

# Informal Taxation in Development Projects: The Role of Chiefs in Sierra Leone

Andrés F. Rodríguez\*

October 31, 2023

[Click Here For Latest Version](#)

## Abstract

This paper investigates the relative merit of traditional leaders at promoting cooperative behavior when informally taxing citizens in low-income states and whether this comes at the expense of relatively poor households. I design a field experiment to measure whether citizens engage in costly actions to avoid contributing their labor to a public good. I randomize communities into different methods to select contributors and compare the status quo of selection by chiefs versus two alternatives: random lotteries and progressive selection based on household surveys. I use the random selection arm as a benchmark and estimate the relative efficiency of selection by chiefs or progressive selection in terms of generating more or less costly behavior from citizens. I also study the heterogeneous effects of these methods across household wealth. This allows me to assess if chiefs appear regressive by mostly burdening poor households and whether this can be corrected by a simple policy instrument. (JEL C93, D91, H21, H23, H41, I32, O12, O17)

---

\*Department of Economics, Stanford University. I gratefully acknowledge the funding support of the King Center on Global Development, the Center for African Studies at Stanford, the Weiss Fund for Research in Development Economics, and the International Growth Centre. For all data collection activities I thank the team of IPA Sierra Leone. Stanford IRB approved this study under protocol 62635. AEA RCT Registry ID: AEARCTR-0010593.

# I Introduction

In low-capacity states across sub-Saharan Africa development policy often relies on traditional or customary leaders to operate. These leaders, often called chiefs, have played important roles in various policies by assisting with targeting subsidies, collecting taxes, or managing local infrastructure projects (Basurto *et al.*, 2020; Balan *et al.*, 2022; Casey *et al.*, 2023). The involvement of chiefs seems particularly important when development initiatives need community support as chiefs can effectively mobilize people and resources towards community goals (Baldwin and Raffler, 2019; van den Boogaard and Santoro, 2023). This often happens because chiefs are in charge of organizing collective action for local public goods (Honig, 2022). As a result, chiefs seem to be critical for promoting cooperative behavior needed for development programs.

However, previous work also points out that involving chiefs in public good provision might lead to regressive informal taxation schemes, where very poor households devote important amounts of money, labor or goods to finance local public goods (Olken and Singhal, 2011; Walker, 2018; van den Boogaard *et al.*, 2019). This pattern is also consistent with how chiefs have historically relied on communal work mostly from young and poor men (Peters and Richards, 2011; Bulte *et al.*, 2018). More broadly, it supports the view that chiefs are mainly local elites with no electoral pressure and thus have little incentive to redistribute or promote broad community development (Acemoglu *et al.*, 2014). Put together, this seems to suggest a tradeoff for development policy. Involving chiefs in development programs promotes cooperative behavior useful to mobilize resources towards public goods, but at the expense of relatively poor households bearing significant costs.

In this paper, I examine the tradeoff highlighted above through a field experiment in rural Sierra Leone involving a public goods problem around a development program. In the experiment, participants are offered a simple one-day job with the condition that some of them can be selected as “community workers”. This means that instead of working for themselves, selected participants would work to help fund a real local public good, the local clinic. Essentially, this acts as an informal tax on labor which is quite common in this context (Bulte *et al.*, 2018; van den Boogaard *et al.*, 2019). Then, I compare the status quo approach of delegating selection of community workers to local chiefs relative to two other useful benchmarks: selecting community workers by random lotteries or using a progressive scheme based on wealth measures from household surveys. The former guarantees selection is transparent and not targeted towards any type of citizens, while the latter tests a simple policy instrument commonly used to target subsidies or taxes in low-income countries. This comparison is done by randomizing across communities which method is used to select workers for the public good.

In order to assess if involving chiefs in the selection of community workers is relatively effective at promoting cooperative behavior at the expense of relatively poor households, I focus on

measuring two key outcomes: (i) the extent to which citizens engage in costly actions to avoid contributing for a public good and (ii) conditional on being asked to contribute, how much effort do citizens exert towards the public good. Although both outcomes reflect cooperative behavior, the first is key to assess if redistribution through informal taxation imposes costs on citizens through distortions on individual behavior. If citizens do not distort their behavior when informally taxed then coercion might not be a key factor motivating contributions and they might be better understood as voluntary giving by citizens that internalize the social benefits of the public good. This approach is inspired by the literature studying the distortionary effects of redistribute pressure from kin or peers in low-income settings ([Jakiela and Ozier, 2016](#); [Boltz et al., 2019](#); [Carranza et al., 2022](#)).

To measure how participants distort their individual behavior and engage in costly behavior to avoid being selected to work for a public good, I implement the jobs program over a span of two days per community. This allows me to advertise upon recruitment that community workers will only be selected among people working on the second day. Participants are also explained that community workers do the same job as regular participants, but their earnings are donated to their local clinic. As a result, I can measure whether people act as if they are impatient and incur in private costs to shift their work towards the first day of the program<sup>1</sup>. In the experiment, this takes the form of participants being willing to accept a lower wage in order to work earlier. Moreover, I randomly comply with participant's preferences over working earlier to remove the selection bias among community workers to properly study how different selection methods affect effort towards the public good.

I first analyze the random selection arm in which I leverage within-community variation to cleanly estimate the elasticity of costly actions to avoid contributions to changes in how likely are they to be selected as community workers. In this arm, some participants are told they can never be selected as community workers while others are told they will face a lottery to decide if they are selected. I find that the possibility of selection by lotteries on average does not lead increases in costly actions to avoid contributions though changes workday decisions. However, there is substantial heterogeneity by wealth levels within communities. Importantly, wealthier participants are highly responsive to possibly being selected as community workers and shift their preferences towards working earlier. This means that the distortions created by informal taxation, when done by a transparent selection method that does not target any particular citizen, might fall mostly on the wealthier citizens.

Using random selection as a benchmark, I leverage the experimental variation across communities to investigate the aggregate effects on cooperative behavior of delegating selection to chiefs or using a progressive selection method to select community workers. I find evidence

---

<sup>1</sup>This resembles the behavioral response identified by [Exley \(2016\)](#) where participants in an experiment display relatively more risk aversion when risk can be used as an excuse to avoid charitable donations.

consistent which chiefs being relatively effective at promoting cooperative behavior, as on average participants assigned to chief selection distort their behavior less than random selection. They accept wage-cuts that are on average 7 percentage points less than participants under random selection. I also find evidence of some participants exerting more effort towards the public good when chiefs select community workers. Secondary outcomes point towards conditional cooperation and perceptions of social punishments as possible mechanisms explaining the advantages of involving chiefs.

Finally, I conduct a pre-specified heterogeneity analysis based on differences in household wealth across participants. This allows me to check whether involving chiefs in the selection of community workers leads to a higher prevalence of costly actions to avoid the public good among the poorest households and if a simple progressive mechanism can counteract this pattern. My results show no evidence of regressive informal taxation by chiefs. More surprisingly, the progressive selection scheme leads to substantial more regressiveness in terms of relatively poor households preferring early work than richer households in these communities. This pattern points towards the perils of simple redistribution schemes in settings where income and wealth are not easily observable. Moreover, my results point towards other important sources of heterogeneity relevant to explain who distorts their behavior when chiefs are in charge of selection, namely demographics like sex and age and more importantly how close are participants to their customary leaders. These results suggest scholars might need to re-evaluate their concerns about informal taxation being particularly burdensome for the poorest households and switch to a more nuanced approach where winners and losers of these redistribution schemes are determined by more complex relationships with local institutions and leaders.

## I.A Related work

The first line of work I contribute to has focused extensively on how chiefs affect development in sub-Saharan Africa ([Herbst, 2000](#); [Baldwin, 2015](#); [Bulte et al., 2018](#)). In this context, scholars have focused on the how lack of electoral accountability affects how chiefs operate ([Acemoglu et al., 2014](#); [Baldwin, 2013](#); [Baldwin and Holzinger, 2019](#)). This has lead to multiple studies on whether customary forms of governance complement or substitute democratic ones ([Holzinger et al., 2016](#); [Henn, 2023](#); [van der Windt et al., 2019](#)). I contribute to this comparative study of the chieftaincy by providing empirical evidence of whether chiefs are regressive when providing local public goods. If so, this would be consistent with chiefs representing the interests of local elites and opens the door to redistribution through more democratic institutions ([Acemoglu and Robinson, 2000](#)).

Multiple studies have focused on specific roles chiefs can play in development policy. This includes tasks like collecting taxes ([Balan et al., 2022](#)), targeting subsidies ([Basurto et al., 2020](#)),

managing local projects (Casey *et al.*, 2023), or land allocation in rural areas (Goldstein and Udry, 2008; Honig, 2017). My work adds to these studies by studying another instance in which chiefs have to choose beneficiaries of a development program. However, the novelty of my study comes from focusing on how this selection process alters citizens incentives to contribute to local public goods.

I particularly contribute to the work assessing how traditional leaders solve local public goods problems and promote cooperation —work not exclusively focused on chiefs (Diaz-Cayeros *et al.*, 2014; Magaloni *et al.*, 2019). This literature also includes the extensive work on informal taxation and how traditional leaders fund these local projects Olken and Singhal (2011); van den Boogaard *et al.* (2019); Walker (2018). Within this space, this study is closely related to the work of Beekman *et al.* (2014), who studies how corruption by chiefs in Liberia creates disincentives to cooperate, and the work of Goist and Kern (2018), who implement a lab-in-the-field to study how chiefs promote cooperation. I add to this work by implementing a field experiment framed as a real development policy where chiefs make consequential decisions and carefully measure how this alters individual decision making in the face of redistribution.

Finally, my work also adds to the extensive work on development economics on instruments to target anti-poverty measures to the individuals who need it the most (Hanna and Olken, 2018; Elbers *et al.*, 2007; Haushofer *et al.*, 2022). This includes work on targeting instruments relying on community leaders (Alatas *et al.*, 2019; Basurto *et al.*, 2020), peer information (Dupas *et al.*, 2022; Trachtman *et al.*, 2022), or poverty indices based on household surveys (Banerjee *et al.*, 2020; Brown *et al.*, 2018). I contribute to this strand of work by comparatively studying the behavior of citizens when community leaders redistribute relatively to a progressive approach using a simple poverty index.

## II Experimental design

To study how chiefs informally tax citizens around development projects, I implement a simple program offering simple jobs to people in 88 communities across 6 districts of rural Sierra Leone. The communities are sampled by selecting 44 rural sections across the 6 districts and visiting two communities per section. The locations were sampled to prioritize areas with low state presence proxied by relatively low population density in order to study how chiefs operate far from the state. Within each section, field teams were given a protocol to select two communities per section, avoiding large towns, and prioritizing communities similar to each other. Figure 1 below displays the 44 samples sections.

The key feature of the jobs program is that some participants work and earn money for themselves, while others are selected to work for a public good instead. The experiment then ran-

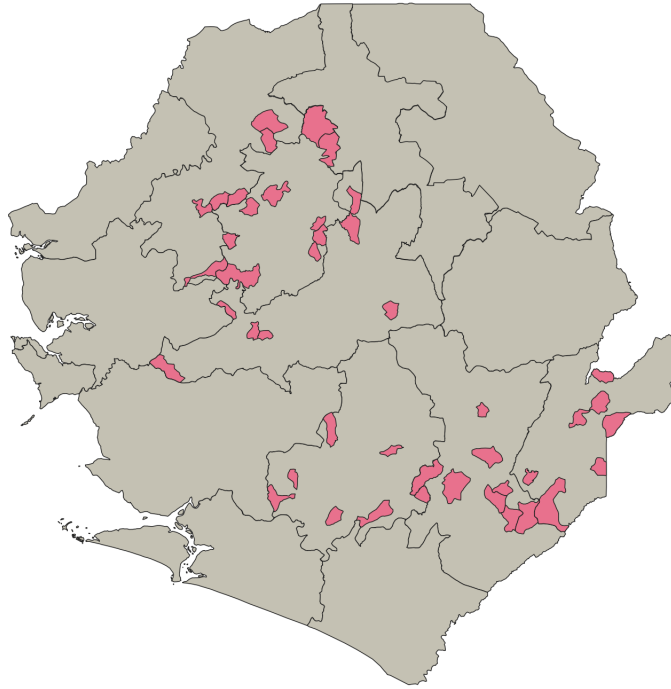


Figure 1: Sampled sections

domized across communities different methods of selecting who works for the public good, one of them being delegating the selection to local chiefs. I proceed by explaining how the program is implemented and what this allows me to measure, to then explain in detail the selection mechanisms randomized across different communities.

## II.A The jobs program

The basic idea of the program is to provide one-day jobs to people in each community visited, thus creating an activity where participants are individually rewarded for their effort. The job task is classifying Sierra Leonean names by gender and ethnicity; a task that is framed as useful for a local NGO which is outsourcing it at scale in rural communities.

To create a public good problem, participants are informed that some of them will be selected to work for their community. I call them “community workers”. In practice, selected participants will do the job as usual, but the majority of their earnings will be automatically donated by the program to a real local public good. This public good is the clinic or health center serving each community. As a result, selected participants do not profit directly from their effort and the program might become less attractive to them.

In order to capture each participant’s willingness to be part of the public good problem, I implement the jobs program over the course of two days in each community. This allows me

to inform participants that the selection of community workers only takes place on the second day. This is explained graphically in Figure 2. This key feature of the experimental design implies that participants who want to avoid being selected should prefer to work on the first day of the program. I leverage this feature to elicit participant's preferences over which day to work on and learn which participants want to avoid the public good. This will be the main outcome of the experiment, which is explained in detail in the next subsection.

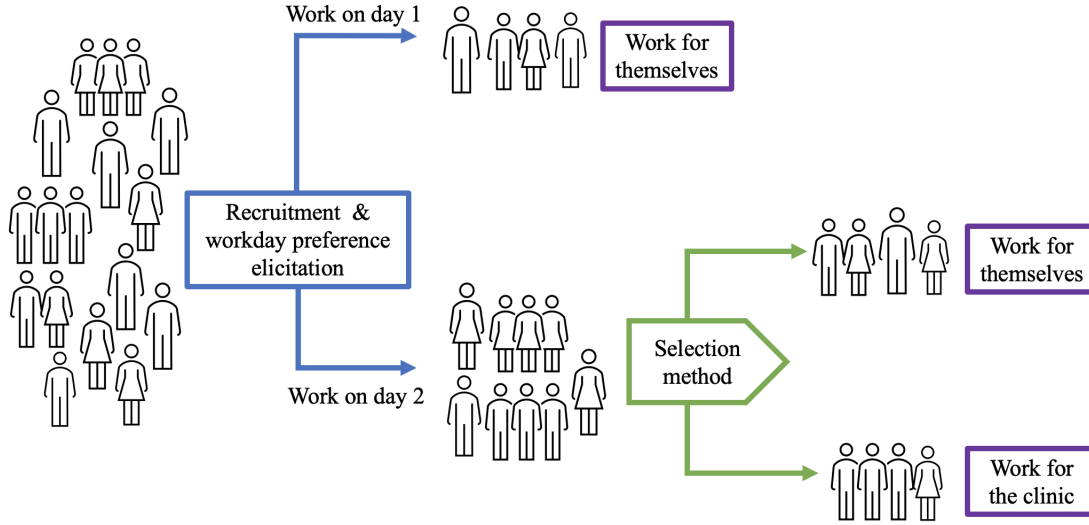


Figure 2: Two-day design of the experiment for each community

During the job program participants answer two individual surveys which provide useful information for the analysis of the experiment. In the recruitment survey, besides participant's preferences over which day to work, I also collect an extensive battery of demographic questions. This allows me to approximate the relative household wealth of participants in the experiment, as well as obtain other information that might mediate how participants interact with their local leaders. I also ask participants a series of perception questions about the job program and the selection of community workers. These perception questions act as secondary outcomes that shed light on mechanisms explaining why some selection methods promote more cooperation than. They include perceptions of fairness, compliance with selection, conditional cooperation, and punishments for non-compliers.

The job task by which participants earn money for themselves or for the public good takes place during the second survey. This name classification task is separated in different pages and participants choose how many they complete. They get paid proportionally by completion so participants can stop doing the task at any time. I use this to measure effort in the experiment, which for selected workers it is also a measure of contributions. This allows me to comprehensively study contributions in this experimental public good, capturing both the



extensive margin of contributions through participant's preferences over which day to work on and the intensive margin of contributions for community workers based on their effort.

## II.B Main outcome of the experiment

Eliciting participant's preferences over which day to work allows me to capture whether people engage in costly actions to avoid contributions to a public good. To measure this, I use a Multiple Price List (MPL) to let elicit how big of a wage-cut are participants willing to accept in order to work on the first day<sup>2</sup>. These decisions are made after recruitment and knowing how selection of workers in each community will work. Participants know that their the program will try to use their choices to decide if they work on the first or second day the program, guaranteeing incentive compatibility. However, some random set of participants are only offered jobs on the second day in order to properly study effort contributions regardless their work-day preferences.

This elicited wage-cut captures both impatience over the job earnings and participant's willingness incur in a cost to avoid being selected. Importantly, the experiment includes a treatment arm where some participants can never be selected in order to isolate the impatience component of this outcome. Then, the experimental variation I generate from implementing different selection methods across communities allows me to properly infer if participants take on private costs to avoid contributing to the public good.

The focus of this experiment on measuring costly actions to avoid contributions stems from multiple reasons. First, engaging in costly behavior to avoid public good contribution directly speaks to the inefficiencies of solving a collective action problem. In this experiment, this takes the form of communities not getting all the resources made available to them due to individual incentives.

Moreover, measuring costly actions to avoid contributions improves upon previous work on informal taxation by cleverly parsing out the coercive nature of public good contributions. This happens because incentives in the experiment are such that anyone who voluntarily wants to help the clinic should not accept wage-cuts to work earlier. Methods like household surveys do not correctly account for voluntary giving and might overestimate the burden of informal taxation and how it is distributed. This experiment then provides a novel measurement strategy in the literature of informal taxation.

Finally, the two-day design allows participants to mask their decision to avoid the public good under other reasons that might lead them to prefer working on the first day. This is an important feature of this experimental design as other types of questions about contributing to public

---

<sup>2</sup>Participants making multiple decisions of the form "do you prefer working for \$X today or \$Y tomorrow" for different values of X and a fixed value of Y, where  $X \leq Y$ .



goods and particularly when they involve the role of traditional leaders might suffer from social desirability bias. Community members might want NGOs to continue funding them and as a result have incentives to present themselves as pro-social and their chiefs as benevolent leaders. Allowing respondents to mask their contribution decision and expectations about leaders in their work-day decisions should help to elicit less biased behavior.

## II.C Selection methods

For this experiment I randomize communities into three possible selection methods. These randomization is done stratifying at the district level for the 6 districts where the program is implemented. In all communities, being selected or not have the same implications. People selected to work for the clinic will complete the job as everyone else, but a high share (90%) of the money they generate will be given by the program to their local clinic. Participants do not operate as intermediaries and the labor tax is fully enforced<sup>3</sup>. On the other hand, participants who are not selected get to keep all of their experimental income.

The selection method used in each community is explained in detail to participants when they are recruited. This is done just before eliciting the wage-cut participants are willing to accept to work one day earlier in the program. However, as some participants will work on the first day in each community and avoid being selected, these selection methods are only implemented with participants working on the second day of the program. The three selection methods randomized in these experiments across communities are:

1) *Random Selection*: This treatment arm serves as a benchmark for the experiment as it uses a simple transparent lottery to decide whether each participant working on the second day is selected to work for the clinic or not. I randomize participants within these communities into three different lotteries to determine their selection: 0% chance of selection, 25% chance of selection, and 50% chance of selection.

This lottery randomization allows me to use individual-level variation to estimate how participants react to different likelihoods of being selected in an environment without any discretion or any bias in the selection process. The fact that some participants are never selected (0% chance arm) allows me to measure the wage-cuts participants would accept only driven by impatience. The other two lotteries allow me to estimate how increasing the chances of selection mechanically drive up the wage-cuts participants are willing to accept. This helps me benchmark the extent to which people engage in costly actions to avoid contributions for a transparent and unbiased mechanism of selection.

---

<sup>3</sup>Enforcement of contributions is an important dimension this experiment abstracts away from, particularly since chiefs have a clear advantage on this dimension I implement perfect enforcement to focus on the inherent redistribution tension of informal taxation schemes.

2) *Chiefs Selects*: In communities assigned to this selection method, I will ask village chiefs at the end of the first day or work in each community to select who they believe should work for the clinic. This also involves explaining to the chief the nature of the program, particularly how some people will work and keep their earnings while others work to help the community by funding the local clinic. Chiefs will select community workers by choosing half of the people from the list of all participants in the program. However, as some people might have chosen to work on the first day, only people available to work on the second day and selected by the chief will work for the clinic.

I interpret this method as the status quo method used in rural communities to decide who bears the costs of funding or providing local public goods, which can be thought as an informal tax on rural citizens (Olken and Singhal, 2011). By comparing participants willingness to engage in costly actions to avoid contributions when chiefs selects versus the benchmark of random selection, I can test if chiefs are relatively efficient at solving collective action problems and whether the poorest households bear particularly high costs of informal taxation by chiefs.

3) *Progressive Selection*: Participants in communities where I implement progressive selection are told that the program will use survey questions about their living conditions to target participants from wealthier households to work for the clinic. Importantly all the demographic questions used to implement this progressive selection are collected during recruitment before explaining the jobs program. To to this, the recruitment survey uses multiple questions standard to household surveys for rural areas to calculate a an index of wealth; much in the spirit of Proxy-Means Tests (PMT) targeting. Field teams will have access to these index and will select half of workers available on the second day based on this wealth index.

The motivation to implement this selection method stems from its connection to policy instruments like the PMT to target subsidies. This treatment arm allows me to test this progressive method of selecting beneficiaries in a situation when the tension between winners and losers of the selection process is more salient. With usual subsidies, communities might perceive them as benefiting targeted households while the rest stay the same. In this experiment, this selection method makes more salient that in principle everyone was benefiting from the jobs, but the wealthier households are asked to redistribute. Thus, this arm allows me to study how do communities react to progressive approaches to redistribution based on household surveys in settings, particularly in a context where is hard to measure people's wealth and surveys only provide a noisy proxy.

*Randomization*: The three selection methods described above are randomized at the community level in this experiment. As mentioned before, the sample was obtained by sampling 44 sections and then visiting two communities with each section. Approximately one third of the communities were assigned to each method. Within the random selection arm, approximately 40% of respondents face zero chances of selection and the remainder are equally split between

the 25% and 50% lotteries. Table 1 below shows the experiment balances individual and community characteristics across treatment arms.

Table 1: Balance Table

| Variables             | N   | Outcome Mean |         |             |         | F Test  |
|-----------------------|-----|--------------|---------|-------------|---------|---------|
|                       |     | Full Sample  | Chief   | Progressive | Random  | P value |
| Population            | 56  | 52.429       | 56.900  | 53.812      | 46.850  | 0.028   |
| Time to HQ town (Min) | 56  | 103.732      | 112.750 | 107.125     | 92.000  | 0.983   |
| Age                   | 859 | 25.527       | 25.081  | 25.258      | 26.181  | 0.545   |
| Male=1                | 859 | 0.650        | 0.634   | 0.658       | 0.658   | 0.945   |
| Years of Education    | 859 | 23.952       | 24.385  | 23.788      | 23.648  | 0.044   |
| Years in Community    | 859 | 14.115       | 12.819  | 14.471      | 15.132  | 0.121   |
| Works=1               | 859 | 0.360        | 0.356   | 0.362       | 0.361   | 0.967   |
| Weekly Income (USD)   | 305 | 7.890        | 7.419   | 8.519       | 7.863   | 0.969   |
| Wealth Index          | 859 | 0.000        | 0.017   | -0.046      | 0.019   | 0.103   |
| Job Test (Seconds)    | 859 | 145.095      | 139.945 | 143.142     | 151.742 | 0.000   |

Notes: First two variables, population measured by number of households and time to travel to headquarter town in chiefdom, are measured at the community level. Remaining variables are measured in individual surveys.

### III Empirical strategy (Preliminary Results from Partial Data)

I analyze this experiment in the following order. I begin by describing participant's behavior under the random selection arm as it provides a natural benchmark for citizens' willingness to engage with this experimental public good. This arm also introduces individual-level variation useful to characterize how the main experimental outcome varies with controlled changes in the selection method. I then analyze the effect of delegating the selection of public good workers to chiefs and the effect of implementing a progressive selection method. Finally, I explore how heterogeneous are the effects of including chiefs or implementing progressive selection along the wealth dimension.

#### III.A Random selection

The random selection treatment arm provides a useful starting point to analyzing this experiment as it uses simple and transparent lotteries to decide who works for the clinic. In this arm, I take advantage of the individual-level variation created for participants in terms of the

exact lottery they face when selecting community workers. Participants are assigned to face a likelihood of selection of either 0, 25%, or 50%. Let's denote this probability for participant  $i$  as  $Prob_i$ . I can use this variation to study how much do costly actions to avoid contributions increase when the likelihood of selection increases. That is, I can estimate how elastic is the wage-cut participants are willing to accept to changes in the likelihood of selection. I do this with the regression below, which captures a linear approximation to this elasticity through  $\theta_0$ , controlling for community level fixed effects denoted by  $\mu_c$ , and studying heterogeneity by wealth levels denoted by wealth  $W_{ic}$ . Importantly, wealth is demeaned to leverage within community variation.

$$Y_{ic} = \mu_c + \theta_0 Prob_{ic} + \gamma_0 Prob_{ic} \cdot W_{ic} + \varepsilon_{ic}$$

The regression above allows me to test the following two hypothesis and results are shown in Table 2:

1.  $\theta_0 > 0$ : This test confirms whether the selection process in this experiment does reflect an informal tax on labor which leads to participants to engage in costly behavior to avoid selection. The magnitude of  $\theta_0$  is also very important, as it reflects how elastic is participant's behavior to changes in the likelihood of selection, for a transparent selection method that does not target any type of citizen. This benchmark is useful to then study alternative selection methods that potentially do target particular individuals.
2.  $\gamma_0 < 0$ : This test captures whether the informal tax implemented through random selection leads to a regressive distribution of costly behavior to avoid contributions. This test shows how a selection method that does not particularly target poor households can still lead to outcomes consistent with regressive informal taxation. This can happen if poorer households are more impatient or have a higher marginal utility of their earnings. Thus, it is important to characterize how other individual characteristics might lead to results that appear regressive even when selection is random. Again, the magnitude of  $\gamma_0$  is also important as it will be used as a benchmark to characterize how progressive or regressive are the alternative selection methods implemented in the experiment.

Table 2: Results from Random Selection

| VARIABLES              | (1)                 | (2)               | (3)                  | (4)                 | (5)                 | (6)                  |
|------------------------|---------------------|-------------------|----------------------|---------------------|---------------------|----------------------|
|                        | Accepted Wage-cut   |                   |                      | Work Today          |                     |                      |
| Lottery                | 0.018<br>(0.040)    | 0.000<br>(0.041)  | -0.006<br>(0.040)    | -0.019<br>(0.061)   | -0.044<br>(0.061)   | -0.053<br>(0.060)    |
| Wealth Index           |                     | -0.080<br>(0.050) | -0.151***<br>(0.054) |                     | -0.195**<br>(0.079) | -0.312***<br>(0.083) |
| Lottery X Wealth Index |                     |                   | 0.243**<br>(0.123)   |                     |                     | 0.400**<br>(0.197)   |
| Constant               | 0.313***<br>(0.021) | 0.026<br>(0.137)  | 0.052<br>(0.139)     | 0.567***<br>(0.033) | -0.075<br>(0.190)   | -0.032<br>(0.192)    |
| Observations           | 310                 | 310               | 310                  | 310                 | 310                 | 310                  |
| R-squared              | 0.082               | 0.122             | 0.135                | 0.063               | 0.121               | 0.136                |
| Controls               | No                  | Yes               | Yes                  | No                  | Yes                 | Yes                  |

Notes: All regressions include district fixed effects. Lottery is a dummy that measures whether a participant can be selected by a lottery to work as community workers. The wealth index is standardized to have mean zero. The accepted wage-cut is measured as a proportion of the highest wage in the experiment. Work today captures accepting all wage-cuts. Robust standard errors in parentheses \*\*\*p<0.01, \*\*p<0.05, \*p<0.1

### III.B Aggregate results

I then leverage the community level randomization to compare on aggregate how selection by chiefs and progressive selection differ from random selection. I begin by studying the main experimental outcome which is the prevalence of costly actions to avoid contributions. This speaks to how efficient are these selection methods when using resources made available to communities. The main specification I use to study this uses as outcome the largest wage-cut accepted by each participant. This regression relies on variation across communities within the geographic areas by adding section-level fixed effects  $\mu_s$  and estimates the effect of delegating selection to chiefs, captured by  $\beta_1$ , and the effect of implementing a progressive selection method, captured by  $\beta_2$ , relative to random selection.

$$Y_{ics} = \mu_s + \beta_1 Chief_c + \beta_2 Progressive_c + \varepsilon_{ics}$$

This regression allows me to test two hypothesis and results are shown in Table 3.

1.  $\beta_1 < 0$ : I test if on average chiefs are relatively efficient leaders which induce in less costly action by citizens to avoid selection than random selection. This is stressed by previous work on the role chiefs play in local development policy in many areas of SSA due to their role in solving collective action problems.

2.  $\beta_2 > 0$ : Additionally, I can test whether a progressive selection method incurs in efficiency costs relative to a random selection. This hypothesis is consistent with relatively wealthy participants being less willing to contribute to public goods or more generally with participants not trusting redistribution mechanisms that imperfectly capture wealth in this context.

Table 3: Aggregate Comparison of Selection Methods

| VARIABLES    | (1)<br>Accepted     | (2)<br>Wage-cut     | (3)<br>Work Today   | (4)<br>Work Today    | (5)<br>Complete Task | (6)<br>Complete Task | (7)<br>Extra Effort | (8)<br>Extra Effort |
|--------------|---------------------|---------------------|---------------------|----------------------|----------------------|----------------------|---------------------|---------------------|
| Chief        | -0.070**<br>(0.030) | -0.059*<br>(0.030)  | -0.072<br>(0.045)   | -0.057<br>(0.046)    | -0.052<br>(0.063)    | -0.050<br>(0.062)    | 0.109<br>(0.098)    | 0.098<br>(0.102)    |
| Progressive  | 0.006<br>(0.032)    | 0.010<br>(0.031)    | 0.017<br>(0.047)    | 0.022<br>(0.046)     | 0.002<br>(0.062)     | -0.002<br>(0.064)    | 0.044<br>(0.098)    | 0.014<br>(0.104)    |
| Wealth Index |                     | -0.073**<br>(0.034) |                     | -0.133***<br>(0.050) |                      | -0.089<br>(0.059)    |                     | 0.121<br>(0.101)    |
| Constant     | 0.342***<br>(0.024) | 0.040<br>(0.100)    | 0.581***<br>(0.035) | 0.047<br>(0.150)     | 0.880***<br>(0.054)  | 0.563***<br>(0.183)  | 0.313***<br>(0.084) | 0.350<br>(0.287)    |
| Observations | 735                 | 735                 | 735                 | 735                  | 264                  | 264                  | 226                 | 226                 |
| R-squared    | 0.041               | 0.069               | 0.037               | 0.073                | 0.070                | 0.177                | 0.021               | 0.063               |
| Controls     | No                  | Yes                 | No                  | Yes                  | Yes                  | Yes                  | Yes                 | Yes                 |

Notes: All regressions include district fixed effects. Chief and Progressive are dummies for the selection method assigned at the community level. The wealth index is standardized to have mean zero. The accepted wage-cut is measured as a proportion of the highest wage in the experiment. Work today captures accepting all wage-cuts. Completing the task is a dummy for a participant finishing the 8 units of work offered to them and Extra effort is a dummy for a participant doing three extra units of effort upon completing the task. These last two outcomes are restricted to community workers. Robust standard errors in parentheses \*\*\*p<0.01, \*\*p<0.05, \*p<0.1

After analyzing the extensive margin of contributions and how participants are willing to incur in private costs to avoid contributions, I also study how different selection methods lead to participants to exert more or less effort during the experiment. This is particularly interesting for people selected by each mechanism to work for the public good. I do this through the same specification but now use as the main outcome the number of units of work completed by each selected participant. I then test two additional hypotheses related to the tests presented before: whether chiefs are relatively efficient by promoting more effort by selected workers relative to random selection, and whether progressive selection is relatively inefficient by leading to less incentives to exert effort among selected participants. These results are also shown in Table 3.

To complement these aggregate results, I also explore mechanisms that can explain how these selection methods differ. To do this, I use the same specification with the following secondary outcomes in Table ?. First, I measure the perceived effectiveness of each selection method to generate compliance with working for the clinic and how much effort do participants expect of

others conditional on selection. This allows me to study if conditional cooperation drives the previous results. Second, I also measure participant’s perceptions of how fair is each selection method to explore how this impacts cooperation. Finally, I ask participants if they believe any type of social sanction might be applied to people not working for the public good even when selected. This speaks to the importance of social norms that enforce cooperation, even in this experimental setting where such punishments are technically not possible due to all decisions being done in private.

### III.C Distributional implications

I then focus on the distributional properties of each selection mechanism in the experiment by comparing selection by chiefs and progressive selection to random selection for participants with different wealth levels within each community visited. The main motivation of this analysis is to study if selection by chiefs leads to regressive patterns of informal taxation where the poorest households pay larger private costs to avoid selection and whether a simple policy tool can revert that pattern.

To answer these questions, I run the same specification as before but now focusing on heterogeneous treatment effects of the chiefs and progressive arms along the wealth dimension. I do this through two variables associated to household wealth and wellbeing: (a) an index of household’s material wealth based on survey questions<sup>4</sup>, and (b) average rankings of wellbeing and living conditions asked to participants about others in their community. The first index based on survey questions is very similar to what is used by the field teams to select community workers in the progressive arm, thus I can test if this selection method accomplished its goal of removing the burden of informal taxation from the poorest households. The exact regression I estimate is the following, using again participant’s largest accepted wage-cut to work earlier as the main outcome and leveraging within section variation:

$$Y_{ics} = \mu_s + \lambda W_{ics} + \beta_1 Chief_c + \beta_2 Progressive_c + \gamma_1 W_{ics} \cdot Chief_c + \gamma_2 W_{ics} \cdot Progressive_c + \varepsilon_{ics}$$

This specification lets me test the following hypothesis and results are shown in Table 4:

1.  $\gamma_1 < 0$ : This hypothesis implies that chiefs are relatively regressive in this experiment as the poorest households in each community will be more likely to pay private costs to avoid selection. Importantly, this pattern will be relative to random selection which already captures other individual parameters driving behavior which can lead to poorer households acting more impatiently in this experiment.

---

<sup>4</sup>The index standardizes and adds multiple variables that proxy for wealth in rural areas. The survey questions used for the index are: items owned by household, landownership, animal ownership, materials of dwelling, rooms in dwelling per person in household, and ability of household to cope with shocks.



2.  $\gamma_2 > 0$ : I also test if the progressive arm achieves its goal, making poorer households less burdened by selection and shifting those costs to richer participants.

Table 4: Heterogenous Effects by Wealth & other Covariates

| VARIABLES                          | (1)               | (2)      | (3)       | (4)        | (5)       | (6)       |
|------------------------------------|-------------------|----------|-----------|------------|-----------|-----------|
|                                    | Accepted Wage-cut |          |           | Work Today |           |           |
| Chief                              | -0.058*           | 0.021    | -0.052*   | -0.056     | 0.086     | -0.045    |
|                                    | (0.030)           | (0.043)  | (0.030)   | (0.046)    | (0.066)   | (0.045)   |
| Progressive                        | 0.007             | 0.064    | 0.017     | 0.018      | 0.096     | 0.034     |
|                                    | (0.031)           | (0.046)  | (0.031)   | (0.046)    | (0.069)   | (0.046)   |
| Wealth Index                       | 0.032             |          |           | -0.002     |           |           |
|                                    | (0.068)           |          |           | (0.106)    |           |           |
| Young Men                          |                   | 0.175**  |           |            | 0.251**   |           |
|                                    |                   | (0.075)  |           |            | (0.109)   |           |
| Close to Chief Index               |                   |          | 0.103**   |            |           | 0.170***  |
|                                    |                   |          | (0.044)   |            |           | (0.065)   |
| Chief X Wealth Index               | -0.082            |          |           | -0.094     |           |           |
|                                    | (0.087)           |          |           | (0.132)    |           |           |
| Progressive X Wealth Index         | -0.219**          |          |           | -0.284**   |           |           |
|                                    | (0.089)           |          |           | (0.133)    |           |           |
| Chief X Young Men                  |                   | -0.145** |           |            | -0.263*** |           |
|                                    |                   | (0.061)  |           |            | (0.091)   |           |
| Progressive X Young Men            |                   | -0.096   |           |            | -0.132    |           |
|                                    |                   | (0.063)  |           |            | (0.093)   |           |
| Chief X Close to Chief Index       |                   |          | -0.179*** |            |           | -0.262*** |
|                                    |                   |          | (0.051)   |            |           | (0.077)   |
| Progressive X Close to Chief Index |                   |          | -0.114**  |            |           | -0.186**  |
|                                    |                   |          | (0.055)   |            |           | (0.080)   |
| Constant                           | 0.027             | -0.062   | 0.028     | 0.030      | -0.091    | 0.036     |
|                                    | (0.100)           | (0.107)  | (0.101)   | (0.150)    | (0.163)   | (0.150)   |
| Observations                       | 735               | 735      | 735       | 735        | 735       | 735       |
| R-squared                          | 0.077             | 0.079    | 0.085     | 0.079      | 0.086     | 0.088     |
| Controls                           | Yes               | Yes      | Yes       | Yes        | Yes       | Yes       |

Notes: All regressions include district fixed effects. Chief and Progressive are dummies for the selection method assigned at the community level. The wealth index is standardized to have mean zero. Young men is a dummy for male participants with less than 35 years old. Closeness to the chief is a standardized index combining multiple variables measuring how much a participant interacts with chiefs. The accepted wage-cut is measured as a proportion of the highest wage in the experiment. Work today captures accepting all wage-cuts. Robust standard errors in parentheses \*\*\*p<0.01, \*\*p<0.05, \*p<0.1

I study these two hypothesis for each measure of wealth to understand the implication of each selection method both for survey measures of material wealth and for perceived wealth by other community members. This allows me to uncover whether each selection method is progressive or regressive only through the lens of a particular approach of measuring wealth or if patterns

Table 5: Selection by Chiefs

are consistent across measurement strategies. I additionally check whether this heterogeneity analysis is driven by other possible sources of heterogeneity in this context like age, gender, or closeness to the chiefs. These results are also shown in Table 4.

### **III.D Additional analysis**

I complement the experimental analysis by describing who the chiefs select in the experiment. This adds to the previous results by focusing on what chiefs do instead of studying participant's behavior during the experiment driven by their perceptions of chiefs. As result, I am able to observe if participant's beliefs about the likelihood of being selected by their chief are actually accurate and which demographic characteristics are associated to actually being selected by the chief. These results are shown in Table 5.

## References

- ACEMOGLU, D., REED, T. and ROBINSON, J. A. (2014). Chiefs: Economic Development and Elite Control of Civil Society in Sierra Leone. *Journal of Political Economy*, **122** (2), 319–368, publisher: The University of Chicago Press.
- and ROBINSON, J. A. (2000). Democratization or repression? *European Economic Review*, **44** (4–6), 683–693.
- ALATAS, V., BANERJEE, A., HANNA, R., OLKEN, B. A., PURNAMASARI, R. and WAI-POI, M. (2019). Does Elite Capture Matter? Local Elites and Targeted Welfare Programs in Indonesia. *AEA Papers and Proceedings*, **109**, 334–339.
- BALAN, P., BERGERON, A., TOUREK, G. and WEIGEL, J. L. (2022). Local Elites as State Capacity: How City Chiefs Use Local Information to Increase Tax Compliance in the Democratic Republic of the Congo. *American Economic Review*, **112** (3), 762–797.
- BALDWIN, K. (2013). Why Vote with the Chief? Political Connections and Public Goods Provision in Zambia. *American Journal of Political Science*, **57** (4), 794–809, \_eprint: <https://onlinelibrary.wiley.com/doi/pdf/10.1111/ajps.12023>.
- (2015). *The Paradox of Traditional Chiefs in Democratic Africa*. Cambridge Studies in Comparative Politics, Cambridge: Cambridge University Press.
- and HOLZINGER, K. (2019). Traditional Political Institutions and Democracy: Reassessing Their Compatibility and Accountability. *Comparative Political Studies*, **52** (12), 1747–1774, publisher: SAGE Publications Inc.
- and RAFFLER, P. (2019). Traditional leaders, service delivery, and electoral accountability. *Decentralized governance and accountability*, pp. 61–90, publisher: Cambridge University Press Cambridge, UK.
- BANERJEE, A., HANNA, R., OLKEN, B. A. and SUMARTO, S. (2020). The (lack of) distortionary effects of proxy-means tests: Results from a nationwide experiment in Indonesia. *Journal of Public Economics Plus*, **1**, 100001.
- BASURTO, M. P., DUPAS, P. and ROBINSON, J. (2020). Decentralization and efficiency of subsidy targeting: Evidence from chiefs in rural Malawi. *Journal of Public Economics*, **185**, 104047.
- BEEKMAN, G., BULTE, E. and NILLESEN, E. (2014). Corruption, investments and contributions to public goods: Experimental evidence from rural Liberia. *Journal of Public Economics*, **115**, 37–47.

- BOLTZ, M., MARAZYAN, K. and VILLAR, P. (2019). Income hiding and informal redistribution: A lab-in-the-field experiment in Senegal. *Journal of Development Economics*, **137**, 78–92.
- BROWN, C., RAVALLION, M. and VAN DE WALLE, D. (2018). A poor means test? Econometric targeting in Africa. *Journal of Development Economics*, **134**, 109–124.
- BULTE, E., RICHARDS, P. and VOORS, M. (2018). Chiefs and Chieftaincy. In E. Bulte, P. Richards and M. Voors (eds.), *Institutions and Agrarian Development: A New Approach to West Africa*, Palgrave Studies in Agricultural Economics and Food Policy, Cham: Springer International Publishing, pp. 85–112.
- CARRANZA, E., DONALD, A., GROSSET, F. and KAUR, S. (2022). The Social Tax: Redistributive Pressure and Labor Supply. *Working Paper*, p. 69.
- CASEY, K., GLENNERSTER, R., MIGUEL, E. and VOORS, M. (2023). Skill Versus Voice in Local Development. *The Review of Economics and Statistics*, **105** (2), 311–326.
- DIAZ-CAYEROS, A., MAGALONI, B. and RUIZ-EULER, A. (2014). Traditional Governance, Citizen Engagement, and Local Public Goods: Evidence from Mexico. *World Development*, **53**, 80–93.
- DUPAS, P., FAFCHAMPS, M. and HOUEIX, D. (2022). Measuring Relative Poverty through Peer Rankings: Evidence from ivory coast.
- ELBERS, C., FUJII, T., LANJOUW, P., OZLER, B. and YIN, W. (2007). Poverty alleviation through geographic targeting: How much does disaggregation help? *Journal of Development Economics*, **83** (1), 198–213.
- EXLEY, C. L. (2016). Excusing Selfishness in Charitable Giving: The Role of Risk. *The Review of Economic Studies*, **83** (2 (295)), 587–628, publisher: [Oxford University Press, The Review of Economic Studies, Ltd.].
- GOIST, M. and KERN, F. G. (2018). Traditional institutions and social cooperation: Experimental evidence from the Buganda Kingdom. *Research & Politics*, **5** (1), 2053168017753925, publisher: SAGE Publications Ltd.
- GOLDSTEIN, M. and UDRY, C. (2008). The Profits of Power: Land Rights and Agricultural Investment in Ghana. *Journal of Political Economy*, **116** (6), 981–1022, publisher: The University of Chicago Press.
- HANNA, R. and OLKEN, B. A. (2018). Universal Basic Incomes versus Targeted Transfers: Anti-Poverty Programs in Developing Countries. *Journal of Economic Perspectives*, **32** (4), 201–226.
- HAUSHOFER, J., NIEHAUS, P., PARAMO, C., MIGUEL, E. and WALKER, M. W. (2022). Targeting Impact versus Deprivation.

- HENN, S. J. (2023). Complements or Substitutes? How Institutional Arrangements Bind Traditional Authorities and the State in Africa. *American Political Science Review*, **117** (3), 871–890.
- HERBST, J. (2000). *States and Power in Africa: Comparative Lessons in Authority and Control*. Princeton University Press, stu - student edition, 2 edn.
- HOLZINGER, K., KERN, F. G. and KROMREY, D. (2016). The Dualism of Contemporary Traditional Governance and the State: Institutional Setups and Political Consequences. *Political Research Quarterly*, **69** (3), 469–481, publisher: [University of Utah, Sage Publications, Inc.].
- HONIG, L. (2017). Selecting the state or choosing the chief? the political determinants of smallholder land titling. *World Development*, **100**, 94–107.
- (2022). *Land Politics: How Customary Institutions Shape State Building in Zambia and Senegal*. Cambridge University Press.
- JAKIELA, P. and OZIER, O. (2016). Does Africa Need a Rotten Kin Theorem? Experimental Evidence from Village Economies. *The Review of Economic Studies*, **83** (1), 231–268.
- MAGALONI, B., DÁAZ-CAYEROS, A. and RUIZ EULER, A. (2019). Public Good Provision and Traditional Governance in Indigenous Communities in Oaxaca, Mexico. *Comparative Political Studies*, **52** (12), 1841–1880, publisher: SAGE Publications Inc.
- OLKEN, B. A. and SINGHAL, M. (2011). Informal Taxation. *American Economic Journal: Applied Economics*, **3** (4), 1–28.
- PETERS, K. and RICHARDS, P. (2011). Rebellion and Agrarian Tensions in Sierra Leone. *Journal of Agrarian Change*, **11** (3), 377–395, \_eprint: <https://onlinelibrary.wiley.com/doi/pdf/10.1111/j.1471-0366.2011.00316.x>.
- TRACHTMAN, C., PERMANA, Y. H. and SAHADEWO, G. A. (2022). How much do our neighbors really know? The limits of community-based targeting. p. 83.
- VAN DEN BOOGAARD, V., PRICHARD, W. and JIBAO, S. (2019). Informal taxation in Sierra Leone: Magnitudes, perceptions and implications. *African Affairs*, **118** (471), 259–284.
- and SANTORO, F. (2023). Co-financing community-driven development through informal taxation: Evidence from south-central Somalia. *Governance*, **36** (2), 499–531, \_eprint: <https://onlinelibrary.wiley.com/doi/pdf/10.1111/gove.12678>.
- VAN DER WINDT, P., HUMPHREYS, M., MEDINA, L., TIMMONS, J. F. and VOORS, M. (2019). Citizen Attitudes Toward Traditional and State Authorities: Substitutes or Complements? *Comparative Political Studies*, **52** (12), 1810–1840, publisher: SAGE Publications Inc.

WALKER, M. (2018). Informal Taxation Responses to Cash Transfers: Experimental Evidence from Kenya. *Working Paper*, p. 75.