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

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Abstract

This paper investigates the relative merit of traditional leaders in promoting cooperative behavior when informally taxing citizens' labor in low-income states and whether this comes at the expense of relatively poor households. I designed a field experiment to measure whether citizens distort their behavior when facing informal taxation schemes by engaging 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. Results show that chiefs' informal taxes distort individual behavior slightly less than the alternative mechanisms, revealing that chiefs can indeed promote pro-social behavior but not in a magnitude suggesting large efficiency gains. However, chief selection leads to less overall participant effort during the experiment, suggesting that chiefs' involvement does alter people's incentives during income-generating tasks. When focusing on differences by wealth, I also find chiefs do generate distortions among this group, which are more likely to accept lower wages to avoid being informally taxed by chiefs. On the other hand, progressive selection is slightly more distortionary than chief selection in terms of people avoiding informal taxes through costly actions, shifting costs toward people with intermediate levels of wealth. This result is driven by differences in self-perceptions of wealth and how surveys proxy for material well-being. (JEL C93, D91, H21, H23, H41, I32, O12, O17)

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I Introduction

Development policy in low-capacity states across sub-Saharan Africa often relies on traditional or customary leaders to operate. These leaders, often called chiefs, play essential roles in policy domains such as targeting subsidies, collecting taxes, or managing local infrastructure projects (Basurto *et al.*, 2020; Balan *et al.*, 2022; Casey *et al.*, 2023). Chiefs appear particularly important when development initiatives need community support given claims suggesting they can efficiently mobilize people and resources towards community-oriented goals (Baldwin and Raffler, 2019; van den Boogaard and Santoro, 2023). These claims are built on the fact that, in areas beyond central states' reach, chiefs are often in charge of organizing collective action for local public goods (Honig, 2022). As a result, customary leaders appear to be critical in promoting cooperative behavior needed to fund local public goods.

However, previous work also points out that involving chiefs in public goods provision might lead to regressive informal taxation schemes. Under these redistribution schemes, very poor households devote significant 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 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, these concerns are amplified by work suggesting chiefs are mainly local elites with no electoral pressure and thus little incentive to redistribute or promote broad community development (Acemoglu *et al.*, 2014b). Put together, this suggests a tradeoff for development policy. Involving chiefs in development programs promotes cooperative behavior needed 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 Sierra Leone that offered simple one-day jobs in rural communities and created a public good problem around this setup framed as a development program. The experiment required some participants to be selected as "community workers." This meant that instead of working for themselves, selected participants would work to help fund a real local public good —their local health clinic. This experimental feature resembles real development programs that often rely on local labor for implementation and allow informal taxation to occur (Bulte *et al.*, 2018; van den Boogaard *et al.*, 2019). Then, I compare the status quo approach of delegating the selection of community workers to local chiefs relative to two benchmarks: selecting community workers by random lotteries or using a progressive scheme based on wealth measures from household surveys. The former guarantees that selection is transparent and not targeted towards any particular type of citizen. The latter tests a simple policy instrument commonly used to target subsidies or calibrate low-income countries' tax rates. I make this comparison by randomizing across communities the selection method used to pick who should work to fund

the public good.

To assess if delegating informal taxation to chiefs 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 to a public good and (ii) how much effort citizens exert both in private income-generating tasks and towards funding a public good. The first outcome reflects both cooperative behavior and is essential to assess if redistribution through informal taxation imposes costs on citizens through distorting individual behavior. If citizens engage in costly actions to avoid being selected to work for a public good, coercion might drive contributions. This intuition stems from simple taxation models where individuals do not internalize the benefits of public goods being funded — for example Agranov and Palfrey (2015). However, citizens can be pro-social and interested in funding local public goods, particularly in low-income rural settings where some public services are severely underfunded. This fact can lead to contributions being voluntary as citizens internalize the benefits of public goods. Distinguishing between these two perspectives is necessary to study the incidence of informal taxation schemes, which is the primary goal of this study. The approach implemented in this study, which focuses on costly actions to avoid informal taxation, stems from the literature measuring the distortionary effects of redistributive pressure from kin or peers in low-income settings (Jakiela and Ozier, 2016; Boltz *et al.*, 2019; Carranza *et al.*, 2022).

To study the incidence of informal taxation, I implemented the experiment and its associated jobs program over two days per community. Upon recruitment, the program advertised that some participants were going to be selected as community workers whose labor would fund the local health clinic, but they could only selected among people working on the second day of the program. This feature implies that participants who wanted to avoid this informal tax on their labor should prefer to work on the first day of the program in order to keep their earnings. As a result, I can measure whether participants bear private costs to shift their work toward the first day of the program[1]. In the experiment, this takes the form of participants being willing to accept a lower compensation to work during the first day of the program. I use this behavior as the primary outcome of my experiment as it captures privately and socially costly behavior that helps participants avoid an informal tax on their labor.

I first analyze the random selection arm, which serves as a baseline for how participants behave in this experiment. I leverage within-community variation to cleanly estimate the elasticity of costly actions to avoid contributions to changes in the likelihood of being selected to work for the public good during the program. In this arm, I randomly assigned some participants never to be selected as community workers and assigned others to different lotteries to decide who

[1]This behavior resembles the 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. In this study, participants can use reveal impatience to avoid an informal tax on labor.

was selected as a community worker. Participants in this selection method react as expected to changes in the likelihood of selection, providing confidence in this experiment method to study the incidence of informal taxation. I find that the elasticity of choosing earlier work for lower pay to changes in the likelihood of selection is similar in magnitude to the elasticity of choosing to work earlier to changes in the wage offered earlier.

Using random selection as a benchmark, I then leverage the experimental variation across communities to investigate the effects of delegating selection to chiefs or using a progressive selection method to select community workers. Estimates provide evidence consistent with chiefs being relatively effective at promoting cooperative behavior as participants assigned to chief selection distort their behavior less than participants facing other selection methods. This is measured by participants being less likely to avoid informal taxes in the experiment. Nonetheless, differences across selection methods are small in magnitude, suggesting that efficiency gains from choosing the best selection method are not substantial. On top of this effect, I also find participants under chief selection put in less effort during the experimental work task. This effect is present both for regular and community workers, suggesting that chiefs also change the incentives for people working for themselves. This result implies that informal taxation by chiefs can distort behavior across multiple margins, and even if it induces more pro-social behavior, it can also affect incentives for income generation outside of public goods.

Finally, I conduct a pre-specified heterogeneity analysis based on differences in household wealth across participants. This analysis allows me to check whether involving chiefs in selecting 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. Results show evidence consistent with regressive informal taxation by chiefs. In particular, although the average participant acts more pro-socially when selection is delegated to chiefs relative to random selection, participants at the bottom of the wealth distribution under selection chiefs significantly distort their behavior by accepting more wage cuts to avoid the public good. For example, participants in the bottom 10% of material wealth increase their likelihood of accepting a lower wage to work earlier by 40% relative to random selection. This effect reveals a large behavioral response and shows the prevalence of regressive informal taxation in this context, where coercion plays a more important role in how customary or traditional leaders informally tax the poorest households.

Finally, I conduct a pre-specified heterogeneity analysis based on differences in household wealth across participants. This analysis allows me to check whether involving chiefs in selecting community workers leads to a higher prevalence of costly actions to avoid the public good among the poorest households. I also study if a simple progressive mechanism can counteract this pattern. Results show evidence consistent with regressive informal taxation by chiefs, using both a wealth index based on household surveys and community rankings about living

conditions. In particular, people in the bottom tercile of both wealth proxies are more likely than people in the middle terciles to react to chief selection by choosing to work earlier for a lower wage. These behavioral responses reveal how chiefs induce regressive informal taxation schemes where some of the poorest households in this context bear important private costs to avoid funding public goods. More surprisingly, progressive selection did not correct this regressive pattern and shifted distortions, particularly toward people in the middle tercile of wealth. This result is partially driven by differences in how households perceive their relative living conditions versus survey approaches to proxy for rural material wealth. Therefore, this study also points towards the perils of implementing redistributive policies in contexts where wealth is hard to measure and where policymakers disagree with citizens on the standards used to redistribute resources.

I.A Related work

The first line of work I contribute to focuses on how chiefs affect development in sub-Saharan Africa (Herbst, 2000; Baldwin, 2015; Bulte *et al.*, 2018). Scholars have studied how lack of electoral accountability affects how chiefs operate (Acemoglu *et al.*, 2014b; Baldwin, 2013; Baldwin and Holzinger, 2019). This effort has led 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 in Sierra Leone are regressive when coordinating funding for local public goods. This result supports theories where chiefs represent the interests of local elites and highlights the importance of research about 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 , targeting subsidies, managing local projects , or land allocation in rural areas. 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 selection process alters citizens incentives to contribute to local public goods.

Multiple studies have focused on specific roles chiefs can play in development policy. This line of work 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 mainly contribute to the work assessing how traditional leaders solve local public goods problems and promote cooperation —work not exclusively focused on chiefs but generally on customary leaders in different contexts (Diaz-Cayeros *et al.*, 2014; Alatas *et al.*, 2019). This literature also includes extensive work on informal taxation and how traditional leaders fund local public goods (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 experiment to study how chiefs promote cooperation. I add to this work by implementing a field experiment framed as a development program where chiefs make consequential decisions. I then carefully measure how this feature 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. This includes work on targeting instruments relying on community leaders , peer information , or poverty indices based on household surveys . I contribute to this strand of work by adding evidence on how citizens respond to different redistribution schemes involving traditional leaders, random mechanisms, and progressive schemes. This piece of evidence is key to expand this literature by understanding how redistribution mechanisms are perceived by citizens, the incentives they generates, and thus their social and political feasibility.

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 strand of literature 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 work by adding evidence on how citizens respond to different redistribution schemes involving traditional leaders, random mechanisms, and progressive schemes. This evidence is critical to expanding this literature and understanding how citizens perceive redistribution mechanisms, the incentives they generate, and thus, their social and political feasibility.

II Setting

Sierra Leone is a relatively small country in West Africa and one of the world's poorest countries, ranking 181 out of 191 in terms of the Human Development Index reported by the United Nations in 2022. On top of this, the central state cannot provide quality public services due to a lack of state capacity. As a result, it often ranks in the bottom 10th percentile of Government Effectiveness according to the World Bank. These problems are more prevalent in rural areas,

where food insecurity is prevalent and economic opportunities outside of subsistence agriculture are rare. It is in this rural context where traditional or customary institutions are the most influential.

Due to the scarce state presence in rural Sierra Leone, customary institutions and their leaders become highly relevant to people's livelihoods. They influence multiple dimensions of people's lives, from solving local disputes to controlling land access (Bulte *et al.*, 2018). Not surprisingly, this leads to citizens overwhelmingly having higher contact with their customary leaders, called chiefs, and placing more trust in them relative to democratically elected leaders[2]. This high social embeddedness is a key factor that positions chiefs to coordinate local public good provision in this context.

In practice, Sierra Leone's chiefs are local elites with important political roles in the areas they control. This political power is often legitimized through arguments referencing tradition and culture rather than ethnic allegiances (Honig, 2022). As part of these traditions, chiefs can only be selected from members of specific ruling families that vary by chiefdom and take on this role for life (Acemoglu *et al.*, 2014a; Bulte *et al.*, 2018). All these characteristics make them institutionally very different from government officials and democratically elected leaders. Nonetheless, the Chieftaincy in Sierra Leone is not at all separate from the state and, in many ways, is a formal institution. The national constitution recognizes chiefs as key actors in rural governance, and the Chieftaincy Act of 2009 codifies in law the exact roles customary leaders play within the country. Moreover, chiefs even have special non-partisan seats in the national parliament to oversee legislation and represent their districts. All of this is evidence of how the state of Sierra Leone has relied on the Chieftaincy to exert control of its territory, leveraging complementarities in rural governance more than acting like substitutes (Baldwin, 2015; Henn, 2023).

The precise policy domains controlled by traditional or customary leaders across sub-Saharan Africa are land management, conflict resolution, and public good provision (Baldwin, 2015; Honig, 2022; Casey *et al.*, 2023). In some countries, like Sierra Leone, chiefs can collect certain taxes and partially share their revenue with the government (Acemoglu *et al.*, 2014a). In Sierra Leone, all these tasks that fall into the Chieftaincy are distributed along an internal hierarchy. This hierarchy has Paramount Chiefs on top, then section chiefs, and ends in village chiefs or headmans. Notably, all the procedures conducted for this study were accomplished by collaborating with these lower-level village chiefs, as they are the face of the Chieftaincy for most citizens and coordinate local public good provision. In my sample, these chiefs are, on average, 56 years old, and 19% of them completed primary schooling. This pattern of relatively old and

[2]The Afrobarometer 2021 data provides evidence for the role of traditional leaders in local governance. It reveals that 48% of respondents have reached out to their traditional leaders multiple times about local issues, compared to only 19.5% for Local Councillors, the lowest level elected official in the country. Similarly, 32% of citizens express significant trust in their traditional leader, while only 13.3% do so for their Local Councillor.

uneducated leaders is in line with previous work studying how these traits of chiefs limit their ability to act as local project managers (Casey *et al.*, 2023).

Chiefs finance local public goods by relying on what the literature has called informal taxes (Olken and Singhal, 2011). In Sierra Leone, these cash, goods, or labor contributions funding community projects are highly prevalent, and chiefs often coordinate their collection. According to van den Boogaard *et al.* (2019), 64% of all taxes paid in a year by an average household were collected by chiefs. Within the sample of participants surveyed for this study, 81% reported having made any informal contribution to local chiefs within the last six months, where 56% made monetary contributions, 73% made labor contributions, and 20% contributed in-kind. Overall, this reveals the prevalence of informal taxes studied in this paper.

III Experimental design

I study informal taxation in rural Sierra Leone by implementing a simple development program with an associated public good problem. The program offers one-day jobs to people in rural Sierra Leone but with the condition that, in each community, some people work to earn money for themselves while others work to fund a local public good. I randomize communities into different methods to select who works for the public good. The program was implemented in 128 communities across six districts of Sierra Leone. I first explain the program's details and how it created a public good problem within the communities visited by informally taxing participants' labor. Then, I go over the different selection methods randomized across communities. I then explain the different outcomes measured by this experiment and conclude with details about my experimental sample.

III.A The jobs program

The program aimed to provide one-day jobs to people in each community visited, thus creating an activity where participants were individually rewarded for their effort. The job was to classify Sierra Leonean names by gender and ethnicity. This task was framed as useful for a local NGO that decided to outsource it at scale in rural communities. Importantly, this implied that people needed basic reading skills to participate. Thus, the experimental sample comprises mostly young and educated rural citizens. People who took up this job offer spent around one hour earning a maximum of 2 USD, twice the average daily income reported by participants.

The public good problem associated with this program entailed some participants in each community having to work for their community instead of for themselves. In what follows, I refer to them as "community workers." Participants selected as community workers had to complete

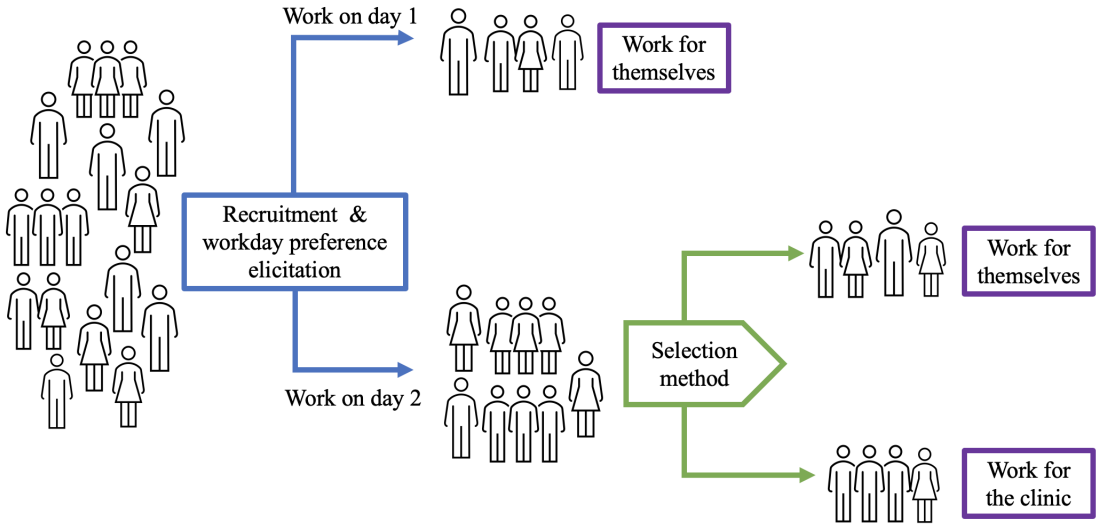
the job task as all others, but the program automatically donated the majority (90%) of their earnings to a real local public good. People who were not selected kept all of their experimental income. As a result, community workers did not profit directly from their work effort and, therefore, should value the program less unless they internalize the benefits of the public good. For all communities visited, the public good funded by the community workers was the closest clinic or health center, and all participants knew about this when making decisions in the experiment.

It is important to note that in this program, citizens did not act as intermediaries. Instead, the program directly took the earnings of community workers and donated them to their local clinic. This setup ensured that the informal labor tax, a key aspect of this experimental setting, was fully enforced. The decision to implement perfect enforcement allowed the focus to shift to the inherent redistribution tension of informal taxation schemes, abstracting away from the potential advantage that chiefs might have on enforcing tax collections (Balan *et al.*, 2022).

In order to capture each participant's willingness to be selected as a community worker, I implemented the jobs program over two days in each community. This design allowed me to run the program in two stages and inform participants that community worker selection would only occur on the program's second day. The two stages of this jobs program are explained graphically in Figure 1. This key feature of the experimental design implies that participants who want to avoid being community workers should prefer to work on the first day of the program as this guarantees they get to keep their earnings. I leverage this feature to elicit participants' preferences over which day to work, in particular by allowing participants to accept lower wages to work earlier. With this strategy, I can measure which participants want to avoid the public good and are willing to engage in costly actions to do so. Participants' willingness to accept low-paying job offers to avoid selection as community workers is the primary outcome of this experiment. More information about the outcomes analyzed is presented in subsection III.D.

During the program, participants answer two surveys, providing valuable information in the experimental analysis. Upon recruitment, I collected participants' preferences over which day to work and an extensive battery of demographic questions. Importantly, this survey allows me to measure multiple proxies for the relative household wealth of all participants and other variables that can meditate how participants react to the experiment. I surveyed participants again when they completed the job task. This second survey measures how much effort participants exerted in the job task for community and regular workers. This survey also contains additional exit questions measuring their satisfaction with the program's operation in their community.

Figure 1: Two-stage experimental design



III.B Sample

Data collection for this experiment was conducted in six districts across Sierra Leone, 3 in the northern region of the country and 3 in the south. Within districts, I sampled 128 communities among rural communities with low population density and a health center nearby. The first requirement was set to study remote locations far from the state, where chiefs tend to be more influential. The second was set to ease the experimental protocol as public good contributions were donated to local clinics. Figure A.1 in the Appendix shows the locations where the experiment took place.

Table 1 provides a more detailed description of the experimental sample. This data shows the experiment was conducted on communities that, on average, had 57 households and were one hour and a half away by motorbike from their chiefdom headquarters town. These are relatively small communities far from urban centers. Participants tend to be young and educated by design, with the average age being 25 years old and nine completed years of education.

Two other sets of key variables for this paper aim to proxy for rural wealth and how close each participant is to their local chief. It is important to note that participants have significantly low incomes, are below any monetary poverty line, and work primarily in agriculture. Thus, I estimate household wealth through a standardized set of questions measuring how many assets or animals households own, the materials used to construct their dwelling, whether they own any land, and their ability to cope with shocks. I validated this measure through multiple pilots in this context. Within the experimental sample, this index significantly predicts food and health insecurity[3].

[3]For example, a one standard deviation increase in this wealth index is associated with a 17% decrease in the

Table 1: Descriptive Statistics and Balance Table

Variables	N	Outcome Mean				F Test
		Full Sample	Chief	Progressive	Random	P value
Panel A: Community Characteristics						
No. of Households	128	57.344	56.070	49.100	65.889	0.261
Distance to HQ town (Min)	128	102.195	105.233	108.725	93.489	0.563
Chief's Age	128	56.055	57.465	52.525	57.844	0.084
Educated Chief	128	0.188	0.116	0.200	0.244	0.299
Panel B: Household Characteristics						
Age	1,985	25.620	25.592	25.237	25.976	0.335
Male	1,985	0.619	0.591	0.661	0.608	0.015
Years in Community	1,985	14.318	13.338	14.885	14.749	0.024
Household Size	1,985	7.623	7.496	7.471	7.873	0.054
Years of Education	1,985	10.031	10.038	9.948	10.097	0.831
Job Test (Min)	1,985	2.560	2.551	2.562	2.566	0.917
Works Outside Home	1,985	0.340	0.358	0.313	0.347	0.842
Subsistence Farming	1,985	0.343	0.332	0.352	0.344	0.961
Weekly Income (USD)	1,584	4.684	4.931	4.721	4.407	0.813
Wealth Index	1,985	0.000	0.092	-0.100	-0.000	0.167
Clinic Visits (per year)	1,985	14.226	14.460	14.285	13.956	0.841
Panel C: Relationship to Chiefs						
Seeks Advice of Chief	1,985	0.702	0.702	0.722	0.685	0.970
Close to Chief (Index)	1,985	0.000	0.006	-0.003	-0.003	0.817
Freq. of Informal Tax (6 months)	1,985	1.230	1.163	1.344	1.194	0.635

Notes: Community Characteristics were obtained from surveying the village chief of each community. Educated chief measures if they completed primary. The remaining variables are measured for each participant through individual surveys. Job Test measures the time participants spend completing a test of the job task used in the experiment and proxies productivity. Works Outside Home and Subsistence Farming are based on the main activity each respondent engaged a week before the survey. Weekly income is only measured for people reporting positive income. The Wealth Index combines multiple questions about asset ownership, dwelling materials, ability to cope with shocks, food security, and health security. This index is standardized to have mean zero. Seeks advice of chief if a dummy for whether a respondent asks for advice from their local chief once a month or more frequently. The index measuring closeness to the chief standardizes and averages multiple variables proxying for how close each participant is to their chief, using variables like distance to the chief's house, how often they seek advice from them, whether they support land titling, and if they are related to the chief. The frequency of informal taxation measures the number of times a respondent has contributed money, labor, or goods to the chief for a community activity or project in a six-month window. The F Test jointly tests balance on treatment assignment using a regression with district fixed-effects and standard errors clustered at the community level.

Regarding participants' relationship to their local chiefs, I also created an index that standardizes and averages many variables proxying for being socially proximate to the village chief. This list includes variables such as distance from participants' dwelling to the chief's house, how often they seek advice from their chief, whether they believe the government should not

likelihood of participants worrying about not having enough food to eat over the last month and a 60% decrease in the likelihood of a participant reporting not eating for a day during the last month. Also, a one standard deviation increase in this wealth index is associated with a 50% decrease in the likelihood that a participant reports someone in their household had a health emergency that could not be treated during the last month and a 20% decrease in the likelihood that someone in their household had to skip school or work due to health problems. These estimates come from simple regressions controlling for regional differences and are robust to controlling for other personal characteristics.

title land, and family connections to the chief. For reference, 70% of participants regularly seek advice from their local chief. I also collected data on past informal tax payments for a broad range of project types (e.g., water, roads, education, security, or other infrastructure). This approach reveals that, on average, participants have been asked to pay an informal 1.2 times in the last six months —including labor, money, and in-kind contributions.

III.C Selection methods

The treatment arms in this experiment are defined by the selection method used to select community workers in each community. Each selection method was extensively explained to participants during the recruitment survey. All selection methods were implemented before the program's second day in each community. This results in incentives to work earlier in the program for participants who want to avoid being selected as community workers. The three selection methods randomized in this experiment are:

1) Random Selection: This treatment arm, which serves as a benchmark for the experiment, uses a simple and transparent lottery to decide whether each participant working on the second day is selected to work for the clinic or not. Within communities assigned to this method, participants were cross-randomized into three different lotteries: 0% chance of selection, 25% chance of selection, and 50% chance of selection. This randomization creates individual-level variation to estimate how participants react to different likelihoods of being selected in an environment without any discretion or bias in the selection process.

2) Chiefs Selects: In communities assigned to this selection method, field teams asked village chiefs at the end of the first day of work to select who they believe should be a community worker and help fund the local clinic. This involved explaining to the chief the nature of the program, particularly how some people were going to work and keep their earnings while others were working to help the community. Chiefs selected community workers by choosing half of the people from the list of all participants in the program. However, as some participants would select themselves to work earlier, community workers in these communities had to be selected by the chief and be available to work on the second day. I interpret this method as the status quo approach used in rural communities to decide who bears the costs of providing local public goods via informal labor taxes (Olken and Singhal, 2011).

3) Progressive Selection: In communities assigned to this arm, the field team explained to participants that the program wanted to make sure people in relatively better conditions were selected as community workers. The program then used survey questions about participants' living conditions during recruitment to select relatively wealthier households to work for the local public good. In practice, I created an index of household wealth tailored to rural areas in this context. This procedure was executed to mimic a simple implementation of Proxy-Means

Tests (PMT) targeting (Brown *et al.*, 2018). Field teams accessed this index for each participant and selected half of the workers available on the second day based on this wealth index. This treatment arm allows me to measure how participants react to progressive redistribution schemes based on simple surveys as an alternative to usual informal taxation by traditional leaders.

The randomization used to assign these three selection methods was stratified at the district level for the six districts where the program was implemented. Of the 128 communities visited, 45 were assigned to random selection, 43 to selection by chiefs, and 40 to progressive selection. In each community, roughly 15 participants were enrolled in the study. Table 1 also shows how observable characteristics are balanced across treatment arms.

III.D Outcomes

The two-stage design of the experiment creates a natural separation for the outcomes analyzed. First, upon recruitment, participants decide whether they prefer to work on the first or the second day of the program. This decision involves a series of choices for different scenarios, which I call first-stage outcomes. Afterward, during the program's second day in each community, I measure participants' effort during the work task. This effort choice can either help participants earn money for themselves or be directed to the public good (their local clinic), depending on whether they were selected as community workers. Below, I present more details about each type of outcome.

(i) First stage outcomes:

Eliciting participants' preferences over which day to work allows me to capture whether people engage in costly actions to avoid contributing to a public good. To measure this, I use a Multiple Price List (MPL) to elicit how big of a wage cut participants are willing to accept in order to work on the first day[4]. These choices are made immediately after recruitment so participants know how the selection of community workers will be implemented in their community. Participants are aware that the program will try to use their choices to decide if they will work on the first or second day of the program to guarantee incentive compatibility.

The MPL procedure included six choices for each participant, all between working on the second day for a fixed wage or working on the first day for a varying wage offer. First-day wage offers included wage cuts from 12% to 75% relative to the fixed second-day wage. Due to extensive enumerator training, only two percent of the respondents switched more than once between displaying a preference for working on one day versus the other. I drop these respon-

[4]Participants make 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 $X \leq Y$.

dents for all the first-stage outcome analyses. In the analysis section, all regressions include all six choices for all participants and control for the wage offered in each scenario.

I interpret this outcome as participants displaying experimental impatience over which day to work on and being willing to sacrifice part of their income to work earlier. This behavior reveals people being willing to face a private cost, a lower wage, to choose the conditions of work they prefer. Importantly, as these choices are affected by the likelihood of selection as a community worker each participant perceives, this outcome also captures whether participants distort their behavior to avoid an informal tax on their labor. This behavior is a consequence of the two-stage experimental design where community worker selection only happens on the program's second day.

These decisions also capture uncooperative behavior that is inefficient from the community's standpoint. Participants who take wage cuts to work earlier reduce the resources the program brings to the community. Thus, if communities wanted to maximize the joint resources flowing towards people and the public good, they all should choose to work on the second day. Therefore, this outcome also allows me to measure if the randomized selection methods lead to less cooperative behavior by increasing participants' impatience for working earlier. Conversely, a selection method that decreases this outcome reveals an informal tax that distorts behavior less and aligns individual incentives with socially efficient outcomes.

Measuring costly actions to avoid contributions is also important to the literature on informal taxation, which often fails to distinguish voluntary giving from contributions under coercion. This distinction is very relevant when studying concerns over the incidence of informal taxation, which should focus on the latter and avoid measuring the former. I improve upon previous work by focusing on an outcome that does not confound voluntary giving with contributions to a public good under coercion. In the experiment, participants who voluntarily want to help the public good should be less likely to accept wage cuts to work earlier. However, participants who want to avoid contributing should do the opposite. I can then capture behavior changes reflecting distortions to individual incentives due to coercion. If I focused on measuring contributions to a public good, this might overestimate the burden of informal taxation and how it is distributed due to voluntary giving. Moreover, the two-day design also allows participants to mask their decision to avoid the public good for other reasons that might lead them to prefer working on the first day. This feature also improves upon previous experimental work, indirectly measuring participants' willingness to cooperate through a method less susceptible to social desirability bias.

(ii) Second stage outcomes:

After selecting community workers in each community, participants engaged with the job task knowing if they were profiting directly from their effort. In this second stage, participants did the name classification task. This job involved completing eight pages with ten names on

each page. Participants knew they would be paid the amount agreed upon recruitment if they completed all the pages. However, they could stop beforehand and be paid proportionally to completion. In practice, 92% of the participants completed eight pages. In the analysis, I refer to this variable as the effort choice.

As the task involved reading and classifying names into different categories, I measured the quality of effort exerted by counting the number of names each participant classified correctly. Local field staff provided me with correct classifications for all pages, which I use to compute an adjusted measure of effort adjusted for quality. I analyze this outcome as the number of correctly classified pages by each respondent to ease the comparison with the unadjusted variable for effort.

In order to get an additional measure of cooperation, I added extra questions for community workers after they completed the primary job task. I asked them whether they wanted to complete three extra pages to increase the money donated to their local clinic. Participants could either accept or refuse this offer, which I use as another outcome in this second stage to measure how each selection method motivates selected participants to exert additional effort for the public good.

A consequence of the two-stage design is that any decisions made in the second stage, effort on work task for themselves or the public good, is affected by who chooses to work on the second day. This fact implies that selection into the second day can affect how the experimental results are interpreted. To overcome this challenge, I designed the experiment so that a random set of participants were only offered jobs on the second day. This sample allows me to study second-stage outcomes without selection bias from decisions in the first stage.

IV Results

I analyze this experiment in the following order. I begin by describing participants' behavior under the random selection arm as it provides a natural benchmark for engagement with the experiment. In particular, this arm introduced individual-level variation that allows me to characterize how first-stage outcomes vary 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. This analysis includes how participants' willingness to accept wage cuts to work earlier and avoid selection changes with each selection method, as well as induced changes in effort during the work task. Finally, I explore effect heterogeneity of both treatment arms, particularly along participant's household wealth and other observable characteristics.

IV.A Random selection

The random selection treatment arm provides a helpful starting point for analyzing this experiment as it uses simple and transparent lotteries to decide who works for the public good. I leverage this arm to describe how participants behave in the experiment when the informal tax on their labor targets no group of citizens and the selection mechanism is straightforward and executed openly. To take advantage of this arm, I create individual-level variation in the exact lottery used to decide if participants are selected as community workers. Participants are randomly assigned to one of three possible lotteries, facing a likelihood of selection of either 0, 25% or 50%.

I study the random selection treatment arm by using regression 1 below, which focuses on estimating how responsive participants are to changes in this random selection procedure. This regression also includes how individual choices change for different wage offers as part of the multiple prize list procedure. I estimate this model using only participants in the random selection treatment arm and including six observations per participant, one for each choice in the multiple prize list.

For analysis, denote $Prob_{ig}$ as the probability of being selected by a random lottery individual for i in geographic unit g, and W_{jig} as the wage for working on day one offered in option j. θ_1 represents the elasticity of choosing to work one day earlier for a lower wage in response to random increases in the informal tax rate participants face. This elasticity should be positive, indicating that participants are more likely to work earlier in the experiment when they are more likely to be selected as community workers. Conversely, θ_2 captures the elasticity of choosing to work earlier in response to increases in the wage offer for early work. In regression one, I also control for individual characteristics measured upon recruitment (X_{ig})[5], enumerator fixed effects, and geographic unit fixed effects (μ_g). I show results with and without individual controls, as well as results for different geographic unit fixed effects.

$$Y_{jig} = \mu_g + \theta_1 Prob_{ig} + \theta_2 \log(W)_j + X_{ig} + \varepsilon_{jig} \tag{1}$$

Results stemming from the random selection arm are shown in Table2. Estimated coefficients are remarkably stable across multiple specifications and show that, as expected, participants are more likely to choose to work on day one when they are more likely to be selected as community workers. The estimated elasticity in the principal specification, shown in column 3, suggests participants are 16 p.p. more likely to work one day earlier when their likelihood of selections increases from zero to one. This response is similar to how participants react to wage

[5]Control include demeaned variables measuring age, sex, education, occupation, wealth levels by the wealth index, productivity in the job task measured by a test upon recruitment, closeness to the village chief, and how often do participants visit the local clinic.

offers, as participants are 18 p.p. more likely to prefer working earlier when the wage offered for working earlier is doubled. Results from other specifications estimate behavior change of very similar magnitude, providing confidence in how the experimental setup captures behavioral reactions to this instance of informal taxation around a development program.

Table 2: Results from Random Selection

	(1)	(2)	(3)	(4)
VARIABLES	Outcome: Accept Wage Cut to Work Earlier			
Selection Likelihood	0.155**	0.169**	0.168**	0.128*
	(0.079)	(0.074)	(0.072)	(0.073)
Log Early Wage Offer	0.186***	0.186***	0.186***	0.186***
	(0.013)	(0.013)	(0.013)	(0.013)
Observations	4,212	4,212	4,212	4,212
Controls	No	Yes	Yes	Yes
Fixed Effects	No	No	District	Chiefdom
No of Participants	702	702	702	702
Outcome Mean	0.337	0.337	0.337	0.337

Notes: Accept wage cut is a binary variable obtained from a multiple price list protocol where each participant makes multiple decisions about whether to work earlier in the experiment. Selection likelihood is a variable randomized at the individual level within this sample, and it takes values 0, 0.25, or 0.5. Log early wage offer is the natural logarithm of the monetary wage offered to participants for working earlier in the experiment, which varies within the multiple price list for each participant. Controls are measured at the individual level and include age, sex, years living in their community, household size, years of education, productivity in the experimental work task, a dummy for people working mostly on household production of goods and services, a wealth index capturing household material wealth, use of local clinic in the last six months, preferences over donating money to clinic versus school, and index capturing closeness to local chief. Standard errors clustered at the individual level ***p<0.01, **p<0.05, *p<0.1

Overall, these results are consistent with simple predictions that can be tested using the random selection arm and thus provide evidence that this experimental setup can be used to study informal taxation. These results are not the main contribution of this paper, but they serve as validation that the experimental setup is capturing the desired behavior. That is, results align with basic predictions about how participants should behave when trading-off working for their own income and for a public good. I now proceed to the main section of this paper, which takes random selection as a benchmark and studies how participants behave under alternative selection methods.

IV.B Main experimental results

The main results leverage the different methods randomized across communities that implemented an informal tax on labor during the jobs program. These results compare, on aggregate, how selection by chiefs and progressive selection differ from random selection. As outcomes, I first focus on first-stage outcomes capturing if a participant engages in costly actions to avoid

an informal tax on their labor. Afterward, I analyze second-stage outcomes measuring participants' effort in the work task, both for regular workers earning money for themselves and community workers funding the public good. All of these outcomes speak to how efficient these selection methods were in using resources available to communities.

The general specification used to analyze the decision of participants to work on the first or second day of the experiment is shown in Equation 2. This decision is represented by Y_{jicg}, which takes the value of 1 when individual i, part of community c from region g, accepts the offer j to work earlier on the program for a lower wage. This regression has six observations per participant, reflecting each person's multiple choices during the multiple prize list elicitation. It can include individual controls, enumerator fixed effects, and geographic area fixed effects. The preferred specification includes all controls and uses distinct-level fixed effects, as these geographic areas were used as randomization strata for the selection method randomization. Standard errors in this specification are clustered at the community (village) level, as this was the relevant unit for treatment assignment within each district.

Equation 2 compares all selection methods implemented in the experiment. The omitted group in this analysis consists of participants in random selection communities who could never be selected as community workers; thus, they were never informally taxed. The behavior of this group should only be driven by their inter-temporal preferences over which day to work on. This control group is compared to others within the same communities who face a positive likelihood of selection as community workers, identifying β_3. The omitted group is also compared to participants in other communities, either assigned to selection by chiefs or progressive selection, identifying β_1 and β_2, respectively.

$$Y_{jicg} = \mu_g + \beta_1 Chief_{cg} + \beta_2 Progressive_{cg} + \beta_3 Random_{icg} + \theta \log(W)_j + \psi X_{icg} + \varepsilon_{jicg} \qquad (2)$$

This analysis aims to study if participants become more impatient and distort their behavior when facing an informal tax on their labor. Thus, all of the main coefficients of this regression should be positive, as all treatment arms should induce participants to prefer working earlier to avoid selection. However, I can compare coefficients to learn if any method outperforms the others by promoting cooperative behavior in the form of people being less likely to avoid being available to work for the public good. This outcome speaks to efficiency because accepting a wage cut reduces the resources flowing toward the community as part of this program. As selection by chiefs is the status quo selection method in this context and previous work emphasizes the role chiefs play in solving collective action problems, I hypothesize that informal taxes coordinated by chiefs can be relatively efficient such that $\beta_1 < \beta_3$. Conversely, as progressive redistribution bypasses local decision-making and targets relatively wealthy individuals, I expect that $\beta_2 > \beta_3$. This result would reveal an efficiency cost of progressive selection.

Results are shown in Table 3, which shows how they estimated effects are robust to multiple specifications. In general, all estimates are positive and significant. This result confirms that all selection methods induced an informal tax on participants, which drove them to increase their impatience and willingly accept lower wages to avoid selection. However, the regression is underpowered to identify statistical differences between coefficients. Nonetheless, the overall pattern emerging from these estimates confirms the initial hypothesis. Chief selection generates fewer behavior distortions than other selection methods, and progressive selection is generally the most distortionary. As a result, chiefs might play an important role when implementing informal taxes by aligning people's actions with social goals. On the other hand, implementing progressive redistribution schemes can lead to unexpected efficiency costs that reduce resources flowing towards public goods.

Table 3: Distortionary Effects of Selection Methods

	(1)	(2)	(3)	(4)
VARIABLES	Outcome: Accept Wage Cut to Work Earlier			
Chief Selection	0.062	0.060*	0.053	0.061*
	(0.039)	(0.035)	(0.035)	(0.033)
Progressive Selection	0.089**	0.084**	0.078**	0.102***
	(0.042)	(0.037)	(0.037)	(0.035)
Random Selection	0.077**	0.079**	0.081**	0.077*
	(0.039)	(0.040)	(0.040)	(0.040)
Observations	11,772	11,772	11,772	11,772
Controls	No	Yes	Yes	Yes
Fixed Effects	No	No	District	Chiefdom
No of Participants	1962	1962	1962	1962
Outcome Mean	0.337	0.337	0.337	0.337

Notes: Accept wage cut is a binary variable obtained from a multiple price list protocol where each participant makes multiple decisions about whether to work earlier in the experiment. Chief and Progressive selection are binary variables reflecting treatment assignment at the community level. Random selection is a binary variable for individuals randomly assigned to a positive selection likelihood within the random selection communities. The omitted group consists of participants with zero chance of being selected as community workers within the random selection communities. Controls are measured at the individual level and include age, sex, years living in their community, household size, years of education, productivity in the experimental work task, a dummy for people working mostly on household production of goods and services, a wealth index capturing household material wealth, use of local clinic in the last six months, preferences over donating money to clinic versus school, and index capturing closeness to local chief. Standard errors clustered at the community level ***p<0.01, **p<0.05, *p<0.1

For the second stage outcomes, I omitted from the analysis participants in random selection communities with zero chance of selection. I do this to study only how each informal tax scheme affected effort choices. This choice means that the newly omitted group in these regressions are participants in random selection communities with a positive chance of selection. This choice implies that the random selection indicator will not be included when estimating Equation 2 for these outcomes.

Moreover, I also separate this analysis by two categories. First, I compare the effects of each

selection method on the effort exerted by all participants or the effort exerted by community workers. The former analysis includes effects from regular workers who might face different incentives under different selection methods. The latter focuses only on people who knowingly are working to benefit their whole community and are aware of how they were selected. Second, I compare effects for all participants to effects analyzing only a random subset whose preferences on the first stage were not used to decide if they worked on the first or second day. This means that the behavior of the latter group during the work task, which happened during the program's second day for all, is not driven by selection into or out of the public good.

Results showing how selection methods impact the effort margin are shown in Table 4. It is important to highlight that these estimates for Equation 2 only have one observation per participant and only leverage variation across communities. Panel A columns 1 and 2 show that selection by chiefs induced lower effort across the board, particularly when adjusting for the quality of such effort. However, it is worth noting these effects are small in magnitude since the overall effort in communities where selection was delegated to chiefs was between 0.2 and 0.15 standard deviations lower than in communities under random selection. For selection by chiefs, this result implies another type of inefficiency related to participants' incentives to exert effort during the program. Progressive selection also leads to lower effort, but this is statistically indistinguishable from zero when accounting for quality.

Columns 3 to 5 in Panel A of Table 4 show the effects of selection methods on effort directed toward the public good. These effects are also small in magnitude and statistically insignificant because they were estimated on a smaller sample of community workers. However, the estimated coefficients shed light on why these selection methods lead to lower effort relative to random selection. For selection by chiefs, Columns 3 and 4 show that even though community workers put less effort relative to random selection, this effect is smaller than those in Columns 1 and 2. This result implies that the inefficiencies estimated for chiefs partially stem from community workers but can also be substantial for regular workers. In other words, regular workers, who might be taking lower-paying job offers to avoid selection, exert less effort during the program. Thus, even if chiefs generate fewer distortions than the other selection methods during the first stage, the behavior they induce leads to less effort on the work task, which is another type of inefficiency. For progressive selection, these same effects are either smaller in magnitude, or when adjusting for quality, they can even be positive but small effects on effort towards the public good.

Panel B of Table 4 shows another way of confirming that chiefs seem to induce lower effort choices due to the distortions they create in the first stage of the experiment. These estimations are done only on a random sample of participants whose preferences were not used to decide whether they worked on the first or second day of the program. This fact implies that the estimated effects on this sample are not influenced by first-stage decisions about taking a lower

Table 4: Effects on Effort by Selection Methods

	(1)	(2)	(3)	(4)	(5)
	Full Sample		Public Good Workers		
VARIABLES	Effort	Quality Effort	Effort	Quality Effort	Extra Effort
Panel A: Allowing for Selection Into & Out of Public Good					
Chief Selection	-0.101*	-0.134*	-0.089	-0.088	0.079
	(0.058)	(0.072)	(0.129)	(0.169)	(0.060)
Progressive Selection	-0.096*	-0.033	-0.044	0.067	0.030
	(0.057)	(0.071)	(0.120)	(0.164)	(0.060)
Observations	1,678	1,678	601	601	601
Outcome Mean	7.907	6.400	7.821	6.277	0.345
Outcome SD	0.517	0.859	0.731	1.129	0.478
Panel B: Effects Without Selection Into & Out of Public Good					
Chief Selection	-0.051	-0.042	-0.032	0.066	0.122*
	(0.075)	(0.095)	(0.148)	(0.192)	(0.065)
Progressive Selection	-0.065	-0.022	0.013	0.160	0.092
	(0.074)	(0.092)	(0.143)	(0.192)	(0.070)
Observations	894	894	398	398	398
Outcome Mean	7.876	6.363	7.797	6.183	0.339
Outcome SD	0.627	0.976	0.783	1.203	0.477

Notes: All regressions include controls and district-level fixed effects. Effort is measured by number of pages completed in the main work task, which was capped by eight. Quality effort counts the average number of pages each respondent classified correctly. Extra effort is only measured for participants selected as community workers and is a dummy of whether they accept to do three additional pages to increase the public good earnings. Chief and Progressive selection are binary variables reflecting treatment assignment at the community level. The omitted group consists of participants with a positive chance of being selected as community workers within the random selection communities. Controls are measured at the individual level and include age, sex, years living in their community, household size, years of education, productivity in the experimental work task, a dummy for people working mostly on household production of goods and services, a wealth index capturing household material wealth, use of local clinic in the last six months, preferences over donating money to clinic versus school, and index capturing closeness to local chief. Standard errors clustered at the community level ***p<0.01, **p<0.05, *p<0.1

wage offer to avoid selection.

Although not statistically significant, the estimated coefficients show how the estimated effects in Panel A are driven by participants selecting to work earlier for a lower wage. For chiefs, the estimated effects on effort and quality-adjusted effort for this random sample unaffected by selection are at least 50% smaller than those estimated on the whole sample. These results imply that workers selecting to work earlier under chief selection exert less effort during the work task, reflecting how distortions in the first stage can lead to inefficiencies in the second stage of the experiment. Importantly, this pattern also applies to progressive selection, revealing that these distortions extend over multiple selection methods targeting certain citizens in this context.

Finally, Column 6 in Table 4 leverages the fact that community workers were asked if they were willing to do additional work for the public good. Estimated effects for this variable show that selection by chiefs was particularly effective at promoting extra effort. Moreover, this effect is larger for the population in Panel B, who did not select themselves to work for the public good. These results confirm the initial hypothesis that involving chiefs in development programs helps promote prosocial behavior among citizens in rural Sierra Leone. Even though progressive selection estimates effects in the same direction, they are smaller in magnitude. This confirms why bypassing chiefs and implementing alternative redistribution schemes can come at a cost when raising contributions for public goods.

Overall, results confirm the hypothesis that chiefs are critical to aligning individual incentives with social goals and promoting more potential contributions to local public goods (Baldwin, 2015; Honig, 2022). In this experiment, chiefs lead to fewer distortions in terms of costly behavior from citizens to avoid working for the public good. Public good workers are also more likely to work extra to benefit the whole community when chiefs are involved. However, the people who do choose to work earlier under chief selection end up exerting less effort on the work task, which is another type of inefficiency, although unrelated to the public good. This result is more in line with work suggesting chiefs might hurt economic development through the incentives they generate for redistribution (Acemoglu *et al.*, 2014b).

Regarding progressive informal taxation, results indicate it is feasible in this context. Although this mechanism can be more distortionary than selection by chiefs or random selection, the magnitude of this difference is small. Moreover, when analyzing effects on the effort margin, progressive selection does not stand out as a worse mechanism than delegating selection to chiefs. Thus, progressive selection creates less efficiency costs than was initially expected. Progressive taxation can be implemented in this context without substantial negative repercussions, but more studies on this topic are needed.

IV.C Distributional effects

I now focus on the distributional properties of each selection method by comparing selection by chiefs and progressive selection to random selection for participants with different wealth levels. The primary motivation of this analysis is to study if selection by chiefs leads to regressive patterns of informal taxation where the poorest households pay higher private costs to avoid selection. The progressive selection arm allows me to test if a simple policy tool can revert that expected pattern or whether rural households resist this type of redistribution.

To study heterogeneity, I use Equation 2 again, but now include interactions of treatment indicators with variables proxying for wealth. I do this using two distinct variables associated with household wealth: (a) the wealth index used to capture a household's material wealth based on

surveys conducted by the field teams, and (b) community rankings of living conditions asked to all participants about others in their community. The latter proxy for wealth is constructed for each participant by averaging how others in their community ranked them and then standardizing these average ranks. Both of these measures were included in the pre-analysis plan for this study.

Estimating these heterogeneous effects reveals significant heterogeneity in how participants reacted to different selection methods, mainly showing how chief selection induced relatively regressive behavior relative to random selection. This result is shown in Table 5, which shows treatment effects for each selection method interacted with wealth proxies under different specifications. The first two columns use the wealth index, while the last two columns use community ratings for living conditions.

In Columns 1 and 3, I use the continuous and demeaned version of these wealth proxies interacted with the indicators with each selection method. Using the wealth index, both chief and progressive selection appear regressive, as estimated interactions are negative. However, the estimated coefficients are not large enough to be statistically significant. Using community ratings instead shows that chief selection is significantly more regressive than random selection. According to these specifications, a participant one standard deviation below the mean in terms of community perceptions is, on average, 6.4 p.p. more likely to accept a wage cut and work earlier to avoid selection when the chief coordinates informal tax collections relative to random selection.

Columns 2 and 5 divide these wealth proxies into terciles and show heterogenous effects for each tercile, omitting the middle tercile indicator from the regressions. Now, the wealth index does capture how chief selection generates a regressive pattern. Relative to the middle wealth tercile, participants with the lowest wealth levels are almost 14 p.p. more likely to take a wage cut to avoid an informal tax on labor by chiefs. A similar effect is found when using community ratings instead, but the estimations are noisier, so coefficients are not statistically significant.

Overall, results provide evidence of regressive informal taxation by chiefs as suggested by previous work (Olken and Singhal, 2011; van den Boogaard *et al.*, 2019). Importantly, this regressiveness is now quantified regarding distortions to individual behavior. In the experiment, this takes the form of very poor households willing to accept lower-paying jobs to avoid being selected by their chiefs. As these households are very likely to face extreme poverty, sacrificing private resources can have substantial negative implications for people's well-being. This result has important implications for development policy since it suggests that the most vulnerable citizens either contribute more to development projects that act as public goods or incur private costs to avoid informal taxation. Both of these are likely undesirable results if the policy aims to explicitly benefit the poorest households in places like rural Sierra Leone.

Results for progressive taxation indicate that participants in the middle tercile of wealth, par-

ticularly using community ratings, are the ones who bear the costs of progressive redistribution. Compared to random selection, participants in this middle tercile are almost 10 p.p. more likely to accept a lower wage to avoid working for the public good. Interestingly, participants in the upper tercile of wealth based on community ratings react in the opposite direction, displaying more pro-social behavior by being significantly more likely to postpone work and be available for selection. Therefore, progressive informal taxation can be used to obtain resources from the wealthiest citizens in these rural areas at the cost of the rural middle class, who would distort their behavior to avoid redistribution.

In Appendix Table A.1, I present the heterogenous effects of each selection method by wealth levels using the wealth index. These estimates provide additional insights into the consequences of chiefs' patterns of informal taxation, which appear to burden particularly the poorest households in this context. Investigating how participants respond to informal taxation through the effort margin in the experiment, results show that the adverse effects on effort for selection by chiefs are concentrated among the middle tercile of wealth. These participants exert less effort toward the public good and when working for themselves under chief selection, explaining the efficiency costs of chief selection in the effort margin. In contrast, participants in the lowest tercile do not display this behavior under chief selection and do not reduce their effort upon informal taxation by chiefs. This result reduces the negative burden of chief selection on very poor households, as it indicates that even though they are more likely to take lower-paying job offers, they do not reduce their effort.

To conclude this section, additional heterogeneity results are presented in Appendix Table A.2 to complement the above analysis. These estimates focus on participants' decision to accept low-paying job offers when facing redistribution and how different groups react to each selection method during this first stage of the experiment. Regarding chief selection, results show that costly actions to avoid informal taxes are more prevalent among women than men. This effect reveals that women distort their behavior more than men when customary leaders implement redistribution mechanisms. On the other hand, people who are socially more proximate to the local chief behave more pro-socially when chiefs coordinate informal taxation. This result is consistent with chiefs' social embeddedness being a key factor explaining why they are relatively effective at solving collective action problems (Baldwin, 2015; Bulte *et al.*, 2018). Finally, these estimates show that progressive selection did not have the intended effects because it burdened participants who overestimated their wealth. This covariate is constructed by asking participants about their self-perception of wealth within their community and comparing it to how the wealth index ranks participants. This result has important implications for development policy involving redistribution, such as subsidy targeting via proxy-means testing. Results reveal that communities' misperceptions of wealth or even disagreements between how communities and policymakers think of wealth can lead to unexpected behavior that alters the

Table 5: Heterogenous Effects by Wealth

	(1)	(2)	(3)	(4)
	Outcome: Accept Wage Cut to Work Earlier			
VARIABLES	Wealth: Survey Index		Wealth: Community Ratings	
Chief Selection	-0.013	-0.077	-0.014	-0.033
	(0.034)	(0.051)	(0.034)	(0.046)
Progressive Selection	0.009	0.015	0.017	0.097**
	(0.035)	(0.044)	(0.037)	(0.046)
Wealth (continous)	0.005		0.057**	
	(0.022)		(0.022)	
Chief X Wealth	-0.023		-0.078***	
	(0.027)		(0.030)	
Progressive X Wealth	-0.033		-0.042	
	(0.031)		(0.027)	
Low Wealth Tercile		-0.071		0.035
		(0.055)		(0.048)
High Wealth Tercile		-0.022		0.041
		(0.043)		(0.052)
Chief X Low Tercile		0.137**		0.104
		(0.064)		(0.067)
Chief X High Tercile		0.056		-0.051
		(0.060)		(0.061)
Progressive X Low Wealth		0.030		-0.080
		(0.066)		(0.057)
Progressive X High Wealth		-0.054		-0.161***
		(0.062)		(0.055)
Observations	10,068	10,068	9,822	9,822
No Participants	1678	1678	1637	1637
Outcome Mean	0.407	0.407	0.396	0.396

Notes: All regressions control for individual characteristics, enumerator fixed effects, the wage offered for each decision, and district-level fixed effects. Accept wage cut is a binary variable obtained from a multiple price list protocol where each participant makes multiple decisions about whether to work earlier in the experiment. Chief and Progressive selection are binary variables reflecting treatment assignment at the community level. The omitted group consists of participants with a positive chance of being selected as community workers within the random selection communities. The wealth index averages multiple standardized variables proxying material wealth in rural areas, such as household ownership of land and other material assets, ability to cope with shocks and dwelling characteristics. Community ratings use rankings for how each participant is ranked by others in their community in terms of material well-being, which are averaged across multiple respondents and then standardized to have a mean zero. Low and High Wealth are binary variables representing the bottom and top terciles of the wealth variable used; hence, the omitted category is the middle tercile. Controls are measured at the individual level and include age, sex, years living in their community, household size, years of education, productivity in the experimental work task, a dummy for people working mostly on household production of goods and services, use of local clinic in the last six months, preferences over donating money to clinic versus school, and index capturing closeness to local chief. Standard errors clustered at the community level ***p<0.01, **p<0.05, *p<0.1

effects of policy. More research is needed on this topic beyond whether targeting is accomplished appropriately and focusing on how communities react to these targeting decisions.

V Conclusion

In this paper, I design an experiment around a development program that provides jobs to people in rural Sierra Leone and allows for informal taxation to take place. This jobs program allowed some participants to work and earn money for themselves, while others were selected as community workers and exerted effort to fund a real local public good —their closest health clinic. I randomly implement three methods to select community workers: random selection, selection by chiefs, and progressive selection using household surveys to proxy for rural wealth. Importantly, this experiment allowed me to measure whether participants incurred in private costs to avoid being selected as community workers by working earlier in the jobs program but earning less money. I also measure participants' effort during the job offered for regular and community workers funding the public good. These two types of outcomes allow me to study how people select themselves into or out of a public good problem where informal taxation takes place and how they further adjust their behavior during income-generating opportunities.

The proposed setup allows me to study whether customary leaders called chiefs are relatively effective at promoting socially-aligned behavior due to their established role in promoting cooperating and organizing local public good provision (Baldwin and Raffler, 2019; Honig, 2022). I answer this question by comparing how informal taxation coordinated by chiefs influences participants in this experiment to distort their behavior by taking lower-paying jobs to avoid being selected as community workers. I also leverage differences in participants' wealth to study if this potential benefit of including local chiefs burdened the poorest households in this setting (Olken and Singhal, 2011). Moreover, by simultaneously implementing a progressive selection method in this context, I study the implications of using a simple policy tool to bypass local institutions and shift informal taxation pressure towards the relatively wealthy.

I find that chiefs are, in fact, important in funding local public goods by promoting cooperative behavior among citizens. In the experiment, participants distort their behavior relatively less when chiefs coordinate informal taxation. This means that, under selection by chiefs, people are slightly more likely to delay work and be available to be selected as community workers relative to alternative ways of selecting workers to fund a public good. Such behavior meant higher efficiency in communities where chiefs selected public good workers, as citizens accepted fewer wage cuts to avoid selection and thus increased the total pool of resources that communities received. These results speak to the importance of customary leaders for local public good provision and why they take such important roles around development policy in contexts with low state capacity (Balan *et al.*, 2022; Basurto *et al.*, 2020).

Nonetheless, when studying the effort margin, results point toward chiefs creating incentives such that participants exert less effort during the program. This result stems from both regular

workers who took lower-paying jobs to avoid selection and workers funding the public good. As effort also matters for the resources communities end up accessing, this result decreases the relative efficiency of chiefs and aligns better with work suggesting chiefs are local elites with highly extractive practices that negatively impact economic development (Herbst, 2000; Acemoglu *et al.*, 2014b). However, as chiefs also seem to promote more pro-social decisions it is difficult to assess which effect dominates.

I also implement a progressive redistribution scheme to study how informal taxation on development projects changes when explicit redistribution is advertised. I find that implementing progressive taxation in rural areas of low-income countries where wealth is hard to measure can backfire and create undesired incentives. In the experiment, progressive taxation led to slightly more distortionary behavior than the other selection methods, particularly among participants with intermediate levels of wealth. This finding stems from differences in how participants perceive their wealth relative to others and how surveys measure material wealth. Broadly, this speaks to the challenge of implementing redistributive policies in contexts where wealth is hard to measure, where citizens might be relatively uninformed of others' living conditions, or where policy-makers have different standards of wealth and well-being than citizens.

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A Figures

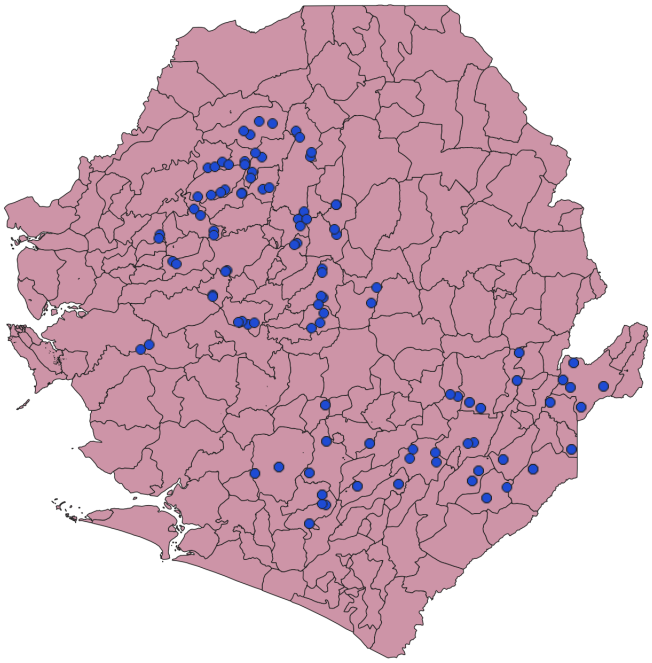

Figure A.1: Experimental Locations

B Tables

Table A.1: Heterogenous Effects on Effort

	(1)	(2)	(3)	(4)	(5)
	Full Sample		Public Good Workers		
VARIABLES	Effort	Quality Effort	Effort	Quality Effort	Extra Effort
Chief Selection	-0.218***	-0.317***	-0.129	-0.205	0.037
	(0.080)	(0.104)	(0.143)	(0.179)	(0.096)
Progressive Selection	-0.126	-0.053	0.049	0.127	0.050
	(0.079)	(0.101)	(0.138)	(0.177)	(0.098)
Low Wealth Tercile	-0.114	-0.206	0.257	0.254	0.026
	(0.087)	(0.131)	(0.201)	(0.290)	(0.122)
High Wealth Tercile	-0.058	-0.035	-0.103	-0.288	-0.056
	(0.047)	(0.084)	(0.190)	(0.259)	(0.101)
Chief X Low Wealth	0.203**	0.266*	-0.214	-0.225	-0.007
	(0.098)	(0.137)	(0.204)	(0.274)	(0.133)
Chief X High Wealth	0.147	0.285*	0.263	0.455	0.103
	(0.119)	(0.149)	(0.269)	(0.348)	(0.111)
Progressive X Low Wealth	0.047	0.021	-0.488*	-0.501	-0.243*
	(0.113)	(0.151)	(0.261)	(0.359)	(0.131)
Progressive X High Wealth	0.037	0.033	0.056	0.127	0.068
	(0.098)	(0.122)	(0.242)	(0.318)	(0.114)
Observations	1,678	1,678	601	601	601
Outcome Mean	7.939	6.481	7.909	6.506	0.364
Outcome SD	0.321	0.748	0.426	0.814	0.492

Notes: All regressions control for individual characteristics, enumerator fixed effects, and district-level fixed effects. Effort is measured by number of pages completed in the main work task, which was capped at eight. Quality effort counts the average number of pages each respondent classified correctly. Extra effort is only measured for participants selected as community workers and is a dummy of whether they accept to do three additional pages to increase the public good earnings. Chief and Progressive selection are binary variables reflecting treatment assignment at the community level. Low and high wealth are binary variables representing the wealth index's bottom and top terciles, an index that averages multiple standardized variables that proxy for material wealth. The omitted group consists of participants with a positive chance of being selected as community workers within the random selection communities and in the middle tercile of the wealth index. Controls are measured at the individual level and include age, sex, years living in their community, household size, years of education, productivity in the experimental work task, a dummy for people working mostly on household production of goods and services, use of local clinic in the last six months, preferences over donating money to clinic versus school, and index capturing closeness to local chief. Standard errors clustered at the community level ***p<0.01, **p<0.05, *p<0.1

Table A.2: Additional Heterogeneity Analysis

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
	Outcome: Accept Wage Cut to Work Earlier					
Chief Selection	-0.055	-0.051	-0.066	0.021	-0.030	-0.022
	(0.040)	(0.049)	(0.040)	(0.039)	(0.036)	(0.034)
Progressive Selection	-0.016	-0.019	-0.047	0.034	0.014	-0.004
	(0.037)	(0.048)	(0.041)	(0.041)	(0.041)	(0.036)
Chief X Female	0.110*					
	(0.058)					
Progressive X Female	0.072					
	(0.054)					
Chief X Young		0.060				
		(0.063)				
Progressive X Young		0.047				
		(0.064)				
Chief X High Clinic Use			0.135***			
			(0.050)			
Progressive X High Clinic Use			0.142**			
			(0.056)			
Chief X Close to Chief				-0.113**		
				(0.051)		
Progressive X Close to Chief				-0.081		
				(0.050)		
Chief X High Contributor					0.077	
					(0.064)	
Progressive X High Contributor					-0.010	
					(0.078)	
Chief X Overestimates Wealth						0.096
						(0.082)
Progressive X Overestimates Wealth						0.157*
						(0.090)
Observations	10,068	10,068	10,068	10,068	10,068	10,068
No Participants	1678	1678	1678	1678	1678	1678
Outcome Mean	0.453	0.470	0.456	0.386	0.423	0.418

Notes: All regressions control for individual characteristics, enumerator fixed effects, the wage offered for each decision, and district-level fixed effects. Accept wage cut is a binary variable obtained from a multiple price list protocol where each participant makes multiple decisions about whether to work earlier in the experiment. Chief and Progressive selection are binary variables reflecting treatment assignment at the community level. The omitted group consists of participants with a positive chance of being selected as community workers within the random selection communities. Young is defined as being below median age within the sample. High clinic use is defined as being above the median frequency of using the services of the local clinic. Close to chief is defined by being above median in the index averaging multiple proxies for being socially proximate to the local chief. High Contributor is defined as being above the median in the frequency of informal tax contributions toward the chief. Overestimates wealth is a dummy for individuals who rank themselves in the top half of wealth for their community but fall in the lower half of the wealth index distribution. Other controls are measured at the individual level and include age, sex, years living in their community, household size, years of education, productivity in the experimental work task, a dummy for people working mostly on household production of goods and services, a wealth index capturing household material wealth, use of local clinic in the last six months, preferences over donating money to clinic versus school, and index capturing closeness to local chief. Standard errors clustered at the community level ***p<0.01, **p<0.05, *p<0.1