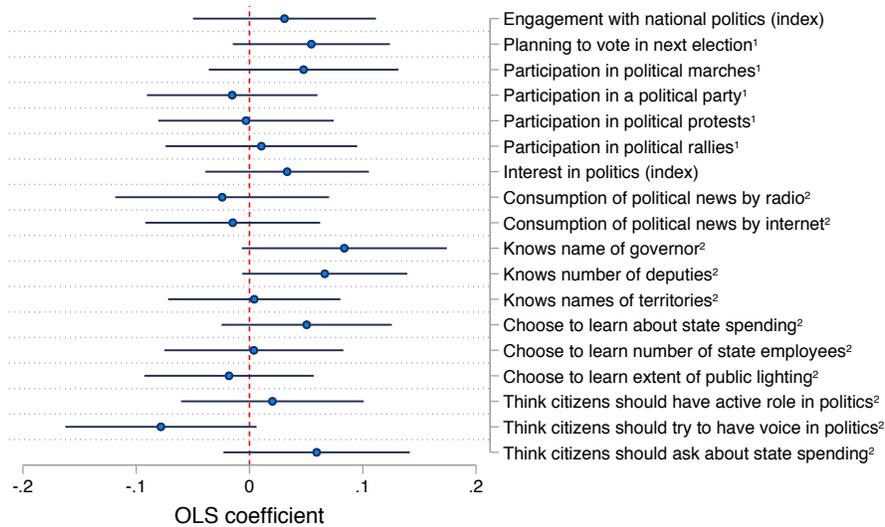


Figure 25: Coefficient plot for individual survey questions in the *Engagement with national politics* and *Interest in politics* indices.

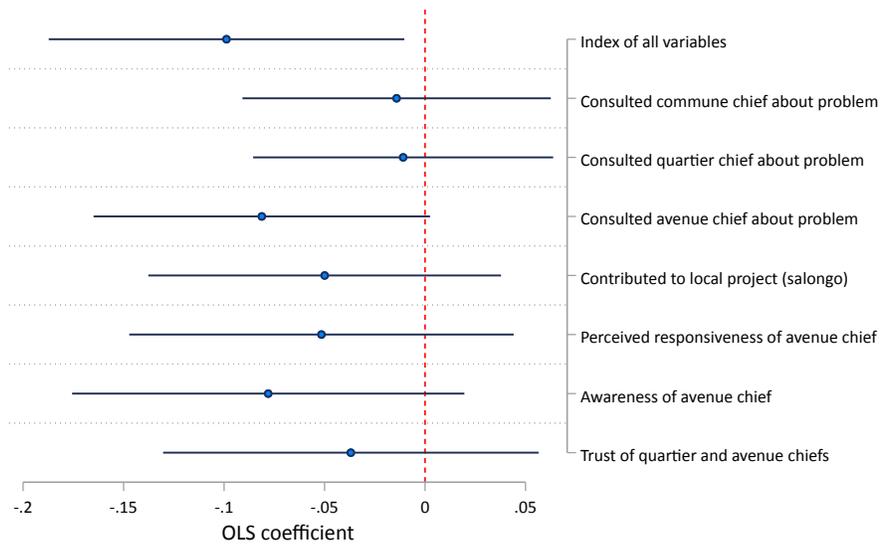


Figure 26: Coefficient plot for individual survey questions concerning engagement with city chiefs.

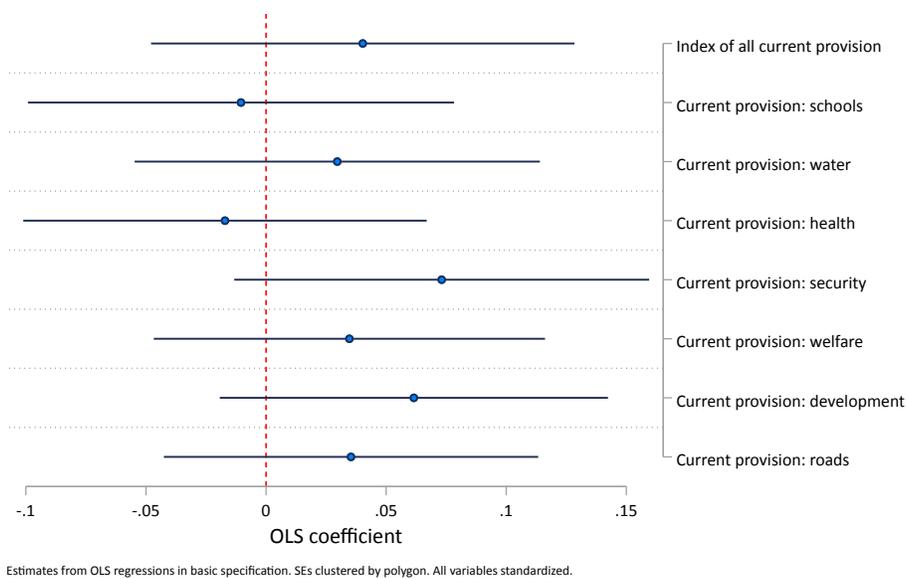


Figure 27: Effects of the campaign (coefficient plot) on the perceived current level of public goods provision by the provincial government.

7 Data anomalies, noncompliance, and deviations from pre-analysis plan

7.1 Missing values in house quality data

Due to a survey programming glitch, there is missing data on house quality for 78 observations (1.9%) in the endline data. Fortunately, I observe several components of the ultimate measure of wealth that is used in the analysis (floor quality, possessions, electricity access), as well as several other strong predictors (weekly and monthly income, amount of money spent on transport in past 7 days, amount of money spent on airtime in past 7 days). It is therefore possible to impute wealth measures following the following steps.

1. Within a neighborhood of three adjacent neighborhoods, estimate the relationship (using OLS) between the missing dependent variable and each of the other related variables.
2. Predict wealth for the 78 missing observations using the coefficients from the previous regression.

In the main analysis, the full sample is used, including these imputed values for the wealth variable. However, the results are robust to dropping these observations in estimations that use the wealth variable.

7.2 Non-compliance among collectors

One tax collector conducted one day of the property register in a control neighborhood (neighborhood 421) instead of a different treatment neighborhood in the same area. He also collected taxes from two households. This neighborhood was located in Nganza commune, which I ultimately had to exclude from the analysis because the conflict in Kananga made it too dangerous to conduct the endline survey there. As such, this non-compliance does not affect the analysis considered in the paper.

Although I randomly assigned tax collectors to neighborhoods in groups of three, at times no tax collectors were able to work during the assigned week. Collector absences were typically due to illness, trips outside of Kananga, or

other work (such as petty commerce, which many did on the side). In such cases, I non-randomly reassigned other available collectors to these neighborhoods. This non-random reassignment occurred for 5.5% of treated neighborhoods. The complete list is as follows.

1. Collector 1 re-assigned to neighborhood 111.
2. Collector 18 re-assigned to neighborhoods 579, 212, 558.
3. Collector 31 re-assigned to neighborhoods 368, 639.
4. Collector 7 re-assigned to neighborhood 419.
5. Collector 15 re-assigned to neighborhood 703.
6. Collector 37 re-assigned to neighborhood 676.
7. Collector 17 re-assigned to neighborhoods 539, 675.
8. Collector 19 re-assigned to neighborhood 668.
9. Collector 22 re-assigned to neighborhood 671.
10. Collector 4 re-assigned to neighborhood 242.

The paper does not exploit the random assignment of collectors in the main analysis. The exception is the jackknife IV strategy, for which I only use the observed effort and efficiency of assigned collectors, not the de facto collectors.

7.3 Deviations from pre-analysis plan

In the pre-analysis plan, I included two specifications that would capture the effect of bribes on participation. These specifications were motivated by the concern that the tax campaign would increase bribes, which would create another channel through which treatment could influence outcomes (i.e. essentially an exclusion restriction concern). However, because I observe very low levels of bribery and no treatment effect on bribes, I rely instead on the simpler specifications noted in the pre-analysis plans: Equations 1 and 2 rather than also 3 and 4. The IV analysis is similarly simplified, including only two endogenous regressors rather than also including bribes as an endogenous regressor as in Equation 5 in the PAP. Aside from only using these more simple specifications noted in the PAP, the analysis in the paper is analogous to that described in the PAP.

Additionally, I had initially planned to include two questions in the endline survey, which I was not ultimately able to collect. First, respondents would have had a chance to sign their full name to a petition expressing disapproval of the provincial government, which would eventually be transferred to the governor. However, given concerns about the non-anonymity of respondents, the IRB prevented me from asking this question. Second, I had planned to send questions to respondents via SMS and measure who responded. However, after observing the large number of respondents without working cell phones, I never implemented this question.

References

- Abadie, Alberto**, “Semiparametric instrumental variable estimation of treatment response models,” *Journal of Econometrics*, 2003, 113 (2), 231–263.
- Angrist, Joshua D and Jörn-Steffen Pischke**, *Mostly harmless econometrics: An empiricist’s companion*, Princeton university press, 2008.
- Arias, Eric, Pablo Balan, Horacio Larreguy, John Marshall, and Pablo Querubin**, “How social networks help voters coordinate around information provision to improve electoral accountability: Evidence from Mexico,” *Working Paper*, 2017.
- Baldwin, Kate**, *The paradox of traditional chiefs in democratic Africa*, Cambridge University Press, 2015.
- Clingingsmith, David, Asim Ijaz Khwaja, and Michael Kremer**, “Estimating the impact of the Hajj: religion and tolerance in Islam’s global gathering,” *The Quarterly Journal of Economics*, 2009, 124 (3), 1133–1170.
- Easterly, William and Ross Levine**, “Africa’s growth tragedy: policies and ethnic divisions,” *The Quarterly Journal of Economics*, 1997, 112 (4), 1203–1250.

- Finan, Frederico and Laura Schechter**, “Vote-buying and reciprocity,” *Econometrica*, 2012, 80 (2), 863–881.
- Granovetter, Mark S**, “The strength of weak ties,” *American Journal of Sociology*, 1973, 78 (6), 1360–1380.
- Khan, Adnan Q, Asim I Khwaja, and Benjamin A Olken**, “Tax farming redux: Experimental evidence on performance pay for tax collectors,” *The Quarterly Journal of Economics*, 2015, 131 (1), 219–271.
- Larreguy, Horacio, John Marshall, and Pablo Querubin**, “Parties, brokers, and voter mobilization: How turnout buying depends upon the party’s capacity to monitor brokers,” *American Political Science Review*, 2016, 110 (1), 160–179.
- Larson, Jennifer M and Janet I Lewis**, “Ethnic networks,” *American Journal of Political Science*, 2017, 61 (2), 350–364.
- Miguel, Edward and Mary Kay Gugerty**, “Ethnic diversity, social sanctions, and public goods in Kenya,” *Journal of Public Economics*, 2005, 89 (11-12), 2325–2368.
- Paler, Laura**, “Keeping the public purse: An experiment in windfalls, taxes, and the incentives to restrain government,” *American Political Science Review*, 2013, 107 (4), 706–725.
- , **Wilson Prichard, Raul Sanchez de la Sierra, and Cyrus Samii**, “Survey on Total Tax Burden in the DRC,” in “DFID Final Report” 2016.
- Reid, Otis and Jonathan Weigel**, “Citizen Participation in Corruption: Evidence from Roadway Tolls in the Democratic Republic of the Congo,” *Working Paper*, 2017.
- ReliefWeb**, “The conflict in Kasai, DRC,” *Online Briefing*, 2017.
- Sanchez de la Sierra, Raul and Kristof Titeca**, “Corrupt Hierarchies,” *Working Paper*, 2018.

Stokes, Susan C, Thad Dunning, Marcelo Nazareno, and Valeria Brusco, *Brokers, voters, and clientelism: The puzzle of distributive politics*, Cambridge University Press, 2013.

Weigel, Jonathan L, “The taxman cometh: A virtuous cycle of compliance and state legitimacy in the D.R. Congo,” *Working Paper*, 2018.