

Non-Electoral Accountability: Examining Citizen Sanctions on Traditional Leaders in Sierra Leone*

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Abstract

Do citizens sanction local leaders who are not selected through regular elections, and how? This study explores non-electoral accountability mechanisms for local leaders. We propose a theoretical framework distinguishing between direct and indirect sanctioning channels, and assess the extent to which citizens view these sanctions as legitimate. Through a survey experiment in Sierra Leone, we find that citizens generally prefer indirect sanctions, which are perceived as less costly. Interestingly, most citizens do not view direct sanctions as legitimate. We also show the involvement of political intermediaries increases the perceived legitimacy of sanctions among community members. Furthermore, indirect sanctions correlate with more inclusive decision-making and lower conflict levels. This research suggests that accountability mechanisms operate in diverse ways depending on the institutional context people encounter and underscores its importance in ensuring responsiveness from local leaders.

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Roughly 30% of the global population lives under customary laws and traditional governance structures, highlighting their widespread presence across continents (Baldwin & Holzinger 2019). Examples include village councils in Afghanistan (Baldwin & Holzinger 2019), customary systems in Mexico (Magaloni et al. 2019), and chieftaincies in Sierra Leone (Acemoglu et al. 2014). Although traditional leaders are not subject to regular elections, they often enhance government responsiveness, facilitate collective action, and broker resources (Baldwin 2016; Honig 2017; Murtazashvili & Murtazashvili 2016). This study examines the power held by traditional authorities in rural Sierra Leone, focusing on how communities hold these leaders accountable—a critical aspect for designing inclusive and effective development initiatives.

Corruption and resource leakage challenge development efforts in low- and middle-income countries (Hope 2020), affecting governance from national to local levels (Handoyo et al. 2023). Strengthening community participation and accountability, especially in projects directly impacting end-users, is a common approach (Fox 2015; Winters 2010). However, externally imposed accountability structures, such as electoral systems, often yield limited results in these contexts (Humphreys et al. 2019). Understanding accountability within traditional governance is key to refining these programs and promoting inclusive decision-making for socio-economic development.

Do citizens sanction traditional leaders who are not selected through regular elections, and how? Recent developments in political science literature have underscored the significance of traditional institutions in public goods provision in Africa (Baldwin 2016, 2019), particularly when these institutions exhibit features such as competitive selections (Acemoglu et al. 2014), inclusive decision-making processes (Börzel & Risse 2021; Magaloni et al. 2019), and leaders being embedded in their communities (Baldwin 2016; Baldwin & Holzinger 2019). Less attention has been given to accountability relationships (Baldwin & Holzinger 2019). In the absence of term limits, the role of electoral accountability diminishes. However, other forms of accountability exist.

Drawing on experimental studies in autocratic settings (Chen et al. 2016; Zhong & Zeng 2024), this study develops a novel theoretical framework to explain how and when non-electoral ac-

countability mechanisms emerge. Our framework builds on Chen et al. (2016), who demonstrated that citizens can use both bottom-up and top-down pressures to influence local officials. First, citizens may hold leaders directly accountable by using a range of direct sanctions, such as refusing to work for them, public criticism, or, in some cases, physical threats. This is more likely when local leaders are deeply embedded in their communities and have strong ties to social and communal institutions. Second, in political contexts characterized by strong vertical and clientelistic relationships between leaders, citizens can hold leaders accountable indirectly by escalating grievances to higher authorities with formal roles in disciplining local leaders. This research extends existing scholarship (Carlson & Seim 2020) by testing the predictions of this theoretical framework. It examines whether citizens perceive sanctioning village chiefs as a justified response when leaders neglect the community's interests. We aim to identify the range of sanctions—the *political repertoire*—available to hold chiefs accountable. The study was conducted in Sierra Leone's Southern Province across 77 small communities where town chiefs are deeply embedded. We implemented a survey experiment in April and May 2023, guided by pre-registered hypotheses (Appendix B provides the pre-analysis plan), to test whether villagers state that they would directly or indirectly sanction their town chief if the chief were hypothetically to steal from a community project. The experiment also investigates the role of political intermediaries (chiefs' councilors referred as community elders) as mediators between community members and the chief, in moderating sanctioning preferences. By aggregating responses across treatment groups at the village level, we measure the strength of village-level sanctioning preferences and then examine how these preferences are associated with community institutions and public good provision.

Our study shows that community members are willing to sanction their chiefs, primarily through indirect complaints to higher authorities and, to a lesser extent, through direct actions like public criticism and economic pressure, echoing findings from Zhong & Zeng (2024). Contrary to anecdotal evidence in the anthropological literature, we find that many direct sanctions are not considered legitimate political behavior. This includes actions like refusing to participate in communal labor, withholding taxes, refusing marriage ties with the chief's family, or physically threatening the chief. Notably, the councilors' public criticism broad-

ens the range of sanctions considered legitimate, suggesting their role in coordinating social order. At the village level, we observe a strong inverse relationship between indirect sanctions and inclusive participatory decision-making but a strong positive relationship between indirect sanctions and reduced conflict frequency—an important insight in a context where town chiefs play a key role in maintaining village peace. Direct sanctions show no significant correlation with any political variables, suggesting that in contexts with strong vertical power structures (Acemoglu et al. 2014) and entrenched clientelistic relationships within chiefdoms (Labonte 2012), indirect sanctions may be more effective for disciplining local leaders than direct sanctions.

This study makes four contributions. First, it broadens our theoretical understanding of accountability mechanisms beyond electoral settings, complementing classic selectorate models of accountability (Balasuriya 2023; Mesquita et al. 2005) and advancing discussions on the sources of chiefs' authority (Baldwin & Ricart-Huguet 2022). It shows that findings from autocratic China (Chen et al. 2016; Tsai 2007a) are also applicable in chieftaincy contexts, where socio-economic institutions can both hinder (Mattingly 2016) or enable (Tsai 2007a) citizen pressures on local leaders. Categorizing sanctioning channels as top-down or bottom-up accountability mechanisms offers a valuable analytical framework. Second, our study clarifies how chiefs in Sierra Leone may be held accountable by their communities (Acemoglu et al. 2014; Baldwin & Holzinger 2019), identifying the political tools available to citizens to hold leaders accountable. We show that, in contexts characterized by vertical power structures and strong clientelistic relationships, indirect sanctions are generally seen as more legitimate and less costly. Third, our research contributes to the growing literature on political intermediaries, particularly village advisory councils (Baldwin & Ricart-Huguet 2022). We find that chiefs' councilors play a role in shaping community members' preferences for sanctions; their involvement increases the community's willingness to sanction the chief when councilors themselves impose sanctions. Finally, we add to the literature on heterogeneity in local public goods provision (Cai et al. 2024; Henn 2022). Beyond state-chieftaincy relations and social embeddedness, we find that the degree of preference for indirect sanctions may also incentivize leaders to provide local public goods.

Institutional context

The research takes place in the Southern province of Sierra Leone, specifically in the Bonthe and Moyamba districts, encompassing 12 chiefdoms where data was gathered from 77 villages. It involved four teams of three enumerators between the 1st of April and the 18th of May 2023. In rural Sierra Leone, chiefdoms are fundamental units of local governance, overseen by Paramount Chiefs elected by tribal authorities (see Figure 1). Each chiefdom comprises sections led by Section Chiefs, who hold a higher hierarchical position than town chiefs. Chiefs often act as clients of the state and patrons of their communities, serving as crucial intermediaries between urban centers and rural populations (Becorpi 2018). Their role as resource allocators reinforces patron-client networks, mobilizing voters for national leaders while relying on government resources to maintain their influence (Becorpi 2018; Labonte 2012).

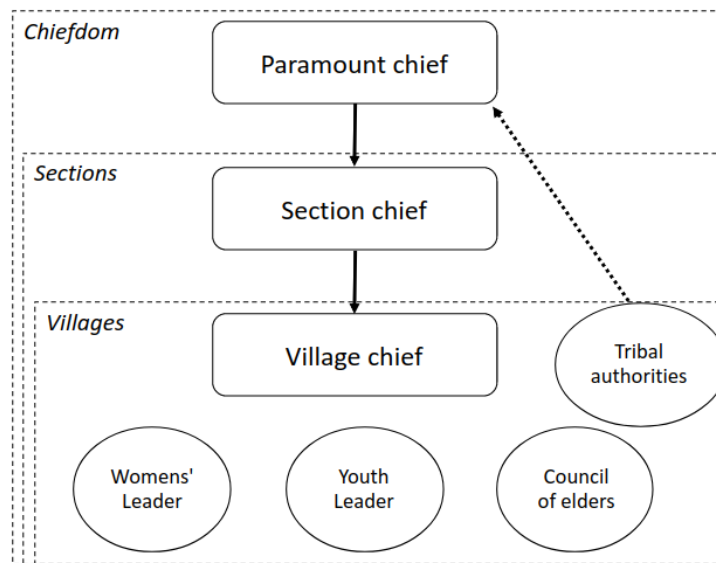


Figure 1: Diagram of the chieftaincy structure in Sierra Leone.

Chiefs derive power from local legitimacy, control over land rights, and judicial authority (Becorpi 2018; Fanthorpe & Maconachie 2010). As shown in Table 1, Afrobarometer data from the Southern Province reveals that 54% of respondents trust traditional leaders, while only 31% see them as competing with elected officials. Traditional leaders exert considerable influence in local governance (88%), primarily in dispute resolution (93%) and land allocation (76%). It also indicates that traditional leaders have some impact on voting behavior (32%).

Chiefs are formally recognized but may compete on certain affair with State Institutions (Henn 2022). Although the Local Government Act of 2004 aimed to decentralize governance, many rural citizens prefer traditional chiefs over elected officials, valuing their commitment to defending customary rights and resolving local disputes effectively (Fanthorpe 2006; Sawyer 2008). Chiefs play a crucial role in the local justice system, often outperforming formal courts in addressing community conflicts, despite challenges such as corruption and nepotism (Ruppel & Leib 2022; Sawyer 2008). The dual legal system allows chiefs to operate alongside formal courts (Kpaka 2024), but their unchecked authority may lead to a concentration of power that reflects historical inequalities (Jackson 2011).

Regarding town chiefs, table 1 Panel B and C displays key insights. While most have the authority to impose fines, only 26% can impose fines for any offense. Notably, 42% can levy fines for refusal of community labor, and a similar percentage can fine youth for defiance. Furthermore, 47% of households report bringing money-related conflicts to the town chief's court, establishing the town chief as the primary authority for conflict resolution.

Accountability mechanisms within chieftaincies are complex. Literature frequently describes chiefs as unaccountable due to indirect elections (Acemoglu et al. 2014) and elite dominance among chief families (Labonte 2012). However, empirical evidence challenges the narrative of the town chief as a despot in Sierra Leone. First, Panel B, using data from Casey et al. (2012), indicates a high heterogeneity of selection mechanisms for town chiefs, with only 47% of towns having an elected chief. Since the end of the civil war, there has been a trend toward elections for town chief (Bulte et al. 2018). Families that own land and pay local taxes are allowed to participate in these elections. However, impoverished families may lack the financial means to pay taxes, leading others to pay on their behalf and thus gain voting privileges (Bulte et al. 2018). This dynamic explains the disparity between the number of landowning families and those eligible to vote. In about half of our sampled villages, the entire population can vote for the town chief; however, in a quarter of the villages, fewer than 58% of families have this voting right, potentially impacting leadership quality. Despite the lack of inclusiveness in the election process, we find no empirical support for the idea that fair, competitive elections are associated with lower corrupted behavior, power, and higher

satisfaction with the town chiefs (Appendix A). Town chiefs typically hold lifelong or long-term positions; in our sample, the most recent town chief elections occurred around 2012, with dates ranging from 1982 to 2023, making electoral accountability less likely. Second, satisfaction with town chiefs is high, with 94% of households expressing contentment. Only 14% feel that town chiefs impose fines excessively, and a mere 13% perceive town chiefs as (excessively) powerful in distributing development goods. Third, 24% of towns have had a previous town chief suspended, suggesting that town chiefs are at least held accountable by their hierarchical superiors (section and paramount chiefs) who possess formal authority to remove them.

In 87% of sampled cases, town chiefs are supported by councilors, formally known as the council of elders. This council comprises heads from major descent groups (Leach 2022). Major descent groups are influential landholding entities that legitimize their status based on their historical arrival in the territory, with firstcomers accorded greater legitimacy. Elders within these groups allocate land usage rights and discuss land-use decisions with the town chief (Leach 2022). Additionally, youth leaders and women leaders play significant roles, coordinating communal activities and advocating for the concerns of their respective groups.

There is anecdotal evidence of various channels that community members could use to sanction town chiefs who do not act in the community's best interests. Refusing to enter into marriage relationships is one example. Richards (2005) argues that chiefdom polygyny enables chiefs and wealthy men to control their communities by using marriage to secure labor, political alliances, and loyalty, disadvantaging poorer rural men who struggle to afford dowries or must commit labor as an alternative (Sawyer 2008). In Mozambique, ceasing contributions to collective labor or taxes has been used as a form of protest in development-related conflicts involving elite capture (Arnall et al. 2013; Bulte et al. 2018). Despite such mentions, it remains unclear whether these actions are systematically mobilized or merely anecdotal.

The Sherbro ethnic group predominates in most villages, with a smaller portion being of Mende ethnicity. The area is characterized by a fishing population with limited arable land for agriculture. Livelihoods are heavily dependent on mangrove forests, as the population smokes fish

for preservation, which requires substantial wood consumption. Poor road quality and the high cost of sea transportation hamper access to markets and cities.

Table 1: Chieftaincy characteristics in the Southern district and sample institutional and town chiefs' political characteristics

	N	mean	median	sd	min	max
Panel A: Attitudes towards chieftaincies (Afrobarometer data, round 8)						
Trust somewhat or a lot traditional leaders (Yes = 1)	240	0.54	-	-	0	1
Traditional leaders in competition with elected leader (Yes = 1)	240	0.31	-	-	0	1
<i>Power: At least some influence in</i>						
Governing your local community (Yes = 1)	240	0.88	-	-	0	1
Allocating land (Yes = 1)	240	0.76	-	-	0	1
Deciding your vote (Yes = 1)	240	0.32	-	-	0	1
Solving disputes (Yes = 1)	240	0.93	-	-	0	1
Panel B: Village level institutional characteristics (Casey et al. 2012)						
Town chief elected (Yes = 1)	80	0.47	-	-	0	1
Town chief can fine any offense (Yes = 1)	80	0.26	-	-	0	1
Fine for refusing supplying community labour (Yes = 1)	80	0.42	-	-	0	1
Fine for youth defiance (Yes = 1)	80	0.42	-	-	0	1
Panel C: Household level attitudes towards village chiefs (Casey et al. 2012)						
Satisfied with the town chief (Yes = 1)	959	0.94	-	-	0	1
Town chief fine people too much (Yes = 1)	959	0.14	-	-	0	1
Town chief powerful in development goods distribution (Yes = 1)	959	0.13	-	-	0	1
<i>Money related conflicts are brought to</i>						
The town chief court (Yes = 1)	959	0.47	-	-	0	1
The village elders (Yes = 1)	959	0.24	-	-	0	1
The local court, the magistrate court or the police (Yes = 1)	959	0.27	-	-	0	1
Panel D: Sample institutional characteristics						
Council of elders (Yes = 1)	77	0.87	-	-	0	1
Youth leader (Yes = 1)	77	1	-	-	0	1
Women leader (Yes = 1)	77	1	-	-	0	1
Previous town chief was suspended (Yes = 1)	77	0.24	-	-	-	-
Number of paramount chief ruling families	77	2.68	3	0.68	2	5
Number of village landowning families	77	4.37	3	3.54	0	17
Number of families having right to vote	77	7.89	6	5.62	1	30
Proportion of families having right to vote	77	0.85	1	0.23	0.12	1
Date of chief election	77	2012	2015	10	1982	2023
Succession period (in months)	77	11.05	8	14.11	0	84

Notes:

Panel A relies on round 8's Afrobarometer data using respondents from the Southern province. We provide summary statistics of the variables 41K, 87, and 90.

Panel B and C uses the data collection undertaken by Casey et al. Casey et al. (2012). Panel B focuses on the focus group discussions undertaken at the village level with village elites. Panel C summarizes variables collected at the household level.

Panel D comes from our own data collection in the sample of selected villages. It presents descriptive statistics of key institutional variables. The leadership position at the village level indicates the proportion of villages that have such a position. For instance, 86.84% of villages in the sample have a council of elders. We also provide the proportion of villages where a chief was suspended. It's important to note that families do not share the same political status in the study area. For each chiefdom (12 in total), we report the number of families eligible to compete for the role of Paramount Chief (Paramount Chief ruling families). At the village level (79 in total), we present the number of families that own land or can vote for the town chief, along with their respective percentages. Additionally, we include information on the date of the town chief election and the duration of the succession period.

Despite the society's stratified structure, there are no large socio-economic disparities between town chiefs and the average citizen. Town chiefs tend to have slightly higher levels of educa-

tion, more children, greater employment rates, larger farms, or a higher number of livestock (see Appendix C). Nevertheless, their material wealth is relatively similar to that of their fellow citizens.

Theory and hypotheses

Due to their colonial history and their vertical structures promoting top-down accountability, initial research characterized chiefs as products of colonialism, acting as authoritarian figures (Mamdani 1996). They emphasized their low popular support (Ribot 2002), a lack of institutional alternatives for the population (Ntsebeza 2004), and a failure to guarantee equal rights, particularly regarding land access and tenure security for women and minorities (Fonjong et al. 2013; Honig 2017). The classic provided explanation is the lack of electoral accountability (Acemoglu et al. 2014; Ribot 2002). Nevertheless, the assertion that traditional leaders act as despots due to their absence of electoral accountability stems from a conceptual framework rooted in democratic theory. Yet, this conceptual framework is not without its challenges. This conceptual stretching (Lührmann et al. 2020; Sartori 1970) give a truncated vision on what basis chiefs are accountable to their community members. Furthermore, Logan (2013) showed that empirical findings do not fully support the “chief-as-despot” view. Using Afrobarometer data from 19 countries, she finds that traditional leaders “enjoy widespread popular legitimacy, and most believe that traditional authorities have an important role to play in local governance (Logan 2013)”.

On the other hand, recent works acknowledge that chiefs can behave as development brokers with a positive impact on their community (Baldwin 2016). In settings with weak formal institutions, public goods provision faces the challenge of ensuring that local leaders initiate these projects without engaging in corruption or embezzlement (Xu & Yao 2015). Such a problem requires holding leaders accountable to prevent moral hazard (Nathan 2019; Xu & Yao 2015).

There is a growing literature interested in understanding how accountability mechanisms function in a variety of political contexts. Accountability requires leaders to adhere to behavioral

standards, with the risk of sanctions for failing to do so (Chen et al. 2016; Grant & Keohane 2005). It serves penalize the illegitimate use of power and requires two key components: access to information and the capacity to impose sanctions (Grant & Keohane 2005). In this paper, we focus on the political repertoire defined as the set of sanctions available to community members to discipline their leaders.

Two broad approaches have been formulated regarding the type of accountability mechanisms. The first account consider the selection mechanism of traditional leaders to be a key characteristic in shaping accountability relationships. The selectorate of national politics (Mesquita et al. 2005) has recently been used to explain whether traditional leaders would respond to a majority of their constituency Balasuriya (2023).

The alternative approach looks at accountability mechanisms beyond selection mechanisms. We build on literature from the Chinese context, extending it to theorize accountability relationships between chiefs and community members. Chen et al. (2016) show that citizens can initiate top-down oversight or apply bottom-up pressure to influence local leaders' responsiveness. To do so they use respectively indirect and direct sanctions.

Indirect sanctions as an activation of top-down accountability mechanisms

Local leaders are scrutinized by higher-level officials and must respond to their demands. In a field experiment in China, Anderson et al. (2019) show that increasing information on policy compliance enhances local government accountability to the central state. Interestingly, citizens can strategically use this link to hold local officials accountable. Chen et al. (2016) found that the threat of top-down oversight by citizens effectively shapes local leaders' behavior.

In Sierra Leone, in case of severe transgressions, the town chief can face temporary suspension or removal from office. The Paramount Chief exercises governance over section chiefs, who, in turn, exercise authority over town chiefs. In instances where conflicts arise between the village chief and the community, the section chief assumes the initial responsibility to mediate and resolve the dispute. Should the dispute persist, the involvement of the Paramount Chief becomes necessary. Consequently, when a chief has committed a theft, citizens could inform these authorities, who can formally sanction the chief (Baldwin 2016).

At the village level, the main traditional structure comprises the town chief and the councilors (the council of elders). Chiefs' decisions are not solely individual but are the product of consultations and discussions with advisers. Pressuring the council of elders can be an effective means for ordinary citizens to pressure the town chief.

Direct sanctions and bottom-up accountability mechanisms

Chiefs deeply embedded in their communities tend to provide more public goods (Baldwin 2016), likely due to aligned interests with their constituents. Cai et al. (2024) found that such embeddedness yields positive social outcomes, but only where political competition among local elites is sufficiently high. Another mechanism linking embeddedness to public good provision is the presence of communal reciprocal institutions, which allow community members to directly hold chiefs accountable.

When a chief is well-embedded, their welfare depends on village-level institutions. Communal reciprocal institutions are key to public good provision, grounded in shared obligations, enforcement, and sanctions against free-riding (Lust & Rakner 2018). Community enforcement mechanisms operate through vertical relations (where elites use punishment to maintain control) and horizontal relations (where social exclusion deters undesirable behavior) (Lust & Rakner 2018). Such institutions are reciprocity-based, a mechanism also recognized in practices like vote-buying in clientelistic systems (Finan & Schechter 2012). Similarly, these social institutions promote cooperation among community members (Harris & Honig 2023).

When social groups overlap with political spheres, they create shared obligations between elites and ordinary citizens (Tsai 2007a; Xu & Yao 2015). Chiefs must honor these obligations to maintain social, political, and economic status within the community. If they fail, community members can directly impose sanctions that impact the chief's social standing and wealth. For example, in rural China, strong community groups rooted in shared values encourage recognition of local officials who effectively deliver public goods (Tsai 2007b).

Anthropological literature documents many ways citizens exert pressure on leaders through diverse strategies (Arnall et al. 2013), which echo resistance tactics known as “weapons of the

weak” (Scott 1985). However, the full repertoire of legitimate political actions available to citizens to discipline local leaders remains underexplored.

Community members can threaten a chief’s access to communal institutions. In agricultural and fishing communities, collective organization is critical. For instance, rotational labor groups for rice harvesting rely on reciprocal assistance (Bulte et al. 2018). When trust erodes, access to these institutions is restricted, so a chief neglecting community interests may lose labor contributions from the group.

Marriage institutions form a second type of sanction. Familial alliances are a way to secure resources and influence, but if a chief’s standing declines, community members may avoid matrimonial alliances with the chief’s family, preserving their reputations and diminishing the chief’s influence.

Finally, non-compliance can serve as policy feedback, pushing for policies better aligned with local realities (Tsai 2015). Publicly blaming the chief, threatening them physically, refusing to pay local taxes, or withdrawing from collective labor can all serve as sanctions that challenge a chief’s authority (Arnall et al. 2013; Bulte et al. 2018).

Expectations

We expect non-electoral sanctions to either pressure chiefs higher in the hierarchy to formally sanction the town chief (activation of top-down accountability channels)¹ or directly sanction the town chief².

*Hypothesis 1: Village members sanction town chiefs if they do not behave in the interest of their community.*³

¹ This includes complaining to the elders, the Section Chief, and the Paramount Chief.

² This includes blaming and threatening the chief, refusing to work for the town chief, refusing to participate in collective labor, not paying local tax, and refusing to marry a chief member of the family.

³ For matter of clarity, we simplified the language used and corrected grammatical mistakes in the pre-registered hypothesis. We also divided the hypothesis in two (hypothesis 1 and 1a). The content and the direction of the hypothesis are not modified.

As suggested by the abundant literature on accountability systems in non-electoral settings, there are many sanctions likely available to community members. We do not have strong theoretical motivations to justify which sanctions are preferred by citizens. However, it is likely that village members have preference for sanctions with lower costs.

Hypothesis 1a: Village members prefer sanctions with a lower costs

Not all community members may have the same capacity in engaging in sanctioning behavior. Community members with higher status in the village might be in a better position in engaging in sanctioning practices (Vedeld 2000). We investigate the role of local elites, the council of elders, in driving sanctioning behavior of other community members. The council's sanctions against the chief might serve as a sufficient deterrent, reducing the need for further community action. Prior research has revealed that the pressure exerted by councilors effectively shapes and influences the behavior of town chiefs (Baldwin et al. 2022). Consequently, when councilors have already taken action, the efficacy of community members' pressure is diminished, leading us to expect their abstention from participating in such actions.

Hypothesis 2: community members will be less willing to sanction the chief actively if the council of elders already blamed the chief for their action. ⁴

If a village chief does not act in the interest of their town, we expect community members to sanction him or her through various channels. The effectiveness of the sanctions is a function of two parameters. First, the more and the more diverse sanctions are employed, the greater the influence and pressure, as the cost of such behavior increases for the town chief. When the diversity of sanctions increases, it is also less likely the chief will be able to escape the sanctions. Second, at the village level, these sanctions are likely to be effective only when a large share of community members share the same *sanctioning preferences* and coordinate their actions.

Villages will vary in their preference for direct or indirect sanctions based on two key institutional features. First, villages more closely connected to higher-level elites in patronage networks may favor indirect sanctions, as these are seen as more feasible and effective. Second,

⁴ For matter of clarity, we simplified the language used and corrected grammatical mistakes in the pre-registered hypothesis. The content and the direction of the hypothesis are not modified.

the presence and strength of communal institutions differ across villages; those with stronger communal institutions are more likely to use direct sanctions. In this paper, a village is characterized by *strong village-level sanctioning preferences* when a high proportion of community members indicate they would sanction their chief through a variety of measures.

What are the consequences of strong direct or indirect sanctioning preferences on leaders' behavior? We study how village-level sanctioning preferences are associated with a key institutional feature: the inclusiveness of participatory decision-making. Participatory decision-making is the village-level political arena where important decisions about land use are made, typically involving the town chief and the elites. When the elites represent the diversity of social groups in the village, there is a high level of inclusive participatory decision-making. However, this political arena can also be captured by the chiefs' families, a significant issue reported in development settings and participatory development projects. If town chiefs are responsive to the level of sanctioning preferences, they might devise more inclusive participatory decision-making.

*Hypothesis 3: There is a positive correlation between village-level sanctioning preferences and levels of inclusion in participatory decision-making.*⁵

In this paper, we also investigate whether sanctioning preferences are linked to the provision of public goods, forest conservation and the level of peace. The latter holds significant importance in our context for two primary reasons. Firstly, town chiefs bear the primary responsibility of upholding social order by addressing local conflicts, enforcing existing laws, and occasionally introducing new regulations. Secondly, the study area, being post-conflict, experienced heightened tensions within and between communities in the 90s. Town chiefs, through promoting peace within villages, can play a crucial role in preventing the resurgence of such conflicts. Robust evidence shows the importance of monitoring and sanctioning institutions to maintain common-pool resources (Kahsay & Bulte 2021; Walker 2009).

⁵ The pre-registered hypotheses used different terminologies: responsive leaders and leadership quality. We prefer to use a more precise term for clarity.

*Hypothesis 4: Villages with stronger sanctioning preferences have higher provision of public goods.*⁶

Research design

We investigate whether and how community members sanction their leaders when deciding against their interests. This investigation faces various methodological challenges. First, the absence of official records and formal documentation about sanctions received by village chiefs complicates the task of tracing and analyzing sanctioning incidents. Second, if the channels for imposing sanctions prove to be effective in disciplining leaders, instances of theft and subsequent sanctions may be relatively infrequent. This scarcity of observable events poses a challenge in evaluating the impact of sanctions on leader behavior. Third, the region's history of civil conflicts, potentially linked to the historical exclusion of local voices from institutions (Peters 2011), suggests a possible reluctance among political actors to openly discuss these sensitive behaviors. This reticence among key stakeholders further complicates data collection efforts. To surmount these methodological impediments, we employ a novel approach that centers around a unique survey experiment designed to measure individual sanctioning preferences and the efficacy of non-electoral sanctions at the village level. Our methodological framework uses experimental survey tools, and real-world behavioral observations recorded in the field. Communities were randomly selected based on their proximity to mangrove resources and their population. Given our research focus on villages where the chief exhibits a high degree of integration within the community, in accordance with the stipulated scope conditions of our theoretical framework, we opted to exclude villages with over 200 households from our analysis. Additionally, we excluded smaller villages with fewer than 20 households because the research involved multiple components (beyond the scope of this paper) necessitating the recruitment of over 20 participants.

In each village, we randomly selected 12 heads of households to conduct the survey experiment. This sampling procedure uses two steps: 1) a listing survey (census) of heads of household, and

⁶ Pre registered hypotheses only include deforestation and do not distinguish between direct and indirect sanctions.

2) a stratified sampling on gender based on that list. Stratification ensures an even gender balance in the survey, which was crucial for examining gender-based variations in preferences for sanctioning chiefs. Moreover, the town chief is specifically chosen to participate in a village-level survey, during which questions about chiefdom characteristics and the developmental status of the village were posed.

Household survey experiment⁷

This study employs a vignette survey experiment using five hypothetical scenarios. Our aim is to identify the types of sanctions considered legitimate by community members and explore how the hypothetical behavior of chiefs' councilors influences their sanctioning preferences.

We devise a scenario aimed at representing typical actions taken by village chiefs that are not in the interest of community members. In the context of development initiatives, numerous projects are implemented by non-governmental organizations (NGOs) in the form of monetary funds or tangible resources such as cookstoves, agricultural inputs, and mini-grids. A substantial body of literature in the field of development has examined the allocation (or misallocation) of these resources by elite figures (Platteau & Abraham 2002). The leakage of development funds or tangible resources for personal benefits is an important issue across sectors such as education (Mbiti 2016; Reinikka & Svensson 2002), health (Azfar & Gurgur 2008; Njong & Ngantcha 2013), or development goods (Carlson & Seim 2020). These leakages are hard to track and prevent. Nevertheless, accountability mechanisms have been identified as mitigating the threat of personal appropriation (Carlson & Seim 2020). Consequently, we constructed a scenario centered around a community project initiated by an NGO (a neutral actor) in which

⁷ In the registered pre-analysis plan, two scenarios were mentioned: a community project and a land deal scenario. For the latter, a crucial observation made during the fieldwork stage was the inconsistency between the scenario presented and the prevailing contextual realities. Specifically, it was determined that the sale of lands, which formed the basis of the scenario, does not align with customary practices (lands can only be leased) and land transactions typically involve consultation with the Paramount Chief. Second, the scenario lacks a pure control, thus limiting the ability to isolate and assess the specific effects of the variables under investigation. As a result, in adherence to the registered pre-analysis plan, the detailed results of the land deal scenario are presented in Appendix F.5. The results align with our expectations and are consistent with those presented in the main text.

the chief appropriates a portion of the project's funds for personal gain. Despite the fact that many NGO projects provide materials rather than direct monetary funds⁸, we chose to simplify the scenario by focusing on the misappropriation of funds for ease of comprehension. The scenario employs neutral language, and we explicitly instructed enumerators not to use the word "steal" in their local languages to prevent any potential bias in respondents' answers.

Each participant faces one treatment condition. Table 2 summarizes the treatment conditions. The control condition represents a situation where the chief managed well the community project. Treatment 1 adds that the chief took a small portion of the money for his use during the project⁹. Treatments 2 and 3 mention the behavior of the council of elders. Finally, treatment 4 is similar to treatment 1, but the money taken is larger. Treatment 1 and Treatment 4 are designed to investigate the identification of the spectrum of politically acceptable actions - the *repertoire* of actions taken by citizens to punish their chiefs. Additionally, they explore whether this spectrum is contingent upon the severity of the theft in question. Treatment 2 and Treatment 3, on the other hand, are geared towards discerning whether citizens' preferences are influenced by the behavior of councilors.

Subjects are randomly assigned to one of the treatment conditions, with a block randomization on gender to ensure an equal share of males and females in each treatment arm. This strategy increases the precision of the estimates and allows for the exploration of heterogeneous effects based on gender. In Appendix D, the table shows the balance test for 13 covariates representing a range of socioeconomic and political variables. Overall, there is an overall great balance with none of the F test being statistically significant at the 5% level. However, there are some important exceptions. Respondents receiving treatment 1 are, on average, less trustful toward the chief and less employed than those in the control condition. Respondents receiving treatment

⁸ In Sierra Leone, development projects focused on mini-grid implementation, improved seed and livestock provision, cash transfers, and payments for ecosystem services, with town chiefs playing a substantial role in allocating these resources to community members.

⁹ Initially, we wanted to quantify the amount taken, but it led to a higher share of respondents not understanding the scenario.

2 are, on average older than those in Treatment 3. Considering this source of imbalances, we add these covariates in additional tests in Appendix I.

To ensure the quality of the measurement, we asked two comprehension questions to assess whether the respondents understood the amount of money taken by the chiefs and the behavior of the elders. The analysis is undertaken only with the respondents who understood the scenarios. Appendix E presents data on the comprehension of the scenarios, including both the number and proportion of respondents who grasped the details. In general, 95% of respondents comprehended the specific amount of money stolen by the chief, and approximately 92% of respondents understood the actions of the elders within the scenario¹⁰.

Table 2: Description of the control and treatment conditions.

Conditions	Details
Control	<i>In a village in Sierra Leone, an NGO developed a project for the development of the community. The town chief played a key role in managing the project at the village level.</i>
Treatment 1	<i>Control + During the project, the town chief took a very small part of the money for his benefit.</i>
Treatment 2	<i>Treatment 1 + The elders in the village went to the chief and sermoned him.</i>
Treatment 3	<i>Treatment 1 + The elders in the village did not sermon the chief.</i>
Treatment 4	<i>Control + During the project, the town chief took half of the money for his benefit.</i>

Notes:

Enumerators read the scenarios to participants in local languages (Sherbro, Mende, or Krio) using tablets.

After reading the scenario, enumerators ask five questions to the respondents¹¹:

- Outcome 1: Rate on a 1-5 scale, how much the respondent agrees with the chief behavior;
- Outcome 2: Do citizens of that village should take any actions in response (dummy);

¹⁰ At the end of the experimental section, after the outcome measures, we asked the two questions testing the respondent's comprehension of the scenario. Robustness check including respondents that did not understand the scenarios are included in Appendix I

¹¹ The main outcome variables used in the study are the outcome 4 and 5. Appendix H shows the results using the outcome 1 and 2.

- Outcome 3: if yes, to specify the type of actions (open ended question)¹²;
- **Outcome 4 (main outcome) - legitimacy of the sanctions:** count of the number of sanctions that are legitimate, and the one they would be able to undertake themselves from the following list of nine sanctions (six direct and three indirect sanctions): 1) blame the chief directly, 2) threaten the chief directly, 3) complain to an elder, 4) complain to the section chief, 5) complain to the Paramount Chief, 6) refuse to participate in collective labor, 7) refuse to work in the chiefs' farm, 8) refused to get married to a member of the chief's family, and 9) refuse to pay local tax. The order of the items is randomized.
- **Outcome 5 (main outcome) - self reported capacity to execute these sanctions:** Count of the number of sanctions that respondents would be able to undertake themselves from the provided list of nine sanctions.

This compilation of sanctions is derived from two primary sources of information: a) a review of existing literature, and b) discussions conducted in the field, involving two separate groups consisting of 10 and 20 respondents, respectively. The literature review identifies instances where citizens took actions to penalize their chief, as well as sources of power held by these chiefs. It's worth noting that the number of articles available for this purpose is limited, which led us to refrain from formalizing the outcomes of this review. The sources of power identified were transformed into potential leverage points held by the citizens. For example, the number of wives was viewed as a symbol of wealth and symbolic power. Consequently, refusing to marry the town chief could have a negative impact on the chief's authority. During our fieldwork, we engaged key informants familiar with the region and asked them to review the list of sanctions, suggesting additions or deletions for actions they considered implausible. The analysis of the open-ended question (outcome 3 above) allowed us to identify any significant actions that might have been omitted from our list. The results of this question, categorized for clarity, are provided in Appendix G. Most of the actions identified were already incorporated

¹² Some experimental studies include an open-question category as a priming exercise; however, this is not the case here. Across all experimental conditions, we asked an open-ended question to half of the sample to robustly assess whether the closed-ended responses in outcomes 4 and 5 accurately capture the range of actions taken by community members.

into our list. However, notable actions that emerged, such as “mobilize citizens in the village” (mentioned by 3% of respondents), “Report to the police” (4% of respondents), “Bring the case to court” (2% of respondents), and “Report to an NGO” (2% of respondents), were not included. Given the proportions of these responses, we believe that their absence is unlikely to substantially impact our results. In addition, we hold five focus groups with elders in the field to identify the perceived relative cost of each of these nine actions (Appendix J)¹³.

We made a deliberate differentiation between the perceived legitimacy of actions (outcome 4) and the self-reported capacity to execute those actions (outcome 5) for three primary reasons. Firstly, due to the substantial influence wielded by chiefs in the southern region of Sierra Leone, it was our supposition that respondents might be reticent to openly declare their intent to impose sanctions on their town chiefs. Consequently, we employed an indirect phrasing. This approach aimed to alleviate the potential for null findings arising from social desirability bias. Secondly, within the field of research on traditional political institutions, there exists a limited comprehension of non-electoral sanctions enacted by rural inhabitants to discipline their town chiefs. The *repertoire* of political actions is only partially documented. Therefore, the legitimacy question serves to appraise the spectrum of politically sanctioned actions, or the *repertoire* of available actions accessible to villagers for penalizing their town chiefs. The ability question (Outcome 5) provides a more refined evaluation of whether the respondent would feel sufficiently empowered, or possess the agency, to undertake these actions.

The summary statistics and the details of the measurement strategy are shown in Appendix C. To test hypotheses 1 and 2, we aggregate the number of legitimate sanctions by type (direct and indirect).

For hypotheses 3 and 4, there is a need to proxy the strength of the sanctioning preferences at the village level. To measure such a concept, we average the individual responses in the survey experiment and, more precisely, the aggregated number of direct and indirect sanctions that community members are able to undertake. We use only the ability question (and not the

¹³ Focus groups were conducted across various chiefdoms and districts within the study area, led by the field coordinator when time and logistics permitted. Due to the homogeneity of responses from the elders, the number of focus groups was kept limited.

legitimate one) as it is closer to real behavior. These measures are used as independent variables. As elucidated in the theoretical framework section, indirect sanctions represent a formal and institutionalized method for penalizing local leaders within the region. As a consequence, the mean count of indirect sanctions selected at the village level can be interpreted as the percentage of residents within that village who possess an awareness of their political entitlements and assert their capacity to exercise these rights. On the other hand, the average number of direct sanctions chosen can be understood as the strength of direct sanctioning preferences at the village level, i.e. the strength of villagers' resistance against leaders' malevolence.

Measuring inclusiveness in participatory decision-making

The study employs an innovative real-behavior measurement strategy to proxy the level of inclusiveness in participatory decision-making related to land use. To assess this aspect, we conducted a land planning activity, which, although not detailed in this paper, aimed to solicit preferences regarding development patterns and deforestation regulations. It was made explicit that the output of the land-planning activity will be shared with a donor that would develop development activities in the coming four years. The town chief was tasked with convening four community leaders to participate in the land planning activity. The proportion of these community leaders sharing family ties with the paramount or the town chief constitutes the measurement of social inclusion. A high share of those community leaders sharing ties with the town chief or the Paramount Chief indicates a low level of inclusive participatory decision-making.

Measuring public good provision

Hypothesis 4 proposes a positive relationship between village-level sanctioning preferences and public good provision. The most important public good provided by the chief is village peace, and we also examine forest conservation. To measure peace, we use the reported frequency of conflicts within the village, as stated by the town chief. For forest conservation, we assess deforestation rates over the past five years within a 6 km radius around the village center, using the tropical forest moisture dataset by Vancutsem et al. Vancutsem et al. (2021).

Empirical strategy

We estimate the effect of providing information about leaders' malevolence on attitudes towards the legitimacy of sanctioning behavior with an average treatment effect estimand. As there is covariate balances between the control and the treatment group, we use the following estimator, for respondent j :

$$GSI_j = \beta_0 + \beta_1 Z_j + \gamma_g + \gamma_v + \epsilon_j \quad (1)$$

With GSI_j , the outcome variable, is the number of direct or indirect sanctions chosen by the respondent j , β_1 is the Average Treatment Effect, and Z_j is a dummy variable indicating whether the participant j belongs to the treatment group 1 or the control group for the hypothesis 1 or the treatment arm 3 or 2 for the hypothesis 2. γ_g and γ_v are gender and village fixed effects accounting for the block randomization strategy¹⁴. We use robust HC2 standard errors (Aronow & Middleton 2013). The robustness checks include the pre-analysis plan strategy (excluding experimental block fixed effects), clustering standard errors at the village level, adding covariates that were not initially balanced, and including participants who did not fully understand the scenario (Appendix I). We also conduct a sensitivity analysis to account for potential experimental demand effects. Results shown in the main text for the hypotheses 1 and 2 are robust to all those alternative strategies.

To test Hypotheses 3 and 4, which posit a positive relationship between village-level sanctioning preferences and both inclusive decision-making and public good provision, we use the following OLS regression:

$$Y_k = \beta_0 + \beta_1 S_{dir} + \beta_2 S_{indir} + \beta_3 X_k + \gamma_g + \epsilon_k \quad (2)$$

With Y_k being either a proxy of inclusion in participatory decision-making (for testing hypothesis 3), or village-level conflict frequency (for testing hypothesis 4) for village k . β_1 and β_2 are the effects of the strength of the direct and indirect sanctioning preferences, and X_k are the

¹⁴ The pre-registered specification does not include experimental block fixed effects. Appendix I presents the pre-registered specification (without experimental block fixed effects) and demonstrates that the results are consistent.

set of control variables - population size, the proximity with the Paramount Chief, the number of ruling family, the year of the leader's selection, the proportion of the population with voting rights, inequality, and wealth, and γ_c chiefdom fixed effects. Appendix F summarizes the deviations from the pre-analysis plan. Furthermore, robustness checks include additional outcome variables (results in appendix N). We use robust standard errors in all empirical strategies.

Results

Table 3 presents the results of the formal statistical tests of the first hypothesis using village and block fixed effects. When comparing treatment 1 (stealing a small part of the community project money) with the control condition, we see a sharp increase in the number of legitimate sanctions of about 3.1 (for a detailed analysis of each sanction, see Figure 2). When disaggregating by the type of sanctions, the effect size is approximately 1.2 for direct sanctions and 1.9 for indirect sanctions. All differences are statistically significant at the 0.1% level. Moreover, we also compare treatment 4 (stealing half of the community project money) with treatment 1 (stealing a very small part), to understand whether the number of sanctions considered as legitimate is dependent of the gravity of the theft. We see an increase in the number of legitimate sanctions of about 0.7. When breaking down by the type of sanctions, the effect size is about 0.3 and 0.4 for the direct and indirect sanctions. The differences are statistically significant at the 0.1% level for the general and indirect measures, and significant at the 1% level for the direct measures. The consistency of the findings extends to the use of alternative outcomes such as whether citizens agree with the chief behavior and whether citizens should take any actions against the chief. The majority of respondents deem a diverse range of sanctions as acceptable, with a noticeable inclination to penalize the chief more frequently in cases of more significant theft (treatment 4 vs treatment 1).

Taken together, the results are firmly in line with our first hypothesis: citizens do find that sanctioning their leaders - using a variety of channels, direct and indirect - as legitimate behavior. The results also underline that the more serious the theft is, the more sanctions are considered as legitimate.

We dig now into the questions of what type of sanctions are preferred by the respondents. Figure 2 illustrates in the panel A, the mean of the number of total, direct, and indirect sanctions considered as legitimate. In panel B, it displays the share of respondents who perceive the nine sanctions as legitimate across the control, treatment 1 and 4. These findings offer an important insight. Citizens state that they prefer to call higher authorities rather than sanctioning their leaders directly. The most widely chosen sanctions by around 75% of the respondents in the treatment groups are those where the citizen complains to a higher authority (the community elder, the section chief, or the Paramount Chief). Then, blaming the chief directly or stopping working on their farm is the second most widely sanction chosen. Conversely, despite occasional references in the existing literature, the employment of more severe measures such as threatening the chief physically (Bulte et al. 2018; Richards 2021), refraining from paying local taxes, or avoiding marital ties with members of the chief's family remains illegitimate sanctions among community members.

Table 3: Average treatment effects of chief malevolence on the total number of legitimate sanctions, the number of direct and indirect legitimate sanctions against the town chief

	T1 - C			T4 - T1		
	General	Direct	Indirect	General	Direct	Indirect
Treatment	3.14*** (0.17)	1.2*** (0.09)	1.93*** (0.1)	0.7*** (0.14)	0.33** (0.11)	0.37*** (0.08)
Control mean	0.59	0.1	0.49	3.66	1.26	2.39
DV range	{0, 9}	{0, 6}	{0, 3}	{0, 9}	{0, 6}	{0, 3}
Observations	362	362	362	332	332	332
R ²	0.57	0.41	0.59	0.45	0.35	0.33

Notes:

Three outcome variables are used: general, direct and indirect. General is the total sum of sanctions considered as legitimate. Direct is the sum of sanctions considered as legitimate targeting directly the chief. Indirect is the sum of sanctions considered as legitimate targeting an higher authority. T1-C tests Treatment 1 where the quantity of money stolen is very small vs the control group, and T4-T1 tests Treatment 4, where half of the money is stolen vs Treatment 1 (hypothesis 1). village and block fixed effects are used. Robust standard errors in parenthesis.

*** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$; + $p < 0.1$.

Appendix J includes a formal statistical test that confirms the preference for indirect sanctions. This evidence is also supported by the open ended survey question. A random subset of respondents was asked how they would respond in such a situation, and all indicated an indirect approach: they would complain to a tribal authority, an elder, or the Section/Paramount Chief.

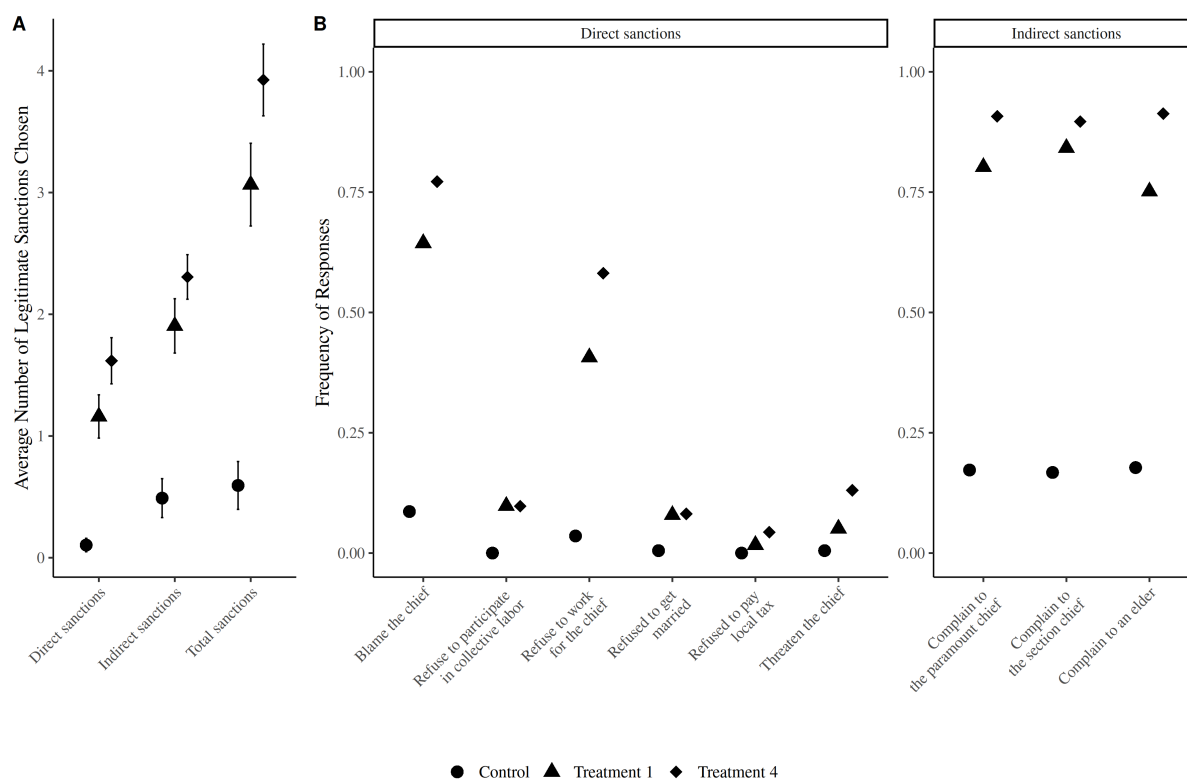


Figure 2: Proportion of total, direct and indirect sanctions by treatment arm

Notes: Panel A presents the average values of total, direct, and indirect sanctions considered as legitimate in the control, treatment 1, and treatment 4 conditions, with the dots representing these averages. The bars illustrate two standard errors. In Panel B, the figure displays the average legitimate sanctions per sanction type and treatment condition. Since the outcome in this case is a binary variable, no standard errors are shown. Treatment 1 corresponds to the scenario where the chiefs steal a very small portion of development funds while treatment 4 represents a scenario where half of the money is stolen.

We also test whether community members choose sanctions based on their relative costs. The table in Appendix J shows a significant inverse association between the chosen sanctions and their relative costs, supporting our hypothesis 1a.

Social groups differ in their preferences towards sanctioning the town chief

We examine whether community members possess similar preferences with regard to the quantity of direct and indirect legitimate sanctions by comparing the treatment 1 with control, and the treatment 2 with treatment 3 (moderating effects of elders). Specifically, we investigate the heterogeneous effects of gender, wealth, and political rights, which encompass the right to vote for the town chief.

As shown in Appendix K, we found that men are more likely to find a wider range of sanctions as legitimate. Furthermore, contrary to our expectation, when the quantity of money stolen is small, poorer respondents are more likely to find a wider range of sanctions as legitimate. When the quantity of money stolen increases, the results reverse suggesting that wealthy people are more tolerant to small theft. Finally, the right to vote emerges as a significant predictor of an individual's attitudes towards direct and indirect legitimate sanctions. Community members possessing voting rights tend to consider on average 1 more direct sanction and around 0.5 indirect sanction as legitimate.

The heterogeneity in sanctioning preferences across social groups poses potential adverse outcomes, particularly in our context where men, individuals of higher socioeconomic status, and those with political rights demonstrate elevated sanctioning preferences. In this scenario, if the town chief and the elders respond to sanctioning pressures, their responsiveness might be disproportionately biased towards these groups. This observation is consistent with previous research that highlights a bias among traditional authorities against women and groups characterized by limited political rights or lower income levels (Clayton 2014; Honig 2017; Muriaas et al. 2019). However, formally testing whether these sanctioning preferences drive inequalities between social groups goes beyond the scope of our study.

The role of the elders

In this section, we examine the role of political intermediaries, specifically the elders who act as chiefs' councilors. Do these intermediaries influence village members' sanctioning preferences? A substantial number of respondents view the elders as the appropriate figures to approach when the town chief's actions are not aligned with the community's interests. Rather than acting independently, many respondents prefer to await the elders' intervention in sanctioning the chief, as illustrated by responses to the open-ended question (outcome 3 in the survey experiment).

“Nothing much because the town Chief is the head of the village, only the elders will talk on behalf [of] us, the villagers.” — A respondent receiving T3

“Will talk to the youth leader about the chief's behavior hopefully he (the youth leader) will take up the matter to the elders.” — A respondent receiving T4

We conducted a formal statistical analysis to investigate the potential influence of elders on the sanctioning preferences of ordinary citizens, employing two comparisons. Firstly, we compared the responses between treatment 2, where the council of elders expressed blame towards the chief, and treatment 3, where the council of elders did not express blame towards the chief. Comparing treatments 2 and 3 allows us to explore whether respondents' perspectives on the legitimacy of sanctions are contingent upon the behavior of elders. Secondly, we compared treatment 2 with treatment 1, which did not mention the behavior of the elders, as a robustness check analysis.

Contrary to our initial expectations, we did not find any evidence indicating that community members find a smaller quantity of sanctions as legitimate when the elders had already reprimanded the chief. Surprisingly, as displayed by Table 4, the direction of the effects was opposite to what was anticipated. When comparing treatment 2 with treatment 3, the effect size for the number of total sanctions considered as legitimate was 0.5, statistically significant at the 1% level. The majority of this effect was driven by an increase in indirect sanctions preferences, approximately 0.3, which was also statistically significant at the 1% level. Although

the effect size for the direct sanctioning measure was positive, it did not reach statistical significance. Overall, the effect sizes were 0.24 for both direct and indirect sanctions. The results are robust when using the sub-sample of villages that have a council of elders (approximately 90% of the sample).

For the second comparison, the effect sizes were relatively smaller. The general measure, the total number of sanctions considered as legitimate, yielded an effect size of approximately 0.3, with effect sizes of 0.2 for direct sanctions and 0.1 for indirect sanctions. Among these, only the effect sizes for the general measure and direct sanctions reached statistical significance at the 10% level. The reduced disparities between treatment 2 and treatment 1 can be attributed to the possibility that the societal significance of elders is relatively diminished within these communities. Nevertheless, the prominence of the first action emphasized by respondents, particularly their tendency to initially advocate addressing concerns with elders in open-ended questions, renders that explanation less tenable. A more plausible explanation is that survey participants may assume that the council of elders will intervene, even when not explicitly specified in the scenario. Overall, the findings align with prior scholarly investigations that underscore the significance of the elites for sustaining cooperation and mobilization (Goist & Kern 2018).

Table 4: Average treatment effects of elders' behavior on the total number of legitimate sanctions, the number of direct and indirect legitimate sanctions against the town chief

	T2 - T3			T2 - T1		
	General	Direct	Indirect	General	Direct	Indirect
Treatment	0.48** (0.16)	0.19 (0.13)	0.29** (0.09)	0.29+ (0.15)	0.2+ (0.1)	0.09 (0.09)
Control mean	3.84	1.44	2.4	3.75	1.29	2.46
DV range	{0, 9}	{0, 6}	{0, 3}	{0, 9}	{0, 6}	{0, 3}
Observations	310	310	310	331	331	331
R ²	0.37	0.18	0.35	0.44	0.37	0.33

Notes:

Three outcome variables are used: general, direct and indirect. General is the total sum of sanctions considered as legitimate. Direct is the sum of sanctions considered as legitimate targeting directly the chief. Indirect is the sum of sanctions considered as legitimate targeting an higher authority. T2-T3 tests Treatment 2 (where the elders do sermon the chief) vs Treatment 3 (where the elders do not sermon the chief), and T1-T3 tests Treatment 1 vs Treatment 3 (hypothesis 2). Control mean refers to the average number of sanctions considered as legitimate for the scenario of reference (treatment 3 and treatment 1). Village and block fixed effects are used. Robust standard errors in parenthesis. *** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$; + $p < 0.1$.

We identify two complementary mechanisms: the information-legitimation mechanism, where elders' actions against the chief legitimize villagers' grievances, and the covering mechanism, where collective actions reduce retaliation risk. Appendix L displays formal evidence from statistical tests and from open-ended responses and suggests both mechanisms are at play, with elders' influence playing a key role in shaping villagers' willingness to challenge the chief and maintain social order.

Limitations

We test the robustness of our results to experimenter demand effects, which occur when subjects infer the expectations of researchers and adjust their behavior accordingly (Mummolo & Peterson 2019). Our survey experiment was embedded within a one-hour household survey primarily focused on understanding livelihood activities and deforestation patterns in these communities. This design provides strong reason to believe that respondents were unlikely to discern the experimenter's intentions, thereby reducing the likelihood of such effects. Nonetheless, our empirical strategy addresses this concern in two ways. First, we compare two scenarios where the demand effect is likely to be similar: treatment four, where half of the money is taken by the chief, and treatment one, where a small portion of the money is taken. We found results consistent with our hypothesis. Second, previous studies have found demand effects to be either negligible (Mummolo & Peterson 2019) or relatively small (de Quidt et al. 2018). We apply a bounding estimation strategy, accounting for these effects using the 0.1 to 0.3 standard deviation range reported by de Quidt et al. (2018). The results are displayed in Appendix I. Sensitivity analysis of hypothesis 1 demonstrates that the results are robust to all experimenter demand effect sizes, while for hypothesis 2, small experimenter demand effects could explain the findings.

Village-level sanctioning preferences and public good provision

Do sanctioning preferences correlate with improved institutions and enhanced village-level public goods? If sanctioning preferences influence leaders' behavior, villages with stronger preferences would experience more accountable leadership and improved socio-economic conditions. While our study cannot directly test this, we approximate accountability by measuring village-level sanctioning preferences and examining their relationship with key outcomes: inclusive decision-making, conflict frequency, and deforestation rates.

We measure lack of inclusion through an innovative behavioral metric: in a land planning activity, we asked the town chief to invite four community leaders and then measured the proportion of invitees with family ties to Paramount or town chiefs. A higher number of family-affiliated leaders indicates stronger representation of chiefs' interests; taking the inverse proxies for participatory inclusion. Village-level sanctioning preferences are aggregated from responses on respondents' ability to apply sanctions, distinguishing between direct and indirect preferences due to different accountability channels. The variation in sanctioning preferences across villages is significant (Appendix M), despite the study area's small size and cultural homogeneity. Additionally, a positive, linear relationship exists between direct and indirect sanctions at the village level (Appendix M).

Table 5 shows tests for Hypotheses 3 and 4, which predict positive correlations between sanctioning preferences and both inclusive decision-making and public good provision. In villages with strong preferences for indirect sanctions, inclusivity in land planning declines, indicated by a higher proportion of participants from the town chief and Paramount Chief families. Each unit increase in the independent variable reduces inclusive decision-making outcomes by 0.4 and 0.3 standard deviations, respectively. Additionally, stronger indirect sanctioning preferences are associated with a significant 0.6 standard deviation reduction in village conflict frequency. However, no significant relationship is observed with deforestation rates.

On the other hand, an increase in direct sanctioning preferences is correlated with a reduction in the share of invited town chief family members in the land planning activity of 0.1 standard

errors. But the results fail to reach statistical significance. Furthermore, there are no significant association with conflicts frequency or deforestation rates.

This finding aligns with a narrative suggesting that in contexts where vertical clientelistic relationships (e.g., between paramount chiefs and section or town chiefs) and patron-client networks are key features of the political landscape (Fanthorpe & Maconachie 2010; Labonte 2012), indirect sanctions may serve as more effective tools for disciplining local leaders than direct sanctions. Indirect sanctions make town chiefs more accountable to paramount chiefs, potentially reinforcing patron-client relationships between them. In anticipation of potential sanctions from higher-ranking authorities, chiefs may seek to appease these authorities by involving their family members in decision-making processes, which may reduce inclusiveness in participatory decision-making. However, this dynamic may still incentivize local leaders to provide public goods, such as ensuring lower conflict frequency. This is also consistent with the strong association between trust in the town chief and preferences for indirect sanctions. This preliminary statistical analysis is subject to limitations, including omitted variable bias and reverse causation. Nevertheless, the identification of significant correlations between observed behavior in the field and preferences for indirect and direct sanctions at the village level suggests that these preferences may serve as indicators of an important political phenomenon—namely, a non-electoral accountability mechanism.

Table 5: OLS regression between direct, indirect sanctioning preferences, and inclusive decision-making and conflict frequency

	Inclusive decision making (inverse measure)				Conflict frequency		Deforestation rates	
	TC	TC	PC	PC	(1)	(2)	(3)	(4)
Direct sanctions	-0.28* (0.13)	-0.13 (0.14)	0.03 (0.12)	0.02 (0.18)	0.27* (0.13)	0.18 (0.12)	-0.01 (0.12)	0.04 (0.11)
Indirect sanctions	0.45*** (0.13)	0.45** (0.14)	0.34*** (0.10)	0.28* (0.13)	-0.37** (0.12)	-0.61*** (0.11)	-0.06 (0.14)	-0.23 (0.15)
Control	No	Yes	No	Yes	No	Yes	No	Yes
Chiefdom FE	No	Yes	No	Yes	No	Yes	No	Yes
Observations	76	73	76	73	76	74	76	74
Adj. R ²	0.13	0.20	0.11	0.21	0.08	0.36	-0.02	0.18

Notes: Dependent variables are continuous and standardized. Independent variables are also standardized. TC and PC refer to the share of town chief (TC) or Paramount Chief (PC) family members selected for the land planning activity. Positive values indicate lower inclusive participatory decision-making. Columns (1) and (2) refer to the stated number of conflicts revealed by the town chief, measured on a scale from 1 to 5, and this variable is standardized. Columns (3) and (4) refers to deforestation rates between 2015 and 2020 in a 6km radius of center of villages. Controls include population size, the share of families with voting rights for the town chief, the stated frequency of meetings between the town chief and the Paramount Chief (measured using a dummy variable that equals 1 if meetings occur at least once a month), an index of infrastructure development, and income inequality between the chief and the average household. Robust standard errors in parenthesis. *** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$; + $p < 0.1$

Our findings, however, do not necessarily contradict an alternative narrative, as suggested by Acemoglu et al. (2014). These authors highlight that, in chiefdom with low levels of political competition, civil society is often subject to elite capture. The observed increase in Paramount Chief family involvement in village land planning activities where indirect sanction preferences are more common underscores the potential for such capture. In response to potential repression, villagers may avoid conflicts at the local level, viewing appeals to higher authorities as their primary means to hold local leaders accountable. Yet, we believe that this interpretation is less likely as it is challenged by the strong statistical association between indirect sanctioning preferences and trust in the town chief.

Conclusion

Our research advances the understanding of accountability mechanisms for local leaders, offering insights beyond electoral settings (Chen et al. 2016; Tsai 2007b). We present a theoretical framework that categorizes two channels for community members to sanction local leaders: direct and indirect. This framework suggests that indirect sanctions are more prevalent in political

contexts marked by strong vertical and clientelistic relationships between leaders at different levels, while direct sanctions are more likely in communities where local leaders are deeply embedded and share communal institutions with their constituents. These characteristics form the scope conditions for the findings presented in this paper. We assess the extent to which ordinary citizens view sanctioning town chiefs as legitimate. Through a survey experiment, we found that citizens regard a wide range of sanctions as legitimate and feel empowered to impose them, with a preference for indirect sanctions. Contrary to anecdotal accounts in the literature, most community members do not view direct sanctions as legitimate. This preference for indirect sanctions may be partially attributed to their lower associated costs. Our findings suggest that citizens have non-electoral tools to ensure traditional leaders remain responsive to community interests, even in the absence of elections. Additionally, our results indicate that the council of elders, while not a significant initiator of sanctions, does influence legitimacy perceptions. When elders sanction a town chief, community members are more likely to consider sanctions legitimate. Our work adds to the literature on village advisory councils (Baldwin et al. 2022) by elucidating how these councils shape community members' preferences for sanctioning. Our findings also suggest that the type of sanction (direct or indirect) likely shapes leader behavior in distinct ways. Specifically, we observe a strong inverse relationship between indirect sanctions and inclusive decision-making, as well as a positive relationship between indirect sanctions and lower conflict frequency, which is especially relevant in settings where chiefs play a key role in maintaining village peace.

Future research should investigate bottom-up accountability mechanisms with stronger research designs to identify causal effects, thereby clarifying how chiefs respond to sanctioning behaviors. Examining the determinants of sanctions and their evolution over time is also theoretically valuable. Exploring heterogeneous effects by gender, wealth, and voting rights could further illuminate how differences in enforcing norms through sanctions influence inequalities and power distribution over time.

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A Selectorate model of accountability: a test in Sierra Leone

Two broad approaches have been proposed to explain accountability mechanisms in traditional leadership systems. The first focuses on the selection process of traditional leaders as a key determinant of accountability relationships. Drawing on the selectorate model of national politics (Mesquita et al. 2005), Balasuriya (2023) theorize that two main factors influence whether traditional leaders are accountable to their constituents: (a) the selectorate and (b) the winning coalition. The "selectorate" refers to the subset of the population involved in selecting leaders, which has long been recognized as a critical factor. In some chieftaincy systems, hereditary rules concentrate power in single families, often resulting in unaccountable 'despots' with little need for public approval (Nathan 2019). By contrast, in Sierra Leone, where paramount chief elections require alliances among ruling families, competition encourages leaders to satisfy broader interests (Acemoglu et al. 2014). Empirical evidence indicates that a greater number of ruling families correlates positively with outcomes such as education, economic development, child health, and social capital (Acemoglu et al. 2014).

The "winning coalition," a smaller group within the selectorate that is essential for a leader's retention of power, is another crucial factor. According to Balasuriya (2023), a larger ratio of the winning coalition to the selectorate promotes more inclusive political outcomes. Finally, ambiguous or contested succession rules can allow state intervention in leadership appointments, enabling governments to install leaders who may prioritize their own interests over community welfare (Nathan 2019). This framework underscores the importance of clear and inclusive succession processes for ensuring accountability (Nathan 2019).

In this section, we empirically examine whether the competitiveness and inclusivity of selection procedures are associated with greater responsiveness and higher satisfaction with town chiefs. To explore this, we analyze data collected by Casey et al. Casey et al. (2012) from over 200 towns in Sierra Leone. Their dataset includes information on town chief selection procedures and the proportion of households allowed to vote when the chief is elected. Additionally, they conducted an experiment in which development goods (e.g., batteries or salt) were distributed to villages, and a follow-up assessment measured the extent to which town chiefs diverted these goods for personal benefit (corruption behavior).

Using these data, we estimate multiple OLS models with socio-economic controls and chiefdom and district fixed effects to assess whether town chief selection procedures are statistically associated with lower corruption and higher satisfaction, as predicted by selectorate models. The independent variable is a binary indicator: a value of 1 denotes villages where the town chief is elected by at least 50% of households, while 0 indicates other selection methods.

Our analysis examines several measures of corruption and responsiveness. The first variable assesses the percentage of development goods allocated for private rather than public purposes, as described by Casey et al. Casey et al. (2012). The second variable is a binary indicator of whether the community reported corruption issues in the past two years. The third variable

measures the town chief's influence over the allocation of development goods, using an index where higher values indicate greater influence. The fourth and fifth variables evaluate perceptions of the town chief's behavior: whether they impose excessive or unfair fines (coded as Yes = 1) and whether respondents are satisfied with their performance (also coded as Yes = 1).

Table A.1: OLS regression between the presence of village election for selecting the town chief and development and corruption outcomes

	Corruption			Power			Satisfaction			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
TC Elected	0.09 (0.08)	0.12 (0.08)	0.02 (0.03)	0.02 (0.03)	0.14* (0.06)	0.06 (0.07)	0.10*** (0.03)	0.07* (0.03)	0.01 (0.02)	0.03 (0.02)
TC Unelected means	0.10	0.10	0.03	0.03	0.31	0.31	0.10	0.10	0.92	0.92
DV range	{0, 0.5, 1}		{0, 1}		[0, 1]		{0, 1}			
Control	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Chiefdom FE	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
District FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Number of observations	146	143	226	221	236	231	2776	2613	2774	2612
Adj. R ²	0.01	0.21	0.00	-0.01	0.12	0.30	0.02	0.09	0.00	0.02
N Clusters	146	143	226	221	236	231	236	231	236	231

Notes:

The table displays the results of OLS regressions between the presence of village election and corruption, power and satisfaction with the village chief. The independent variable takes the value 1 (village chief elected) when there is election and at least 50% of the households are allowed to vote. We use 5 outcome variables:

(1) and (2): Development goods distributed in Casey et al. (2012) used for private purposes. In percentage.

(3) and (4): The community has problem with corruption in the past 2 years (dummy).

(5) and (6): Town chief has the most influence over the allocation of development goods. Numeric index. Higher value indicates higher town chief influences.

(7) and (8): The current town chief fine people too much or unfairly (Yes=1).

(9) and (10): Respondents are satisfied with the current town chief (Yes=1).

Control variable includes the village size, the frequency of paramount chief visits, the relative wealth of villages (despite for column 8), respondents' gender, education level, religion, ethnicity, whether the respondent has a paid job and work in agriculture, respondents' political participation, inclusion in group, and level of conflicts. District and chiefdom fixed effect included. Cluster robust standard error at the village in parenthesis. *** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$; + $p < 0.1$

The results, displayed in the table below, reveal mixed findings. It shows that there are no statistically significant association between villages with elected town chiefs and villages with other selection methods regarding corrupted behavior or power. If anything, the association goes in the opposite direction than the suggested by the selectorate model. Around 10% of unelected town chiefs reportedly divert development goods for personal use, compared to 13% in villages with elected chiefs, but this difference is not statistically significant. The only sharp differences between these two sets of villages are the likelihood of imposing excessive fines. Notably, in villages where chiefs are elected, they are more likely to impose excessive fines, of about 7 percentage points. Nevertheless, satisfaction with elected and unelected chiefs remains very high at about 90%. These results suggest that the selectorate model provides little insights into variations in corruption, chief influence, and satisfaction. However, the findings also highlight the complexity of accountability in traditional leadership systems. Even unelected town chiefs are highly esteemed, indicating that factors beyond the selection mechanism contribute

to their legitimacy and effectiveness. This paper aims to contribute to the understanding of this empirical puzzle by highlighting the importance of non-electoral accountability mechanisms.

B Pre-Analysis Plan

Rural Africa has the specificity of the co-existence of State and chieftaincies institutions in governing common affairs. Complementarities and competitions mark the development of these institutions. Debates remain vivid about the role of traditional leaders (or chiefs) in providing public goods, primarily because of the lack of accountability in traditional systems. However, the recent development in the chieftaincy literature underlines that traditional institutions have various features that are likely, in certain circumstances, to hold chiefs accountable and solve collective action dilemmas. Authors have focused on leaders' selection, the decision-making process, and their embeddedness in their communities (Baldwin 2016; Baldwin & Holzinger 2019). The classic democratic theory underlines the importance of competition for leaders' selection (Przeworski et al. 1999). In Sierra Leone, Paramount Chiefs facing more competitive elections are in chiefdoms with higher public good provisions (Acemoglu et al. 2014). Decision-making based on consensus, transparency, and inclusivity was underlined as essential for good leadership and the effectiveness of traditional political institutions (Börzel & Risse 2021; Magaloni et al. 2019). When well embedded in their communities, chiefs behave in close interdependent relationships with their community members, especially when they have long-time horizon (Dionne 2011). Social spaces sustained by reciprocity enable cooperation between group members through different channels. Such social space increases the expectation that peers will cooperate (Atwell & Nathan 2022) and sustain monitoring and trust without the need for sanctioning. However, even if community members are under scrutiny, such social spaces also enable a range of social sanctions (Miguel & Gugerty 2005; Tsai 2007a).

All these features give rise to potential channels of bottom-up accountability mechanisms to enforce community norms. Bottom-up accountability mechanisms refer to citizens' actions to hold their leaders accountable. I mention these mechanisms as a strong sanctioning institution when these mechanisms are present. However, such accountability channels have not been the main focus of previous research on traditional leadership, cooperation, and public good provision (Baldwin & Holzinger 2019).

This research fills that gap by determining how citizens sanction undemocratic traditional village leaders and its consequences on town leaders' quality and resource governance effectiveness. The research is undertaken in small communities where chiefs are well embedded in their communities. It follows up a pre-registered pilot study undertaken in the Loma Mountain National Park in Sierra Leone. A household-level survey experiment and a village-level survey will be implemented in 80 villages in the Sherbro River Estuary in Sierra Leone. In two different situations, land allocation and community fund management, the experimental design disentangles how sanctioning mechanisms operate and grasps the diversity of sanctioning practices according to citizens' social and economic status. In a second step, the project explores how village-level heterogeneity in citizens' ability/willingness to sanction their village chief

impacts leaders' behavior and resource governance effectiveness measured as a deforestation rates index in the village's proximity.

B.1 Theory and hypotheses

Do sanctioning institutions shape leaders' behavior in acting for the common good?

The early contributions about chieftaincies were clear regarding that matter. Because of upward accountability mechanisms and their colonial legacy, they conceptualized chiefs as colonial inventions behaving as despots (Mamdani 1996). They emphasized their low popular support (Ribot 2002) sustained by a lack of institutional alternatives for the population (Ntsebeza 2005). Logan Logan (2013) showed that empirical findings do not support this view. Indeed, using Afrobarometer data from 19 countries, she finds that traditional leaders "enjoy widespread popular legitimacy, and most believe that traditional authorities have an important role to play in local governance (Logan, 2013, p353)".

Recent works acknowledge that chiefs can behave as development brokers with a positive impact on their community Baldwin (2016). Along with other arguments, bottom-up accountability channels were discussed as one feature explaining the development broker model (Baldwin & Holzinger 2019). Such an argument used the classic conceptual framework of democratic theories, not without any problem (Neupert-Wentz et al. 2022). This conceptual stretching (Sartori 1970) might give a truncated vision on what basis chiefs are accountable to their community members. When fair and competitive, election is a tool to select representative leaders and punish those with bad records or poor outcomes (Przeworski et al. 1999). But in rural Africa, many traditional leaders are selected and rule for life. Being removed from office is an exception, not the rule. Instead, bottom-up sanctions would either pressure chiefs higher in the hierarchy to formally sanction the town chief (activation of upward accountability channels) or sanction directly the town chief through complex socio-economic institutions. The presence of reciprocity norms in communities where chiefs are well embedded give birth to this latter type of sanctioning institutions. This is the main argument that this experimental research tests

Reciprocity and sanctions

In this section, I lay out the various sanctions used against village chief that did not behave in the community interest. With such behavior, the village chief breaks reciprocity institutions. As a consequence community-members stop fulfilling their duties. The first sanction targets the ability to enjoy community-level reciprocity institutions. The communities rely primarily on farming and fishing activities that require collective organization. For example, most of the farms will rely on rotational labor groups for the harvesting of rice. Someone will work on someone else's farm because they expect the others to do the same in return. When people lose trust in someone, they close the institution to that person (Bulte et al. 2018).

The second sanction uses marriage institutions. Creating blood links with other families is a means of attracting resources and influence. When a chief loses respect, citizens will refuse to get married to the chief family. Doing so, they preserve their family to potential scandals and reduce the chief's overall influence.

The third set of sanctions targets, more specifically, the chief. The chief is a figure of authority within the village. When the chief is respected, it has the legitimacy to fulfill its duty. It can organize collective labor for village purposes, collect taxes, resolve conflicts, and implement and enforce by-laws. Questioning the chief's authority and not following its order is a strong message and has a significant negative impact on its power. Therefore, blaming the chief publicly, refusing to pay local taxes, or working for collective labor will fall under this type of sanctions (Arnall et al. 2013; Bulte et al. 2018).

Chiefs' removal from office

At the village level, the traditional structure comprises the town chief, tribal authorities (that can vote for the position of the paramount chief), the mummy queen, the youth leader, and the council of elders. The latter has an essential role in advising the chief in making decisions. Pressuring the council of elders can be an effective means for ordinary citizens to pressure the town chief. The chiefs can also be formally sanctioned within the chieftaincy structure. The paramount chief rules on the section chief, who rules on town chiefs. When there are issues between the village chief and the community, the section chief is the first authority called to resolve the dispute. If the dispute remains unresolved, the paramount chief is called. If the issue is severe, the town chief can be suspended for some time or removed from office. Consequently, when a chief has committed a theft, citizens inform authorities that can formally sanction the chief (Baldwin 2016). However, such actions hardly happen. Finally, as the chief rules for life, the only way to remove him from office in certain societies is to commit murder. As a result, in many instances in Cameroon, rebellions occurred, and chiefs were physically threatened or killed.

B.2 Theoretical expectations

B.2.1 Expectations

Consistent with evidence found in the literature, I expect any bottom-up accountability mechanisms to involve pressuring chiefs using one of those essential elements of chiefs' political status. Consistent with a rational choice framework, I also expect citizens to choose preferably low cost sanctions. The project aims to test the following hypothesis more robustly.

Main hypothesis 1: When undemocratic village leaders do not behave in the interest of the community they represent, citizens sanction them through a variety of social, economic, and political channels, preferably choosing the low cost ones.

The project explores the relationship between councilor pressure and bottom-up pressure by citizens. Similarly, using a rational-choice approach, I expect those pressure to behave as substitute for each other. As councilor pressure was found to be effective in driving and sanctioning chiefs' behavior (Baldwin et al. 2022), when the council of elders sanctions the leader, I expect citizens would refrain from engaging in costly sanctioning action.

Main hypothesis 2: When the council of elders takes an active role in sanctioning the chief, ordinary citizens will be less willing to take an active role in sanctioning the chief. On the contrary, when the council of elders do not take any action, citizens will sanction their chief through a variety of social, economic, and political channels. Horizontal and bottom-up accountability mechanisms would substitute for each other.

The consequences of well-functioning sanctioning institutions

What are the consequences of well-functioning sanctioning institutions on leaders' behavior? When citizens can sanction their chiefs, the relative cost for leaders to undertake actions for their private gains increase. Therefore, it incentives pro-social leadership (in the sense of Kosfeld and Rustagi Kosfeld & Rustagi (2015)). Such a mechanism was revealed in a field experiment in Ethiopia by Kahsay and Bulte Kahsay & Bulte (2021) with elected leaders. However, whether a similar mechanism holds with leaders hardly removed from office remains to be seen.

Main hypothesis 3: Villages with a higher ability to sanction their chiefs are associated with a higher responsive leaders.

Main hypothesis 4: Villages with a higher ability to sanction their chiefs are associated with higher leadership quality.

There is currently robust evidence showing the importance of monitoring and sanctioning institutions to maintain ecosystems in good health (Kahsay & Bulte 2021; Ostrom 1990; Walker 2009). However, research primarily focused on elected leaders. The project aims to broaden the scope of the theory to a broader set of bottom-up accountability mechanisms.

Main hypothesis 5: Villages with a higher ability to sanction their chiefs are associated with lower deforestation rates

Secondary hypothesis

I don't expect citizens to have the same ability to sanction their leaders. More specifically, I would expect wealth and gender to be two important characteristics in shaping sanctioning behaviors. The socio-economic conditions influence the perception of how bad a behavior is. For an amount X of money taken from a community project, wealthy citizens will consider it as negligible while the poor will be much more offended. Socialization shapes preferences, values, and norms of correctness. In a society, like rural Sierra Leone, where social spheres are strongly divided between male and female, judgement of behavior correctness defers between male and female. Socialization and differences of judgement will affect the space of legitimize

political actions that a citizen could take. We expect male and the wealthy to have a wider space of legitimize political actions.

Secondary hypothesis 1a: The wealthier the citizen, the more likely he/she use costly sanctioning actions.

Secondary hypothesis 1b: The wealthier the citizen, the more tolerant they are on small corruption behavior.

Secondary hypothesis 2: female citizens are less likely to use costly sanctioning actions

B.3 Empirical strategy

In this section, I develop the empirical strategy and explain the methodology. To test the two first hypotheses, I use two household-level survey experiments. A chief-level survey experiment is also conducted to measure leaders' responsiveness which is essential for testing the third hypothesis. Finally, I analyze advanced satellite images to test the fifth hypothesis.

B.3.1 Data collection and sampling

I aim to test these hypotheses in the Sherbro River Estuary and Yawri Bay in Sierra Leone. The study area is located in the Southern province of Sierra Leone in the district of Bonthe and Moyamba where data is collected in 80 villages. The area is characterized by fishing population with a lack of good arable land for agriculture. Livelihood activities are strongly tied to mangrove forests. Indeed, fishing population smokes fish for conservation that consume a lot of wood. Access to market and cities is very low because of the bad quality of the road network and the high cost of sea transportation.

In each village, 12 households are randomly sampled from the community to participate in the household level survey experiment. The sample is stratified on gender to ensure an equal representation of male and female. Town chief is also selected to participate in the chief level survey experiment.

B.3.2 Three survey experiment designs

Household-level experimental designs

At the household level, I conduct two survey experiments where I vary the nature of the chief behavior. In the first experiment, the scenarios deal with the chief stealing from a community project. In the second experiment, the scenarios deal with the chief allocating land against the community interest. Both survey experiments contains a control scenario and respectively four and three treatment arms. In each village, 12 subjects will be randomly assigned to one of these respectively five or four theoretical scenarios. I use a block randomization on gender to ensure an equal share of male and female in each treatment arms. This strategy is likely to increase the

precision of the estimates and enable to explore heterogeneity effect between male and female (secondary hypothesis 2).

Survey experiment 1

In a village in Sierra Leone, a NGO developed a project for the development of the community. The town chief [*Treatment details*].

- *Pure control: [...] played a key role in managing the project at the village level.*
- *Treatment 1: [...] played a key role in managing the project at the village level. During the project, the town chief took a very small part of money for his own benefits. This treatment arm helps test hypotheses 1.*
- *Treatment 2: [...] played a key role in managing the project at the village level. During the project, the town chief took a very small part of money for his own benefits. The elders in the village went to the chief and sermoned him. This treatment arm is helpful in testing hypothesis 2.*
- *Treatment 3: [...] played a key role in managing the project at the village level. During the project, the town chief took a very small part of money for his own benefits. The elders in the village did not sermoned the chief. This treatment arm is helpful in testing hypothesis 2.*
- *Treatment 4: [...] played a key role in managing the project at the village level. During the project, the town chief took half of the money for his own benefits. This treatment arm is helpful in testing the secondary hypothesis 1.*

After reading the scenario, the subject will answer the following question.

- Question 1: On a 1-5 scale, how much do you agree with the chief's behavior?
- Question 2: Should the citizens of the village take any actions as a reaction? –_i This measure serves as an indicator about whether the respondents was led
- Question 3: If yes, what actions would you take if you were in a similar situation? (open question asked in a randomly selected set of respondents to reduce survey length)
- Question 4: Some members of the village reacted in this way. In your opinion, is it legitimate? Cross all behavior considered as legitimate in such a situation:
 - *Sanction₁*: Blame the chief directly;
 - *Sanction₂*: Threaten physically the chief;
 - *Sanction₃*: Complain to an elder about the chiefs' behavior;
 - *Sanction₄*: Complain to the paramount chief;
 - *Sanction₅*: Refuse to get married to the chief's member of the family;
 - *Sanction₇*: Refuse to pay local tax;
 - *Sanction₈*: Refuse to participate in farm labor for the chief;
 - *Sanction₉*: Refuse to participate in collective labor;
 - None of the above;
 - Refuse to answer;

- Question 5: In the same list of actions, considering their relative costs, what would you be able to undertake if you were in a similar situation?

Then, we ask two control questions to grasp whether the respondent did understand the scenario.

Survey experiment 2

In a village in Sierra Leone, villagers' livelihood was strongly tied to forest resources. The town chief, in consultation with landowning families, sold *[Treatment details]*.

- *Pure control:* [...] a small part of the forested land for a conservation project. The land sold could not be used anymore by villagers
- *Treatment 1:* [...] most of the forested land for a conservation project. The land sold could not be used anymore by villagers. This treatment arm helps test hypotheses 1.
- *Treatment 2:* [...] most of the forested land for a conservation project. The land sold could not be used anymore by villagers. The elders in the village went to the chief and sermoned him. This treatment arm is helpful in testing hypothesis 2.
- *Treatment 3:* [. . .] most of the forested land for a conservation project. The land sold could not be used anymore by villagers. The elders in the village did not sermoned the chief. This treatment arm is helpful in testing hypothesis 2.

After reading the scenario, the subject will answer the following question.

- Question 1: On a 1-5 scale, how much do you agree with the chief's behavior?
- Question 2: Some members of the village reacted in this way. In your opinion, is it legitimate? Cross all behavior considered as legitimate in such a situation:
 - *Sanction₁*: Blame the chief directly;
 - *Sanction₂*: Threaten physically the chief;
 - *Sanction₃*: Complain to an elder about the chiefs' behavior;
 - *Sanction₄*: Complain to the paramount chief;
 - *Sanction₅*: Refuse to get married to the chief's member of the family;
 - *Sanction₇*: Refuse to pay local tax;
 - *Sanction₈*: Refuse to participate in farm labor for the chief;
 - *Sanction₉*: Refuse to participate in collective labor;
 - None of the above;
 - Refuse to answer;

On the survey experiment 2, the number of questions was reduced to minimize the length of the survey. Then, we ask two control questions to grasp whether the respondent did understand the scenario.

B.3.3 The chief level survey experiment

At the village level, I conducted a survey experiment with the chief. The survey experiment is composed of four scenarios. Each town chief faced the four scenarios but with a different order. The pure control scenario always appear first.

- *Pure control: In a village in Sierra Leone, villagers' livelihood was strongly tied to forest resources. A company would like to buy most of the forested land for a conservation project. Villagers could not use anymore the resources.*
- *Treatment 1: Pure control + The community and the paramount chief do support the deal.*
- *Treatment 2: Pure control + The community does support the deal but the paramount chief does not.*
- *Treatment 3: Pure control + The community does not support the deal but the paramount chief does.*

After the scenario was read to the respondent, the enumerator asks the following question: On a 1-5 scale, how likely would you support the deal, if you were in a similar situation?

B.4 Measurement strategy

B.4.1 Measuring the cost of the sanctions listed in the survey experiment

I measure the cost of the sanctions through key informant interviews, and focus group discussions with village members, elders and town chiefs. I categorize the sanctions into two categories: low cost and high cost sanctions.

B.4.2 Individual level measure

The first empirical strategy uses individual-level inference with the following two sanctioning measure and wealth. *Sanctioning measures*: for each participant, I will compute a general sanctioning index (GSI), and a sanctioning index by the relative cost of sanctions (SIC). These two measures are based on the answer to the question: "Some members of the village reacted in this way. In your opinion, is it legitimate? Cross all behavior considered as legitimate in such a situation".

- General sanctioning index (GSI): for participant j ,

$$GSI_j = \sum_1^9 Sanction_i$$

$Sanction_i$ taking the value 1 if the participant chooses that option and 0 otherwise. The measure are standardized for the purpose of the analysis.

- Sanctioning index by cost (*SIC*): for participant j , and cost c

$$GSI_{j,c} = \sum_{iinc} Sanction_i$$

$Sanction_i$ of cost c taking the value 1 if the participant chooses that option and 0 otherwise. The measure are standardized for the purpose of the analysis.

Wealth: the wealth of participants will be measured using either a standardized measure of the various assets owned or a standardized measure of the number of farm animals they own that was previously underlined as a relevant measure of wealth.

Controls: those variables will be used to assess the balance of the three experimental groups. Control variables refer to age, gender, number of children, professions, education, wealth, ethnic group, and political and conservation attitudes. In addition, considering the recent development and empirical evidence about the importance of social networks in fostering political participation (Jöst & Lust 2022), I will control for the density of social networks and the priors of the government.

B.4.3 Village level measure

The second empirical strategy uses a village-level inference with the following measures:

Village level accountability index: this is the primary independent variable with theoretical interest. For village k , the bottom-up accountability index (*accindex*) is constructed as the mean of each average *GSI* of each treatment arms.

Leaders' responsiveness: I use the chief-level survey experiment to measure two proxies of the leaders' responsiveness, called *LR*.

- The first proxy measures how much the chief does respond to the community interest when it is in opposition to the paramount chief. To do so, for village j , I measure the difference of support for the deal between treatment 3 and treatment 1:

$$LR_{1j} = Support_{T1} - Support_{T3} \quad (3)$$

- The second proxy measures how much the chief does respond to the community interest compared to the paramount chief interest. To do so, for village j , I measure the difference of support for the deal between treatment 3 and treatment 2:

$$LR_{2j} = Support_{T2} - Support_{T3} \quad (4)$$

$LR1 > 0$ when the chief is responsive to community interest, $LR1 = 0$ when he is not responsive, and $LR1 < 0$ when the chief responds in the contrary to community interest. $LR2 > 0$ when the chief is more responsive to community than the paramount chief, $LR1 = 0$ when the

chief is equally responsive to the community and the paramount chief, and $LR1 < 0$ when the chief is more responsive to the paramount chief than the community.

Leaders' quality: Different measures of leaders' quality is used: a) how much does community members trust the chief, b) the number of annual community meetings, c) the cost for resolving a conflict, d) and how representative leaders chosen by the chief to conduct a land planning activity are. The latter is measured by the number of those leaders selected by the village leader part of its own family.

Village level deforestation index: Deforestation rates from 2015 to 2020 in a 6 km radius from the center will be determined using the Tropical Moist Forest dataset (Vancutsem et al., 2021). Robustness check will include the same measure using buffer zone of 4 to 8km from village center.

Controls: the following control variables are used in the analysis: the size of the village, access to resources, number of ruling families, ties with the paramount chiefs, overall economic condition, inequality between villagers, access to infrastructures, year of leader election

B.5 Analysis

B.5.1 Testing hypothesis 1

I will estimate the effect of leaders' malevolence on attitudes towards the legitimacy of sanctioning behavior with an average treatment effect estimand. If there is covariate balances between the control and the treatment group, I will use the following estimator:

$$GSI_j = \beta_0 + \beta_1 Z_j + \epsilon_j$$

with GSI_j , the outcome variable is the general sanctioning index, β_1 is the Average Treatment Effect, and Z_j is a dummy indicating whether the participant was in the treatment arm 1 or the control group. I will use HC2 standard errors because it is equivalent to a randomization-based Neyman variance estimator (Samii 2023). In addition, I expect the treatment group to have a higher sanctioning index (i.e., finding more sanctions as legitimate behavior). Therefore, I will use a one-tailed test with $H1 > H0$, and $\alpha = 0.05$. As advised in the EGAP modules (source), I will check on the HC2 standard errors by calculating p-values directly using randomization inference, with the difference-in-means as the test statistic.

For each sanction, I will also determine whether the treatment scenario 1 increase the probability to be chosen. I will use a logistic regression framework and determine the odds ratio between the control scenario and the treatment 1 scenario. Using the Wald criteria, I will determine whether the odds ratio is statistically different from 1 at a $\alpha = 0.05$.

$$\text{logit}(\text{Sanction}_i) = \beta_0 + \beta_1 Z_j + \epsilon_j$$

B.5.2 Testing hypothesis 2

I will estimate whether horizontal and bottom-up accountability mechanisms work as substitute with an average treatment effect estimand. If there is covariate balance between the treatment arms 1 and 2, I will use the following estimator:

$$GSI_j = \beta_0 + \beta_1 Z_j + \epsilon_j$$

with GSI_j , the outcome variable is the general sanctioning index, β_1 is the Average Treatment effect, and Z_j is a dummy indicating whether the participant was in treatment arm two or treatment arm 1. I will use HC2 standard errors because it is equivalent to a randomization-based Neyman variance estimator (Samii 2023). I expect treatment group 2 to have a lower sanctioning index (i.e., horizontal sanctioning mechanism substitutes bottom-up sanctioning mechanism). Therefore, I will use a one-tailed test with $H1 > H0$, and $\alpha = 0.05$. As advised in the EGAP modules (source), I will check on the HC2 standard errors by calculating p-values directly using randomization inference, with the difference-in-means as the test statistic.

B.5.3 Testing hypothesis 3, 4 and 5

The empirical design does not allow for making any causal claims when testing the hypotheses 3, 4 and 5. Therefore, this section develop a rigorous empirical strategy making statistical association claims. I will use the following OLS regression:

$$Y_k = \beta_0 + \beta_1 accindex_k + \beta_2 X_k \epsilon_k$$

with Y_k being either a proxy of leader responsiveness (for testing hypothesis 3), one of the measure of leaders' quality (for testing hypothesis 4) or the deforestation index measure (for testing hypothesis 5) for village k , β_1 is the effect of the bottom-up accountability index, and X_k are the set of control variables. The estimation strategies consider population size, the number of ruling families, the year of the leader's selection, a measure of inequality, and chiefdom fixed effect as control variables. For hypothesis 3 and 4, I expect villages with better functioning sanctioning institutions (higher bottom-up accountability index) to have more responsive leaders and higher quality leaders. Therefore, I will use a one-tailed test with $H1 > H0$, and $\alpha = 0.05$.

To test hypothesis 5, both a continuous variable and a dummy variable for the deforestation index will be used. I will also add bio-climatic controls to the estimation strategy. I expect villages with better functioning sanctioning institutions to experience lower deforestation rates. Therefore, I will use a one-tailed test with $H1 < H0$, and $\alpha = 0.05$.

B.5.4 Secondary hypotheses

I will estimate whether wealthier citizens and gender tend to sanction more their leaders by using a conditional average treatment effect as stated in (Gerber and Green, 2012). I will use the following estimator:

$$GSI_j = \beta_0 + \beta_1 Z_j + \beta_2 Wealth_j + \beta_3 Z_j Wealth_j + \epsilon_j (9)$$

with GSI_j , the outcome variable is the general sanctioning index for participant j , Z_j a dummy indicating whether the participant was in the treatment arm or the control group, $Wealth_j$ a measure of the wealth of the participant (or gender), and β_3 is the conditional Average Treatment Effect. I will use HC2 standard errors because it is equivalent to a randomization-based Neyman variance estimator (Samii 2023). Furthermore, I expect the wealthier citizens (or male) to have an average treatment effect higher than other citizens. Therefore, I will use a one-tailed test with $H1 > H0$, and $\alpha = 0.05$. As we have two hypotheses in which the estimation uses a covariate-by-treatment interaction, I have a multiple comparisons problem, and I will use the Bonferroni correction using a $\alpha = 0.025$ for both hypotheses. I expect β_1 to be negative for wealthy citizens.

B.5.5 Robustness check

To test the robustness of the analysis for hypotheses 1 to 3, I will first undertake the same analysis with a cluster standard-error at the village level. Then, I will also conduct the estimation separately for the two study areas.

C The study area, measurement strategy and summary statistics

C.1 Study area

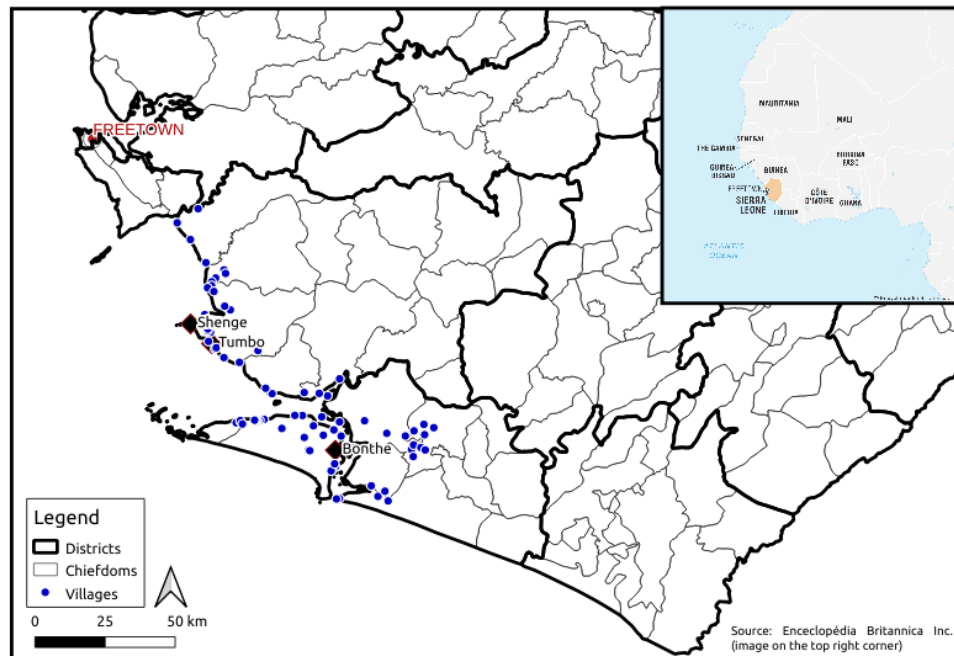


Figure C.1: Map of Sierra Leone, with a focus on the study area, blue dots are the villages sampled.

C.2 Dependent variables used in hypothesis 1 and 2

Table C.1: Table of the measurement strategy for the main dependent variables used to test the hypotheses 1 and 2

Type	Name	Survey question	Range
DV 1	Number of direct legitime sanctions	<i>[After reading one of the five experimental scenario]</i> Some members of the village reacted in this way. In your opinion, is it legitimate? <i>Among the list of six actions, select all the answers that the respondents considered as legitimate</i>	{0, 1, 2, 3, 4, 5, 6}
DV 2	Number of indirect legitime sanctions	<i>[After reading one of the five experimental scenario]</i> Some members of the village reacted in this way. In your opinion, is it legitimate? <i>Among the list of three actions, select all the answers that the respondents considered as legitimate</i>	{0, 1, 2, 3}

C.3 Independent and dependent variables used in hypotheses 3, and 4

Table C.2: Table of the measurement strategy for the main dependent and independent variables used to test the hypotheses 3 to 5

Type	Name	Survey question	Range
IV 1	Village-level direct sanctioning preferences	Average of the number of direct legitimate sanctions in each village across treatment 1 to 4	[0; 6]
IV 2	Village-level indirect sanctioning preferences	Average of the number of indirect legitimate sanctions in each village across treatment 1 to 4	[0; 3]
DV 1	Trust in the chief	Standardized Average of the answers in the household survey: "How much do you trust your village chief on a scale from one to four?"	Numeric
DV 2	Leader responsiveness	Standardized difference in support for a land deal when endorsed by the Paramount Chief compared to when supported by community members	Numeric
DV 3	Representativeness of councilors chosen by the town chief in a land planning activity	The town chief was asked to select 4 community members to participate in a land activity. We report the number of those members that are part of the town or Paramount Chief family.	Numeric
DV 4	Conflicts frequency	Standardized measure of the question: How frequent conflicts are in the village on a scale from 1 to 4?	Numeric
DV 5	Deforestation between 2015 and 2020 (6-km buffer from the village)	From vancutsem (2021), we measured the difference of primary forest cover and regrown forest between 2015 and 2020 divided by 2015 forest. The measure is standardized.	Numeric

C.4 Descriptive statistics of participants and sampled villages

Table C.3: Descriptive statistics of the participants and the sampled villages

Variable	N	mean	min	Q1	Q2	Q3	max	NA
Household level variables								
Number of legitime sanctions	907	3.27	0.00	1.00	4.00	5.00	8.00	0
Number of legitime direct sanctions	907	1.19	0.00	0.00	1.00	2.00	5.00	0
Number of legitime indirect sanctions	907	2.08	0.00	1.00	3.00	3.00	3.00	0
Annual income (log)	907	3.64	0.00	3.43	3.72	3.95	4.78	0
Wealth	907	7.66	-4.07	-0.07	5.93	11.93	72.93	0
Age	905	39.64	18.00	30.00	38.00	48.00	85.00	2
Education	890	1.48	0.00	0.00	0.00	0.00	14.00	17
Muslim	907	0.91	0.00	1.00	1.00	1.00	1.00	0
Employed	906	0.13	0.00	0.00	0.00	0.00	1.00	1
Female	907	0.37	0.00	0.00	0.00	1.00	1.00	0
Right to vote	906	0.78	0.00	1.00	1.00	1.00	1.00	1
Village level variables								
Direct sanction preferences	77	1.54	0.12	0.88	1.50	2.12	2.83	0
Indirect sanction preferences	77	2.34	0.71	1.96	2.50	2.79	3.00	0
Leader responsiveness	76	-0.84	-3.00	-2.00	-1.00	0.00	3.00	1
Annual number of community meetings	76	7.08	2.00	3.75	6.00	10.00	20.00	1
Prize for resolving local conflicts	76	3.21	0.00	3.04	3.43	3.93	5.30	1
Trust in the town chief	77	3.63	2.33	3.50	3.75	3.83	4.00	0
Inclusiveness 1	75	0.27	0.00	0.00	0.25	0.50	0.75	2
Inclusiveness 2	75	0.60	0.00	0.25	0.75	0.94	1.00	2
Deforestation rates between 2015 and 2020	76	0.06	0.00	0.03	0.05	0.07	0.27	1
Paramount-town Chief meeting frequency	77	0.71	0.00	0.00	1.00	1.00	1.00	0
Proportion of voters	77	0.78	0.25	0.67	0.83	0.92	1.00	0
Year of election	75	2012	1982	2003	2015	2020	2023	2
Population	76	220	21	113	165	265	760	1
Index of access to basic services	77	0.00	-1.30	-0.55	-0.29	0.18	4.07	0
Income inequality	77	0.00	-0.77	-0.33	-0.22	-0.04	7.27	0

Notes:

Descriptive statistics (mean, first, second, third quartile, minimum and maximum) of the main variables used to test the hypotheses. The household-level numbers of sanctions are the outcome variables used to test hypotheses 1 and 2. The other household-level variable refers to co-variates. Village-level sanctioning preferences are the two independent variables used to test hypotheses 3 and 4. The other village-level variables are either outcome variables or control variables.

C.5 Inequality between town chiefs and community members

Table C.4: Citizens and town chiefs' socio-economic characteristics and inequality measures.

	Citizens	Chiefs	Inequality
N	907	76	-
Age	39.64 (12.78)	49.41 (13.94)	12.8 -
Education (in year)	1.48 (3.47)	1.49 (3.39)	1.34 -
Number of children	3.16 (2.2)	4.11 (2.34)	1.28 -
Employed	0.13 (0.33)	0.21 (0.41)	0.18 -
Farm size (in ha)	1.91 (2.32)	2.39 (2.29)	0.76 -
House quality index	1.37 (0.91)	1.25 (1.16)	0.12 -
Material wealth index	1.35 (0.75)	0.97 (0.4)	-0.43 -
Number of livestock	8.52 (8.89)	11.77 (12.95)	5.07 -

Notes:

The citizens and chiefs columns display the average of the socio-economic indicators. Standard errors are in parenthesis. The inequality column represents the average of the difference between the chief indicator and the median of the citizen indicator in the same village.

D Covariate balances

Table D.1: Randomization integrity

	Average					Std. mean diff.		
	C	T1	T2	T3	T4	T1-C	T2-T3	T4-T1
Variable level test								
Wealth	0.09	0.06	-0.03	-0.14	0.01	-0.04	0.11	-0.04
Tenure insecurity	3.19	2.98	3.02	3.24	3.3	-0.21	-0.22	0.32
Income	-2.71	-2.67	-2.69	-2.78	-2.65	0.05	0.09	0.01
Muslim	0.89	0.91	0.9	0.91	0.91	0.02	-0.01	0
Sherbro	0.52	0.44	0.49	0.49	0.51	-0.08	0	0.08
Trust in the chief	3.72	3.56	3.62	3.59	3.63	-0.16**	0.02	0.07
Trust in others	1.31	1.3	1.28	1.29	1.31	-0.01	-0.02	0.01
Employed	0.15	0.08	0.12	0.14	0.13	-0.06*	-0.02	0.05
Female	0.4	0.34	0.38	0.39	0.35	-0.05	0	0.01
Cash emergency	0.69	0.72	0.78	0.74	0.71	0.04	0.04	-0.01
Age	37.75	39.45	43.41	39.46	38.36	1.7	3.95***	-1.09
Education	1.25	1.22	1.63	1.34	1.96	-0.02	0.29	0.74*
Voting rights	0.73	0.74	0.81	0.81	0.8	0.01	0	0.06
Global F test								
F-test						1.61	1.09	1.14
p-value						0.08 ⁺	0.37	0.33

Notes:

This table presents means across treatment arms (columns C to T4) and difference in means and two-sided t-tests for difference in means (columns T1-C to T4-T1) for a set covariates. P-values are unadjusted for multiple hypotheses testing. A global F-test and p-value are also provided at the bottom of the tables. ⁺p_i0.1, *p_i0.05, **p_i0.01, ***p_i0.001.

E Understanding of experimental scenarios

Table E.1: Total number and share of respondents who understood the experimental conditions

	Control	T1	T2	T3	T4	Total
Quantity of money stolen	192 97 %	170 96 %	177 99 %	160 94 %	162 88 %	861 95 %
Behavior of the elders	191 97 %	161 91 %	175 98 %	143 84 %	168 91 %	838 92 %

Notes:

This table displays the number and proportion of respondents who understood the experimental conditions. After answering the outcome questions, respondents were asked to recall the amount of money taken by the town chief, if any, and the behavior of the elders, if any.

F Deviation from the pre-analysis plan

This section outlines the deviations from the pre-analysis plan and provides justifications for each. The deviations are categorized into three subsections: (a) hypothesis wording, (b) measurement strategy, and (c) hypothesis testing. All modifications were made solely to enhance the precision and clarity of the analysis. Additionally, all pre-registered tests have been conducted and are reported at the end of this section, aligning with the arguments and findings presented in the main text. None of them contradicts the findings reported in the main text.

In the registered pre-analysis plan, the experiment included two scenarios: a community project and a land deal scenario. For the latter, a crucial observation made during the fieldwork stage was the inconsistency between the scenario presented and the prevailing contextual realities. Specifically, it was determined that the sale of lands, which formed the basis of the scenario, does not align with customary practices (lands can only be leased) and land transactions typically involve consultation with the Paramount Chief. Second, the scenario lacks a pure control, thus limiting the ability to isolate and assess the specific effects of the variables under investigation. As a result, in adherence to the registered pre-analysis plan, the detailed results of the land deal scenario are presented in Appendix F.5. The results align with our expectations and are consistent with those presented in the main text.

F.1 Wording of the hypotheses and deviations

Table F.1: Deviation from the pre-analysis plan regarding the wording of the hypotheses and their justifications.

	Pre-registered hypotheses	New wording	Justifications
Hyp. 1	<i>When undemocratic village leaders do not behave in the interest of the community they represent, citizens sanction them through a variety of social, economic, and political channels, preferably choosing the low cost ones</i>	Hyp. 1: Village members sanction town chiefs if they do not behave in the interest of their community. Hyp. 1a: Village members prefer sanctions with a lower costs	Pre-registered Hypothesis 1 includes two separate assertions, each of which requires independent testing. To address this, we divided the hypothesis into two parts. Additionally, we simplified the wording to enhance clarity and comprehension. The content and directional predictions of the hypothesis remain unchanged.
Hyp. 2	<i>When the council of elders takes an active role in sanctioning the chief, ordinary citizens will be less willing to take an active role in sanctioning the chief. On the contrary, when the council of elders do not take any action, citizens will sanction their chief through a variety of social, economic, and political channels. Horizontal and bottom-up accountability mechanisms would substitute for each other.</i>	Hyp. 2: Community members will be less willing to sanction the chief actively if the council of elders already blamed the chief for their action.	Pre-registered Hypothesis 2 includes unnecessary wording and confusing languages. We simplified the wording to enhance clarity and comprehension. The content and directional predictions of the hypothesis remain unchanged.
Hyp. 3	<i>Villages with a higher ability to sanction their chiefs are associated with higher responsive leaders.</i>	Hyp. 3 There is a positive correlation between village-level sanctioning preferences and levels of inclusion in participatory decision-making.	Pre-registered Hypothesis 3 uses the vague term 'responsive leader,' without specifying responsiveness to what or whom. We opted for terminology focusing on the inclusivity of participatory decision-making, which directly addresses whose interests are considered and aligns with the concept of responsiveness.
Hyp. 4	<i>Villages with a higher ability to sanction their chiefs are associated with higher leadership quality</i>		Pre-registered Hypothesis 4 employs the ambiguous term 'leadership quality.' Since responsiveness to the demands of a majority of constituents can be interpreted as a characteristic of leadership quality, Hypothesis 4 has been incorporated into the revised wording of Hypothesis 3.
Hyp. 5	<i>Villages with a higher ability to sanction their chiefs are associated with lower deforestation rates</i>	Hyp. 4 Villages with stronger sanctioning preferences have higher provision of public goods.	Pre-registered Hypothesis 5 focuses exclusively on forest conservation as a public good. Given the limited role of town chiefs in this domain—where paramount chiefs hold greater authority—we broadened the terminology to encompass a wider range of public goods (e.g., peace) for more comprehensive testing.

F.2 Measurement analysis and deviations

Table F.2: Deviation from the pre-analysis plan regarding the measurement strategy and their justifications

	Pre-registered measurement	Deviations	Justifications
INDEPENDENT VARIABLES			
Hyp. 1	Treatment 1 vs. Control	<i>None</i>	
Hyp. 2	Treatment 2 vs. Treatment 3	<i>None</i>	
Hyp. 3 to 5	Village level accountability index	Instead of computing one village-level accountability index, we compute the index separately for direct and indirect sanctions. The Appendix shows the results for the pre-registered specification	The theoretical section posits that direct and indirect sanctions may elicit different responses from town chiefs. For example, increased reliance on higher authorities to discipline town chiefs might result in local leaders becoming more accountable to those higher authorities than to their community members.
DEPENDENT VARIABLES			
Hyp. 1	General sanctioning index and a Sanctioning index by costs (high vs. low)	General sanctioning index, sanctioning index by type (indirect vs. direct) and sanctioning index by costs (high vs. low)	We introduce the distinction between indirect and direct sanctions, as they are theoretically significant and should be conceptually separated.
Hyp. 2	General sanctioning index and a Sanctioning index by costs (high vs. low)	General sanctioning index, sanctioning index by type (indirect vs. direct) and sanctioning index by costs (high vs. low)	We introduce the distinction between indirect and direct sanctions, as they are theoretically significant and should be conceptually separated.
Hyp. 3	A proxy of leader responsiveness is used measured by the responses from a survey experiment	The measure is only included in the appendix.	The measure is excluded from the main text because the scenario was based on a misunderstanding of the context. The town chief does not have the authority to sell land. As a result, the experiment and the measurement fail to capture the intended concept.
Hyp. 4	Four variables: 1) how much does community members trust the chief, 2) the number of annual community meetings, 3) the cost for resolving a conflict, 4) and how representative leaders chosen by the chief to conduct a land planning activity are. The latter is measured by the number of those leaders selected by the village leader part of its own family	We include only the fourth variable in the main text how representative leaders are in the land planning activity. The other measures are reported in the Appendix.	The fourth variable is a real-world behavioral measure derived from a framed field experiment. This measurement has the advantage of being much more accurate than traditional self-reported measures.
Hyp. 5	Deforestation rates from 2015 to 2020 in a 6 km radius from the center of villages	Deforestation rates from 2015 to 2020 in a 6 km radius from the center of villages and conflict frequency reported by the town chief	We included a measure of conflict frequency as the primary role of the town chief is to resolve conflicts within the village, and Sierra Leone has a history of local conflicts that contributed to the civil war in the 1990s.

F.3 Empirical strategy and deviations

Table F.3: Deviation from the pre-analysis plan regarding the measurement strategy and their justifications

	Pre-registered specification	Deviations	Justifications
Hyp. 1	$GSI_j = \beta_0 + \beta_1 Z_j + \epsilon_j$	$GSI_j = \beta_0 + \beta_1 Z_j + \gamma_g + \gamma_v + \epsilon_j$	We add experimental block fixed effects, procedure called precision weighting. Gerber et al. Gerber & Green (2012) show that such a procedure increases precision. As our sample size is somewhat limited, below 1000 respondents for 5 experimental conditions, it is likely to be a more efficient strategy. The pre-registered strategy is also reported in the Appendix and yield to similar result.
Hyp. 2	$GSI_j = \beta_0 + \beta_1 Z_j + \epsilon_j$	$GSI_j = \beta_0 + \beta_1 Z_j + \gamma_g + \gamma_v + \epsilon_j$	We add experimental block fixed effects, procedure called precision weighting. Gerber et al. Gerber & Green (2012) show that such a procedure increases precision. As our sample size is somewhat limited, below 1000 respondents for 5 experimental conditions, it is likely to be a more efficient strategy. The pre-registered strategy is also reported in the Appendix and yield to similar result.
Hyp. 3 to 5	$Y_k = \beta_0 + \beta_1 accindex_k + \beta_2 X_k \epsilon_k$	None	

F.4 Pre-Registered and Main Text Results Overview

Table F.4: Table of the main deviation from the pre-analysis plan. The pre-registered hypotheses are laid out with their results using the specification described in the pre-analysis plan.

Pre-registered hypotheses	Test	PAP	p-values Main text specification	
H1: When undemocratic village leaders do not behave in the interest of the community they represent, citizens sanction them through a variety of social, economic, and political channels, preferably choosing the low cost ones	$H_1 > H_0$	$p < .01$	$p < .01$	
H2: When the council of elders takes an active role in sanctioning the chief, ordinary citizens will be less willing to take an active role in sanctioning the chief. On the contrary, when the council of elders do not take any action, citizens will sanction their chief through a variety of social, economic, and political channels. Horizontal and bottom-up accountability mechanisms would substitute for each other.	$H_1 < H_0$	$p < .95$	$p < .99$	
			Direct sanctions	Indirect sanctions
H3: Villages with a higher ability to sanction their chiefs are associated with higher responsive leaders.	$H_1 > H_0$	(1) $p < .4$ (2) $p < .61$	(1) $p < .92$ (2) $p < .12$	(1) $p < .15$ (2) $p < .75$
H4: Villages with a higher ability to sanction their chiefs are associated with higher leadership quality	$H_1 > H_0$	(1) $p < .52$ (2) $p < .74$ (3) $p < .69$ (4) $p < .01$	(1) $p < .67$ (2) $p < .21$ (3) $p < .82$ (4) $p < .33$	(1) $p < .82$ (2) $p < .70$ (3) $p < .86$ (4) $p < .04$
H5: Villages with a higher ability to sanction their chiefs are associated with lower deforestation rates	$H_1 < H_0$	(1) $p < .29$	$p < .31$	$p < .12$

F.5 Main results using the land deal survey experiment

In the registered pre-analysis plan, two scenarios were mentioned: a community project and a land deal scenario. For the latter, a crucial observation made during the fieldwork stage was the inconsistency between the scenario presented and the prevailing contextual realities. Specifically, it was determined that the sale of lands, which formed the basis of the scenario, does not align with customary practices (lands can only be leased) and land transactions typically involve consultation with the Paramount Chief. Second, the scenario lacks a pure control, thus limiting the ability to isolate and assess the specific effects of the variables under investigation. As a result, in adherence to the registered pre-analysis plan, the detailed results of the land deal scenario are presented in the appendices for reference. The results remain consistent with the one reported in the main text. More specifically, the scenarios were as followed:

- **Control arm:** *In a village in Sierra Leone, villagers' livelihood was strongly tied to forest resources. The town chief, in consultation with landowning families, sells a small part of the forested land for a conservation project. The land sold could not be used anymore by villagers.*
- **Treatment 1:** *In a village in Sierra Leone, villagers' livelihood was strongly tied to forest resources. The town chief, in consultation with landowning families, sells most of the forested land for a conservation project. The land sold could not be used anymore by villagers.*
- **Treatment 2:** *In a village in Sierra Leone, villagers' livelihood was strongly tied to forest resources. The town chief, in consultation with landowning families, sells most of the forested land for a conservation project. The land sold could not be used anymore by villagers. The elders in the village went to the chiefs and sermoned him.*
- **Treatment 3:** *In a village in Sierra Leone, villagers' livelihood was strongly tied to forest resources. The town chief, in consultation with landowning families, sells most of the forested land for a conservation project. The land sold could not be used anymore by villagers. The elders in the village did not sermon the chief.*

Test for hypothesis 1

Table F.5: Average treatment effects of chief malevolence on the total number of legitimate sanctions, of direct and indirect sanctions during the land deal survey experiment

	Number of legitimate sanction					
	General		Direct		Indirect	
	(1)	(2)	(3)	(4)	(5)	(6)
Treatment	0.58*** (0.17)	0.63*** (0.17)	0.41*** (0.10)	0.45*** (0.09)	0.17 (0.11)	0.19+ (0.10)
Control mean	3.18	3.18	0.991	0.991	2.19	2.19
DV range	{0, 9}		{0, 6}		{0, 3}	
Block FE	No	Yes	No	Yes	No	Yes
Adj. R ²	0.02	0.14	0.04	0.18	0.00	0.13
Num. obs.	441	441	441	441	441	441

Notes:

Three outcome variables are used: the total sum of sanctions considered as legitimate (column 1 and 2), the total sum of direct sanctions considered as legitimate (column 3 and 4) and the total sum of indirect sanctions considered as legitimate (column 5 and 6). Treatment refers to a dummy comparing the scenario where the town chief sells half of the forested land for a conservation project compared to a scenario where the chief sells only a small part. The specification from the pre-analysis plan is used in column 1, 3, and 5. Village and block fixed effects are added in column 2, 4, and 6. Robust standard errors in parenthesis. *** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$; + $p < 0.1$

Test of the hypothesis 2

Table F.6: Average treatment effects of elders blaming the town chief on the total number of legitime sanctions, of direct and indirect sanctions during the land deal survey experiment

	Number of legitime sanction					
	General		Direct		Indirect	
	(1)	(2)	(3)	(4)	(5)	(6)
Treatment	0.15 (0.16)	0.15 (0.16)	0.01 (0.09)	0.01 (0.09)	0.13 (0.10)	0.14 (0.10)
Control mean	3.69	3.69	1.28	1.28	2.42	2.42
DV range	{0, 9}		{0, 6}		{0, 3}	
Block FE	No	Yes	No	Yes	No	Yes
Adj. R ²	−0.00	0.00	−0.00	0.05	0.00	0.04
Num. obs.	413	413	413	413	413	413

Notes:

Three outcome variable are used: the total sum of sanctions considered as legitimate (column 1 and 2), the total sum of direct sanctions considered as legitimate (column 3 and 4) and the total sum of indirect sanctions considered as legitimate (column 5 and 6). Treatment refers to a dummy comparing the scenario where the town chief sells half of the forested land for a conservation project and the elders do blame the chief compared to a scenario where the chief sells half of the forested land and the elders do not blame the chief. The specification from the pre-analysis plan is used in column 1, 3, and 5. Village and block fixed effects are added in column 2, 4, and 6. Robust standard errors in parenthesis. *** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$; + $p < 0.1$

G Open-question outcome summary

Table G.1: Categorized Responses to the Open Question - What Would You Do in a Similar Situation?

Variable	N	Frequency	Percentage
Collective Actions			
Mobilize citizens	404	13	3 %
Town meetings	404	5	1 %
Direct actions			
Force give back money	404	80	20 %
Blame directly	404	49	12 %
Refuse to take orders	404	17	4 %
Vote against him	404	5	1 %
Attack the chief	404	4	1 %
Remove him from the project	404	3	1 %
Stop working for him	404	2	0 %
Fine him	404	1	0 %
Indirect actions			
Report to elders	404	97	24 %
Report to Paramount Chief	404	55	14 %
Report to Section Chief	404	53	13 %
Report to higher authorities	404	48	12 %
Report to village authorities	404	41	10 %
Ask for suspension	404	40	10 %
Report to police	404	16	4 %
Bring case to court	404	10	2 %
Report to NGO	404	8	2 %
No actions			
No actions	404	71	18 %
Preference for the chief giving back the money	404	37	9 %
Not understandable	404	1	0 %

Notes:

For half of the sample (N=404), after receiving the scenario, we asked an open question: What would you do in a similar situation? We categorized the actions into the categories reported in the table with the absolute and relative frequency.

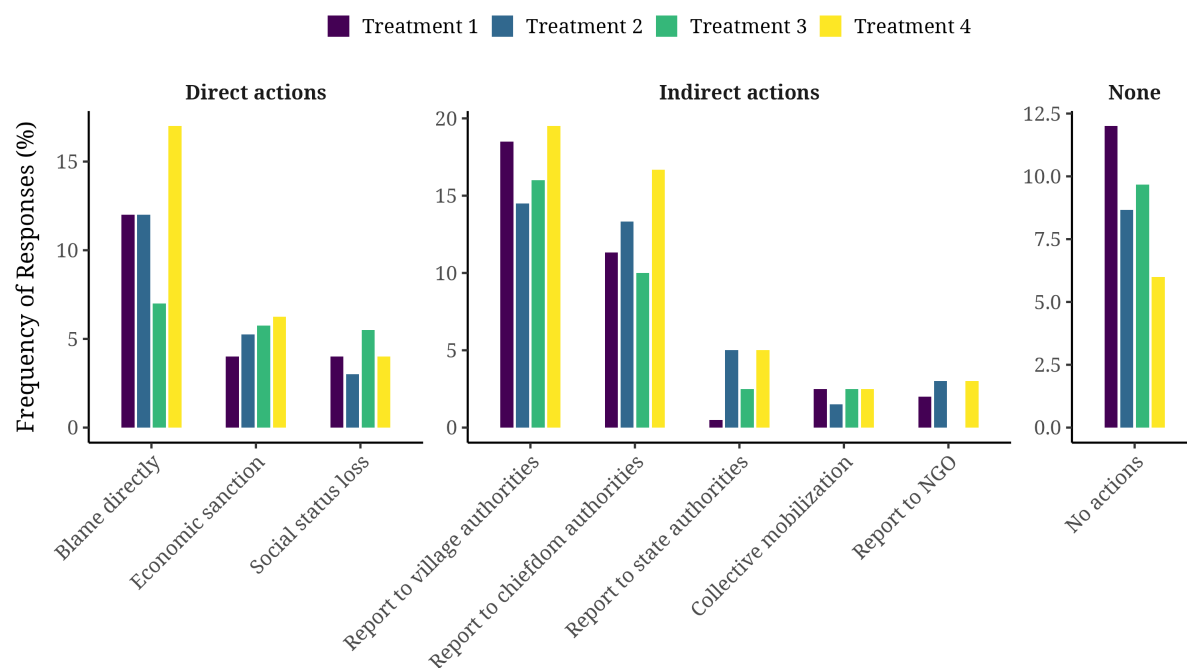


Figure G.1: Categorized Responses grouped to the Open Question ‘What Would You Do in a Similar Situation?’ by scenario

H Treatment effects on outcome 1 and 2

H.1 Outcome 1: Agreement with Chief's Behavior

Treatment 1 vs. Control arm

Table H.1: Treatment effects on how much respondents disagree with the chief's behavior

	Disagree with chiefs behavior			
	(1)	(2)	(3)	(4)
Treatment	2.83*** (0.11)	2.85*** (0.11)	2.85*** (0.11)	2.81*** (0.11)
Control mean	1.46	1.46	1.46	1.51
DV range		{1, 2, 3, 4, 5}		
Block FE	No	Yes	Yes	Yes
Observations	362	362	362	374
R ²	0.64	0.69	0.69	0.68

Notes:

The outcome variable refers to a 1-5 scale about how much citizens disagree with chiefs' behavior. The table shows the analysis comparing the treatment 1 with the control group. The treatment 1 refers to a scenario where the chief takes a small part of the money for his own benefit. Robust standard errors in parenthesis. Column 1 refers to the empirical specification from the pre-analysis plan. Block fixed effects are used in column 2, 3, and 4. Robust cluster standard errors at the village level are used in column 3. Column 4 represents the specification where no observations were dropped. *** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$; + $p < 0.1$.

Treatment 2 vs. Treatment 3

Table H.2: Treatment effects on how much respondents disagree with the chief's behavior

	Disagree with chiefs behavior			
	(1)	(2)	(3)	(4)
Treatment	0.07 (0.1)	0.15 ⁺ (0.08)	0.15 ⁺ (0.08)	0.07 (0.08)
Control mean	4.42	4.42	4.42	4.43
DV range		{1, 2, 3, 4, 5}		
Block FE	No	Yes	Yes	Yes
Observations	310	310	310	349
R ²	0.001	0.21	0.21	0.22

Notes:

The outcome variable refers to a 1-5 scale about how much citizens disagree with chiefs' behavior. The table shows the analysis comparing the treatment 2 with the treatment 3. The treatment 2 refers to a scenario where the chief takes a small part of the money for his own benefit with the elders sermoning the chief. The treatment 3 refers to a scenario where the chief takes a small part of the money for his own benefit with the elders did not sermon the chief. Robust standard errors in parenthesis. Column 1 refers to the empirical specification from the pre-analysis plan. Block fixed effects are used in column 2, 3, and 4. Robust cluster standard errors at the village level are used in column 3. Column 4 represents the specification where no observations were dropped. *** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$; + $p < 0.1$.

Treatment 4 vs. Treatment 1

Table H.3: Treatment effects on how much respondents disagree with the chief's behavior

	Disagree with chiefs behavior			
	(1)	(2)	(3)	(4)
Treatment	0.46*** (0.09)	0.45*** (0.08)	0.45*** (0.07)	0.37*** (0.08)
Control mean	4.29	4.29	4.29	4.32
DV range		{1, 2, 3, 4, 5}		
Block FE	No	Yes	Yes	Yes
Observations	332	332	332	361
R ²	0.07	0.29	0.29	0.27

Notes:

The outcome variable refers to a 1-5 scale about how much citizens disagree with chiefs' behavior. The table shows the analysis comparing the treatment 4 with the treatment 1. The treatment 4 refers to a scenario where the chief takes half of the money for his own benefit. The treatment 1 refers to a scenario where the chief takes a small part of the money for his own benefit. Robust standard errors in parenthesis. Column 1 refers to the empirical specification from the pre-analysis plan. Block fixed effects are used in column 2, 3, and 4. Robust cluster standard errors at the village level are used in column 3. Column 4 represents the specification where no observations were dropped. *** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$; + $p < 0.1$.

H.2 Outcome 2: Should Citizens Take Action?

Treatment 1 vs. Control arm

Table H.4: Treatment effects on how much respondents disagree with the chief's behavior

	Citizens should take action			
	(1)	(2)	(3)	(4)
Treatment	0.74*** (0.04)	0.75*** (0.03)	0.75*** (0.04)	0.74*** (0.03)
Observations	362	362	362	374
R ²	0.56	0.64	0.64	0.62
Control mean	0.06	0.06	0.06	0.07
DV range		{0, 1}		
Block FE	No	Yes	Yes	Yes

Notes:

The outcome variable refers to a dummy indicating whether the respondent think that the citizens of that village should take any action against the town chief. The table shows the analysis comparing the treatment 1 with the control arm. The treatment 1 refers to a scenario where the chief takes a small part of the money for his own benefit. Robust standard errors in parenthesis. Column 1 refers to the empirical specification from the pre-analysis plan. Block fixed effects are used in column 2, 3, and 4. Robust cluster standard errors at the village level are used in column 3. Column 4 represents the specification where no observations were dropped. *** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$; + $p < 0.1$.

Treatment 2 vs. Treatment 3

Table H.5: Treatment effects on how much respondents disagree with the chief's behavior

	Citizens should take action			
	(1)	(2)	(3)	(4)
Treatment	0.02 (0.04)	0.04 (0.03)	0.04 (0.03)	0.03 (0.03)
Control mean	0.87	0.87	0.87	0.86
DV range		{0, 1}		
Block FE	No	Yes	Yes	Yes
Observations	310	310	310	349
R ²	0	0.25	0.25	0.27

Notes:

The outcome variable refers to a dummy indicating whether the respondent think that the citizens of that village should take any action against the town chief. The table shows the analysis comparing the treatment 2 with the treatment 3. The treatment 2 refers to a scenario where the chief takes a small part of the money for his own benefit with the elders sermoning the chief. The treatment 3 refers to a scenario where the chief takes a small part of the money for his own benefit with the elders did not sermon the chief. Robust standard errors in parenthesis. Column 1 refers to the empirical specification from the pre-analysis plan. Block fixed effects are used in column 2, 3, and 4. Robust cluster standard errors at the village level are used in column 3. Column 4 represents the specification where no observations were dropped. *** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$; + $p < 0.1$.

Treatment 4 vs. Treatment 1

Table H.6: Treatment effects on how much respondents disagree with the chief's behavior

	Citizens should take action			
	(1)	(2)	(3)	(4)
Treatment	0.15*** (0.04)	0.15*** (0.03)	0.15*** (0.03)	0.12*** (0.03)
Control mean	0.79	0.79	0.79	0.8
DV range		{0, 1}		
Block FE	No	Yes	Yes	Yes
Observations	332	332	332	361
R ²	0.05	0.25	0.25	0.27

Notes:

The outcome variable refers to a dummy indicating whether the respondent think that the citizens of that village should take any action against the town chief. The table shows the analysis comparing the treatment 4 with the treatment 1. The treatment 4 refers to a scenario where the chief takes half of the money for his own benefit. The treatment 1 refers to a scenario where the chief takes a small part of the money for his own benefit. Robust standard errors in parenthesis. Column 1 refers to the empirical specification from the pre-analysis plan. Block fixed effects are used in column 2, 3, and 4. Robust cluster standard errors at the village level are used in column 3. Column 4 represents the specification where no observations were dropped. *** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$; + $p < 0.1$.

I Robustness check for the statistical test of hypotheses 1 and 2

I.1 Comparison of treatment 1 with the control arm

Table I.1: Robustness check for hypothesis 1 comparing the treatment 1 with the control arm. Treatment effects on the total number of legitime sanctions, the number of direct and indirect legitime sanctions.

<i>Outcome: total sum of legitime sanctions</i>				
	(1)	(2)	(3)	(4)
Treatment	3.07*** (0.17)	3.14*** (0.24)	3.20*** (0.24)	3.04*** (0.23)
Control mean	0.59	0.59	0.59	0.65
Adj. R ²	0.48	0.57	0.57	0.54
Number of observations	362	362	362	374
<i>Outcome: sum of direct legitime sanctions</i>				
	(1)	(2)	(3)	(4)
Treatment	1.16*** (0.09)	1.20*** (0.12)	1.18*** (0.12)	1.15*** (0.12)
Control mean	0.10	0.10	0.10	0.13
Adj. R ²	0.34	0.41	0.41	0.38
Number of observations	362	362	362	374
<i>Outcome: sum of indirect legitime sanctions</i>				
	(1)	(2)	(3)	(4)
Treatment	1.90*** (0.11)	1.93*** (0.14)	2.02*** (0.13)	1.89*** (0.14)
Control mean	0.49	0.49	0.49	0.52
Adj. R ²	0.44	0.59	0.61	0.57
Number of observations	362	362	362	374
Block FE	No	Yes	Yes	Yes
Cluster SE	No	Yes	Yes	Yes
Covariates	No	No	Yes	No
Observation dropped	Yes	Yes	Yes	No

Notes:

Treatment tests treatment 1 against the control group with the treatment 1 being the scenario where the chiefs take a small part of the money for its own benefit. Four robustness check strategies are used. The first column is the PAP empirical strategy without block fixed effects. The second column uses cluster robust standard error at the village level. The third column adds covariates that were not balanced (employment rates and trust to the chief), and the fourth column adds respondents that did not understand the scenario. Village and block fixed effects are used in the last three columns. Robust standard errors in parenthesis. *** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$; + $p < 0.1$.

I.2 Comparison of treatment 4 with the treatment 1

Table I.2: Robustness check for hypothesis 1 comparing the treatment 4 with the treatment 1. Treatment effects on the total number of legitime sanctions, the number of direct and indirect legitime sanctions.

<i>Outcome: total sum of legitime sanctions</i>				
	(1)	(2)	(3)	(4)
Treatment	0.86*** (0.18)	0.70*** (0.14)	0.65*** (0.14)	0.54*** (0.13)
Control mean	3.66	3.66	3.66	3.64
Adj. R ²	0.06	0.45	0.43	0.44
Number of observations	332	332	324	361
<i>Outcome: sum of direct legitime sanctions</i>				
	(1)	(2)	(3)	(4)
Treatment	0.46*** (0.12)	0.33** (0.11)	0.28* (0.11)	0.27* (0.10)
Control mean	1.26	1.26	1.26	1.25
Adj. R ²	0.04	0.35	0.34	0.34
Number of observations	332	332	324	361
<i>Outcome: sum of indirect legitime sanctions</i>				
	(1)	(2)	(3)	(4)
Treatment	0.40*** (0.09)	0.37*** (0.08)	0.37*** (0.08)	0.27*** (0.08)
Control mean	2.39	2.39	2.39	2.40
Adj. R ²	0.05	0.33	0.33	0.29
Number of observations	332	332	324	361
Block FE	No	Yes	Yes	Yes
Cluster SE	No	Yes	Yes	Yes
Covariates	No	No	Yes	No
Observation dropped	Yes	Yes	Yes	No

Notes:

Treatment tests treatment 4 against the treatment 1 with the treatment 4 being the scenario where the chiefs take half of the money for its own benefit and treatment 1 where the chiefs take only a small part of the money of its own benefit. Four robustness check strategies are used. The first column is the PAP empirical strategy without block fixed effects. The second column uses cluster robust standard error at the village level. The third column adds covariates that were not balanced (education level), and the fourth column adds respondents that did not understand the scenario. Village and block fixed effects are used in the last three columns. Robust standard errors in parenthesis. *** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$; + $p < 0.1$.

I.3 Sensitivity analysis to experimenter demand effect (EDE) - hypothesis 1

de Quidt et al. (2018) bound the experimenter demand effect from 0.1 to 0.3 standard deviation of the outcome variable. As a consequence, we used three sensitivity analysis. We standardized the outcome variable and reduce of respectively 0.1, 0.2, and 0.3 the measured outcome in the treatment group to account for potential experimenter demand effect.

Table I.3: Sensitivity analysis to different strength of experimenter demand effect (EDE) for hypothesis 1 comparing the treatment 1 with the control arm.

	<i>Outcome: total sum of legitime sanctions</i>			
	(1)	(2)	(3)	(4)
Treatment	1.46*** (0.11)	1.36*** (0.11)	1.26*** (0.11)	1.16*** (0.11)
Strength of the EDE (in std. dev.)	0	0.1	0.2	0.3
Adj. R ²	0.57	0.54	0.50	0.47
Num. obs.	362	362	362	362

Notes:

Treatment tests treatment 1 against the control group with the treatment 1 being the scenario where the chiefs take a small part of the money for its own benefit. Three sensitivity analysis are used (column 2 to 4). The first column is the main empirical strategy with the outcome variable being standardized. The second, third and fourth column use an experimenter demand effect of 0.1, 0.2, and 0.3 standard deviation respectively. Cluster robust standard error at the village level. Village and block fixed effects are used in the last three columns.

*** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$; + $p < 0.1$.

I.4 Robustness check for the statistical test of hypotheses 2

Table I.4: Robustness check for hypothesis 2 comparing the treatment 2 with the treatment 3. Treatment effects on the total number of legitime sanctions, the number of direct and indirect legitime sanctions.

<i>Outcome: total sum of legitime sanctions</i>				
	(1)	(2)	(3)	(4)
Treatment	0.31 (0.19)	0.48** (0.17)	0.47** (0.18)	0.37* (0.17)
Control mean	3.84	3.84	3.84	3.81
Adj. R ²	0.01	0.37	0.37	0.34
Number of observations	310	310	309	349
<i>Outcome: sum of direct legitime sanctions</i>				
	(1)	(2)	(3)	(4)
Treatment	0.10 (0.13)	0.19 (0.14)	0.18 (0.14)	0.13 (0.13)
Control mean	1.44	1.44	1.44	1.44
Adj. R ²	−0.00	0.18	0.17	0.18
Number of observations	310	310	309	349
<i>Outcome: sum of indirect legitime sanctions</i>				
	(1)	(2)	(3)	(4)
Treatment	0.21 ⁺ (0.11)	0.29** (0.09)	0.30** (0.09)	0.24** (0.09)
Control mean	2.40	2.40	2.40	2.36
Adj. R ²	0.01	0.35	0.35	0.29
Number of observations	310	310	309	349
Block FE	No	Yes	Yes	Yes
Cluster SE	No	Yes	Yes	Yes
Covariates	No	No	Yes	No
Observation dropped	Yes	Yes	Yes	No

Notes:

Treatment tests treatment 2 against the treatment 3. The treatment 2 is a scenario where the elders did blame the town chief. The treatment 3 is a scenario where the elders did not blame the town chief. Four robustness check strategies are used. The first column is the PAP empirical strategy without block fixed effects. The second column uses cluster robust standard error at the village level. The third column adds covariates that were not balanced (education level), and the fourth column adds respondents that did not understand the scenario. Village and block fixed effects are used in the last three columns. Robust standard errors in parenthesis. *** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$; ⁺ $p < 0.1$.

I.5 Sensitivity analysis to experimenter demand effect (EDE) - hypothesis 2

de Quidt et al. (2018) bound the experimenter demand effect from 0.1 to 0.3 standard deviation of the outcome variable. As a consequence, we used three sensitivity analysis. We standardized the outcome variable and reduce of respectively 0.1, 0.2, and 0.3 the measured outcome in the treatment group to account for potential experimenter demand effect.

Table I.5: Sensitivity analysis to different strength of experimenter demand effect (EDE) for hypothesis 2 comparing the treatment 2 with the treatment 3.

	<i>Outcome: total sum of legitime sanctions</i>			
	(1)	(2)	(3)	(4)
Treatment	0.22** (0.08)	0.12 (0.08)	0.02 (0.08)	−0.08 (0.08)
Strength of the EDE (in std. dev.)	0	0.1	0.2	0.3
Adj. R ²	0.37	0.37	0.37	0.37
Num. obs.	310	310	310	310

Notes:

Treatment tests treatment 2 against the treatment 3. The treatment 2 is a scenario where the elders did blame the town chief. The treatment 3 is a scenario where the elders did not blame the town chief. Four robustness check strategies are used. The first column is the main empirical strategy with the outcome variable being standardized. Three sensitivity analysis are used (column 2 to 4). The second, third and fourth column use an experimenter demand effect of 0.1, 0.2, and 0.3 standard deviation respectively. Cluster robust standard error at the village level. Village and block fixed effects are used in the last three columns. *** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$; + $p < 0.1$.

J Relative costs and legitimacy of sanctions

J.1 Summary statistics of the outcomes of the focus group discussions

We deployed five focus group discussions with elders of the communities in various villages of the study area. During these focus group discussions they were asked to give a costs associated to the 9 sanctions understudy. The average cost is displayed for each sanction in the following table.

Table J.1: Table of the cost of sanctions

Sanction	Cost
Indirect sanctions	
Complain to the elders	2.25
Complain to the Section Chief	-
Complain to the Paramount Chief	1.25
Direct sanctions	
Blame the chief directly	1.25
Threaten the chief directly	4.5
Refuse to get married to the chief family	5
Refuse to pay local taxes	5
Refuse to work for the chief	2.25
Refuse to participate to collective labour	3.75

Notes:

The table represents the average costs of sanctions measured on a 1 to 5 scale, 5 being high cost. The measure comes from focus groups discussions undertaken by elders in 4 communities. The measure does not include complain to the section chief.

J.2 Relationships between legitimacy of the sanctions and perceived costs

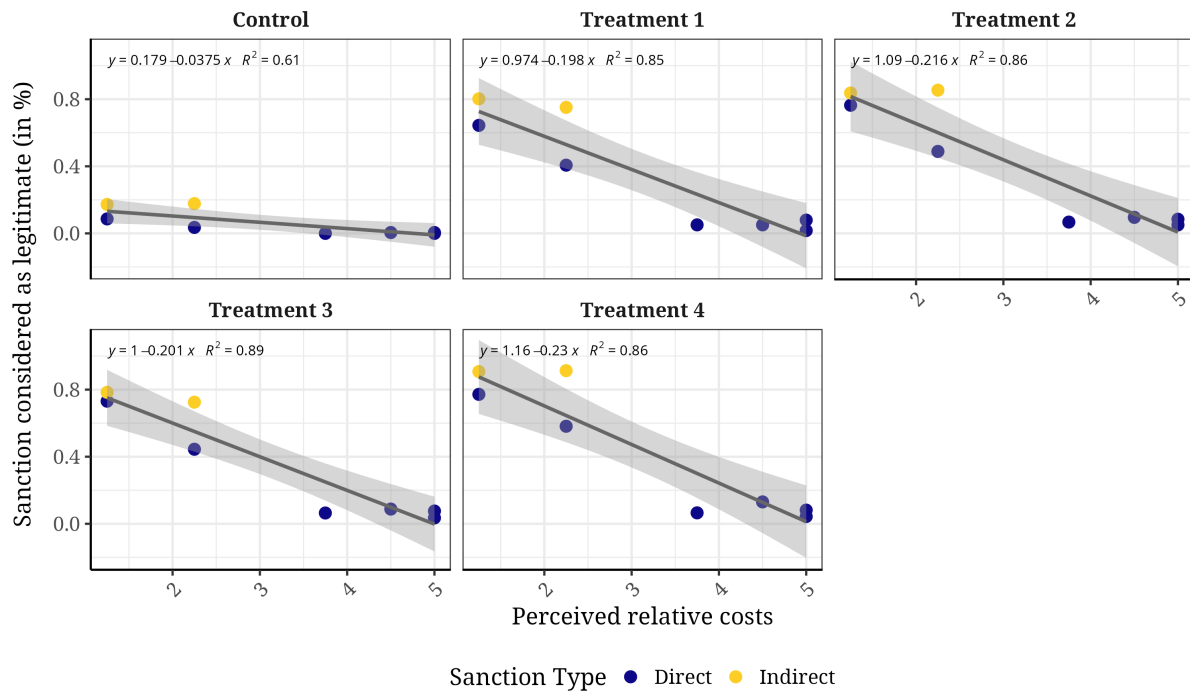


Figure J.1: Statistical association between the perceived costs of sanctions and their average legitimacy by treatment conditions.

Note: The graphic displays the statistical association between the perceived costs of sanctions and their average legitimacy across treatment conditions. Each dot represents one of the eight sanction types for which perceived cost was assessed. The fitted line and model are also shown.

J.3 Statistical test of hypothesis 1a

Table J.2: Statistical tests for the impact of sanction type on the probability of being chosen

	Outcome: sanction as legitimate (in %)	
	(1)	(2)
Indirect sanctions	0.50*** (0.06)	0.23** (0.07)
Treatment 1	0.33*** (0.09)	0.29** (0.09)
Treatment 2	0.39*** (0.10)	0.34*** (0.09)
Treatment 3	0.35*** (0.10)	0.31** (0.09)
Treatment 4	0.42*** (0.11)	0.38*** (0.10)
Costs		-0.14*** (0.02)
Observations	45	40
Adj. R ²	0.59	0.82

Notes:

The table represents the results of a statistical test for hypothesis 1a stating that less costly sanctions are less likely to be chosen. The outcome variable is the proportion of respondents considering the sanction as legitimate in each treatment arm. Indirect sanctions is a dummy being one when the sanction type is indirect. Four treatment dummies are integrated. Finally, the costs of each sanction is also integrated.

*** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$; + $p < 0.1$

K Heterogeneous effect by gender, income, and voting rights

K.1 Gender

Table K.1: Heterogeneous treatment effects on the number of legitime sanctions by gender

	General		Direct		Indirect	
	(1)	(2)	(3)	(4)	(5)	(6)
T1-C	3.14*** (0.16)	3.49*** (0.18)	1.22*** (0.09)	1.33*** (0.11)	1.93*** (0.10)	2.16*** (0.11)
T4-C	3.89*** (0.14)	4.10*** (0.18)	1.57*** (0.09)	1.71*** (0.11)	2.31*** (0.08)	2.39*** (0.10)
Female		0.28 (0.22)		0.12 (0.10)		0.16 (0.14)
T1-C * Female		-1.00** (0.35)		-0.33 ⁺ (0.19)		-0.67** (0.22)
T4-C * Female		-0.55 ⁺ (0.31)		-0.35 ⁺ (0.21)		-0.20 (0.17)
Adj. R ²	0.63	0.64	0.45	0.45	0.65	0.66
Num. obs.	524	524	524	524	524	524

Notes: Three outcome variables are used: general, direct and indirect number of legitimate sanctions. General is the total sum of sanctions considered as legitimate. Direct is the sum of sanctions considered as legitimate targeting directly the chief. Indirect is the sum of sanctions considered as legitimate targeting an higher authority. T1-C tests Treatment 1, where the quantity of money stolen is very small vs the control group, and T4-C tests Treatment 4, where the half of the money was stolen vs Treatment 1. The models include a factor for the treatment comparison and a dummy for gender. Village and block fixed effects are used. Robust standard errors in parenthesis. *** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$; ⁺ $p < 0.1$.

K.2 Income

Table K.2: Heterogeneous treatment effects on the number of legitimate sanctions by income

	General		Direct		Indirect	
	(1)	(2)	(3)	(4)	(5)	(6)
T1-C	3.14*** (0.16)	4.04*** (0.30)	1.22*** (0.09)	1.64*** (0.16)	1.93*** (0.10)	2.40*** (0.19)
T4-C	3.89*** (0.14)	4.48*** (0.23)	1.57*** (0.09)	1.72*** (0.15)	2.31*** (0.08)	2.76*** (0.13)
income (Q2)		0.58 ⁺ (0.31)		0.29 ⁺ (0.15)		0.28 (0.18)
income (Q3)		0.69* (0.31)		0.31 ⁺ (0.16)		0.38* (0.19)
income (Q4)		1.15*** (0.32)		0.52*** (0.16)		0.63** (0.22)
T1-C * income (Q2)		-0.88 ⁺ (0.45)		-0.49* (0.24)		-0.39 (0.28)
T4-C * income (Q2)		-0.41 (0.41)		-0.00 (0.28)		-0.40 ⁺ (0.22)
T1-C * income (Q3)		-1.24** (0.43)		-0.52* (0.23)		-0.72** (0.27)
T4-C * income (Q3)		-1.10** (0.36)		-0.41 ⁺ (0.23)		-0.69** (0.22)
T1-C * income (Q4)		-1.53*** (0.44)		-0.75** (0.25)		-0.78** (0.28)
T4-C * income (Q4)		-0.87* (0.41)		-0.20 (0.26)		-0.67** (0.24)
Adj. R ²	0.63	0.64	0.45	0.46	0.65	0.66
Num. obs.	524	518	524	518	524	518

Notes: Three outcome variables are used: general, direct and indirect number of legitimate sanctions. General is the total sum of sanctions considered as legitimate. Direct is the sum of sanctions considered as legitimate targeting directly the chief. Indirect is the sum of sanctions considered as legitimate targeting an higher authority. T1-C tests Treatment 1, where the quantity of money stolen is very small vs the control group, and T4-C tests Treatment 4, where the half of the money was stolen vs Treatment 1. The models include a factor for the treatment comparison and a factor for the income category classified into four quartiles. Village and block fixed effects are used. Robust standard errors in parenthesis. *** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$; ⁺ $p < 0.1$.

K.3 Voting rights

Table K.3: Heterogeneous treatment effects on the number of legitime sanctions by voting right

	General		Direct		Indirect	
	(1)	(2)	(3)	(4)	(5)	(6)
T1-C	3.14*** (0.16)	2.05*** (0.33)	1.22*** (0.09)	0.53** (0.16)	1.93*** (0.10)	1.51*** (0.22)
T4-C	3.89*** (0.14)	2.97*** (0.32)	1.57*** (0.09)	0.93*** (0.22)	2.31*** (0.08)	2.05*** (0.19)
Right to vote		-0.76** (0.27)		-0.44*** (0.13)		-0.32+ (0.16)
T1-C * Right to vote		1.50*** (0.39)		0.93*** (0.20)		0.57* (0.25)
T4-C * Right to vote		1.22*** (0.36)		0.85*** (0.26)		0.36+ (0.21)
Adj. R ²	0.63	0.64	0.45	0.47	0.65	0.65
Num. obs.	524	524	524	524	524	524

Notes: Three outcome variables are used: general, direct and indirect number of legitimate sanctions. General is the total sum of sanctions considered as legitimate. Direct is the sum of sanctions considered as legitimate targeting directly the chief. Indirect is the sum of sanctions considered as legitimate targeting an higher authority. T1-C tests Treatment 1, where the quantity of money stolen is very small vs the control group, and T4-C tests Treatment 4, where the half of the money was stolen vs Treatment 1. The models include a dummy indicating whether the respondent has the right to vote for the town chief. Robust standard errors in parenthesis. *** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$; + $p < 0.1$.

L Elder involvement: information and covering mechanisms

We investigate in this section why the involvement of the council of elders increase the quantity of sanctions considered as legitimate.

Two complementary mechanisms may be at play: the information-legitimation and the covering mechanism. The first proposes that when elders act against the town chief, it signals the legitimacy of villagers' grievances, encouraging them to express their concerns. The second, the covering mechanism, suggests that collective actions by villagers are seen as less isolated and thus less prone to retaliation from the town chief.

We assess these mechanisms by comparing treatment 2 and treatment 3 effects on two outcomes (see Figure L.1): a) the number of sanctions deemed legitimate (outcome 4), representing the legitimation mechanism, and b) the number of sanctions villagers feel able to take (outcome 5), representing the covering mechanism. If the effect appears only for outcome 4, it may indicate the legitimation mechanism alone.

Figure L.1 shows that the elders' influence is especially significant for indirect sanctions. Additionally, the effects on both outcomes suggest that both the legitimation and covering mechanisms are likely at play.

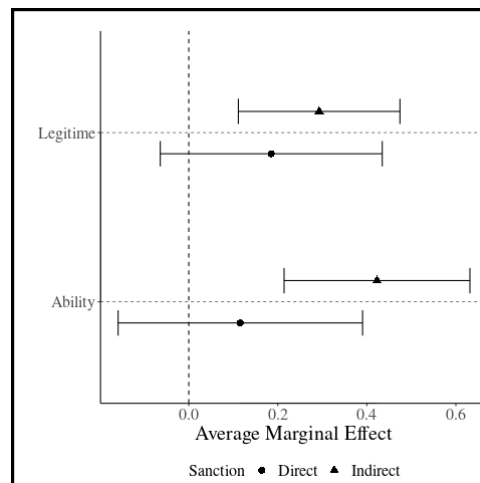


Figure L.1: Average treatment effects of elders' behavior on sanctioning preferences

Notes: The figure presents the average treatment effects of elders' behavior on the number of direct and indirect sanctions considered legitimate (top) and the number of direct and indirect sanctions the respondent would feel able to undertake (bottom). Bars represent 95% confidence intervals.

We find evidence supporting the validity of these mechanisms in select quotes from the open-ended questions, where the support of elders emerges as a crucial factor in shaping collective efforts aimed at maintaining social order. Respondents do not only condition their preferences on elders' action, but also their (stated) behaviors.

“I will report home to the elders and I will join the elders to sermoned the chief” –
One respondent receiving treatment 4

“I alone will not take any action because he is our chief, but if we came as one in the village we will take the action together” – One respondent receiving treatment

4

Our research reveals that the behavior of the elders shape respondents action when confronting to chiefs malevolence. Such individuals play a central in counterbalancing power dynamics in the case of elite capture of formal institutions (Shapland et al. 2023).

M Statistical results for the hypotheses 3 and 4

M.1 Distribution of village-level sanctioning preferences

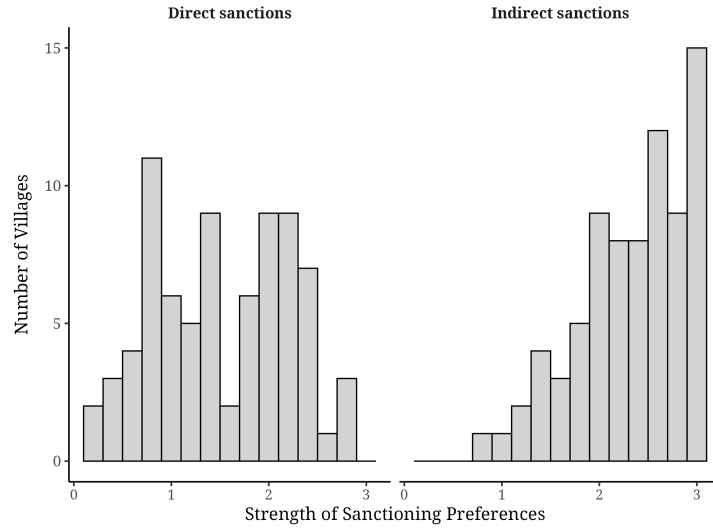


Figure M.1: Histogram of the strength of direct and indirect sanctioning preferences at the village level.

Notes: The figure presents the distribution of direct and indirect sanctioning preferences at the village level. To compute these measures, we averaged the responses across Treatments 1 to 4, differentiating between direct and indirect sanctions. For village-level direct sanctioning preferences, the measure could hypothetically range from 0 to 6. For village-level indirect sanctioning preferences, the measure could hypothetically range from 0 to 3.

M.2 Main empirical strategy with pre-registered outcomes

Table M.1: OLS regression between direct and indirect sanctions and 10 political outcomes

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Direct sanctions	-0.29 ⁺ (0.17)	0.34 (0.23)	0.08 (0.15)	-0.06 (0.21)	-0.18 (0.14)	0.18 (0.19)	0.16 (0.16)	0.04 (0.11)
Indirect sanctions	0.14 (0.14)	-0.16 (0.19)	-0.21 (0.15)	-0.12 (0.15)	-0.03 (0.11)	0.42* (0.19)	0.58** (0.19)	-0.22 (0.15)
Control	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Chiefdom FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	74	74	74	74	74	74	74	74
Adj. R ²	0.27	-0.04	0.22	0.17	0.32	0.28	0.40	0.18

Notes: (1): Town chief responsiveness measure 1, (2): Town chief responsiveness measure 2, (3): Number of community meetings organized in the past year (standardized measure), (4): Cost of conflict resolution (standardized measure), (5) Participation rates in community meetings (standardized measure), (6): trust in the town chief (standardized measure), (7): Shared interest with the town chief (standardized measure), and (8) deforestation rates between 2015 and 2020 in a 6-km radius. Chiefdom fixed effects and socio-demographic and institutional controls included. Robust standard errors in parenthesis.

*** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$; + $p < 0.1$

M.3 Pre-registered strategy with main text outcomes

Table M.2: OLS regression between direct, indirect sanctioning preferences, and inclusive decision-making and conflict frequency using the independent variable from the pre-registered plan

	Inclusive decision making (inverse measure)				Conflict frequency		Deforestation rates	
	TC	TC	PC	PC	(1)	(2)	(3)	(4)
Sanctioning index	0.15 (0.11)	0.31* (0.15)	0.32** (0.10)	0.29+ (0.16)	-0.08 (0.10)	-0.40** (0.14)	-0.06 (0.10)	-0.17 (0.16)
Control	No	Yes	No	Yes	No	Yes	No	Yes
Chiefdom FE	No	Yes	No	Yes	No	Yes	No	Yes
Observations	76	73	76	73	76	74	76	74
Adj. R ²	0.01	0.13	0.09	0.21	-0.01	0.20	-0.01	0.17

*** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$; + $p < 0.1$

Notes: Dependent variables are continuous and standardized. The independent variable is also standardized. TC and PC refer to the share of town chief (TC) or Paramount Chief (PC) family members selected for the land planning activity. Positive values indicate lower inclusive participatory decision-making. Columns (1) and (2) refer to the stated number of conflicts revealed by the town chief, measured on a scale from 1 to 5, and this variable is standardized. Columns (3) and (4) refers to deforestation rates between 2015 and 2020 in a 6km radius of center of villages. Controls include population size, the share of families with voting rights for the town chief, the stated frequency of meetings between the town chief and the Paramount Chief (measured using a dummy variable that equals 1 if meetings occur at least once a month), an index of infrastructure development, and income inequality between the chief and the average household. Robust standard errors in parenthesis. *** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$; + $p < 0.1$

M.4 Pre-registered strategy with pre-registered outcomes

Table M.3: OLS regression between the sanctioning index and pre-registered outcomes

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Sanctioning index	-0.08 (0.16)	0.10 (0.19)	-0.09 (0.13)	-0.16 (0.15)	-0.13 (0.13)	0.51** (0.19)	0.67*** (0.19)	-0.17 (0.16)
Observations	74	74	74	74	74	74	74	74
Adj. R ²	0.28	-0.07	0.36	0.16	0.31	0.27	0.37	0.17

Notes: (1): Town chief responsiveness measure 1, (2): Town chief responsiveness measure 2, (3): Number of community meetings organized in the past year (standardized measure), (4): Cost of conflict resolution (standardized measure), (5) Participation rates in community meetings (standardized measure), (6): trust in the town chief (standardized measure), (7): Shared interest with the town chief (standardized measure), and (8) deforestation rates between 2015 and 2020 in a 6-km radius. Chiefdom fixed effects and socio-demographic and institutional controls included. Robust standard errors in parenthesis.

*** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$; + $p < 0.1$

N Robustness check for the statistical results of hypotheses 3 and 4

N.1 Separate Models for Direct and Indirect Sanctions

Table N.1: OLS regression between direct sanctioning preferences, and inclusive decision-making, conflict frequency and deforestation rates

	Inclusive decision making (inverse measure)				Conflict frequency		Deforestation rates	
	TC	TC	PC	PC	(1)	(2)	(3)	(4)
Direct sanctions	−0.03 (0.12)	0.06 (0.14)	0.21 ⁺ (0.11)	0.14 (0.17)	0.08 (0.11)	−0.06 (0.16)	−0.04 (0.10)	−0.05 (0.13)
Control	No	Yes	No	Yes	No	Yes	No	Yes
Chiefdom FE	No	Yes	No	Yes	No	Yes	No	Yes
Observations	76	73	76	73	76	74	76	74
Adj. R ²	−0.01	0.06	0.03	0.17	−0.01	0.09	−0.01	0.15

Notes: Dependent variables are continuous and standardized. The independent variable is also standardized. TC and PC refer to the share of town chief (TC) or Paramount Chief (PC) family members selected for the land planning activity. Positive values indicate lower inclusive participatory decision-making. Columns (1) and (2) refer to the stated number of conflicts revealed by the town chief, measured on a scale from 1 to 5, and this variable is standardized. Columns (3) and (4) refer to deforestation rates in a 6km radius from the center of the village, the variable is standardized. Controls include population size, the share of families with voting rights for the town chief, the stated frequency of meetings between the town chief and the Paramount Chief (measured using a dummy variable that equals 1 if meetings occur at least once a month), an index of infrastructure development, and income inequality between the chief and the average household. Robust standard errors in parenthesis. *** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$; + $p < 0.1$

Table N.2: OLS regression between indirect sanctioning preferences, and inclusive decision-making, conflict frequency, and deforestation rates

	Inclusive decision making (inverse measure)				Conflict frequency		Deforestation rates	
	TC	TC	PC	PC	(1)	(2)	(3)	(4)
Indirect sanctions	0.31** (0.10)	0.41** (0.14)	0.36*** (0.09)	0.29* (0.13)	-0.24* (0.10)	-0.55*** (0.11)	-0.06 (0.11)	-0.22 (0.15)
Control	No	Yes	No	Yes	No	Yes	No	Yes
Chiefdom FE	No	Yes	No	Yes	No	Yes	No	Yes
Adj. R ²	0.09	0.21	0.12	0.23	0.04	0.35	-0.01	0.20
Num. obs.	76	73	76	73	76	74	76	74

Notes: Dependent variables are continuous and standardized. The independent variable is also standardized. TC and PC refer to the share of town chief (TC) or Paramount Chief (PC) family members selected for the land planning activity. Positive values indicate lower inclusive participatory decision-making. Columns (1) and (2) refer to the stated number of conflicts revealed by the town chief, measured on a scale from 1 to 5, and this variable is standardized. Columns (3) and (4) refer to deforestation rates in a 6km radius from the center of the village, the variable is standardized. Controls include population size, the share of families with voting rights for the town chief, the stated frequency of meetings between the town chief and the Paramount Chief (measured using a dummy variable that equals 1 if meetings occur at least once a month), an index of infrastructure development, and income inequality between the chief and the average household. Robust standard errors in parenthesis. *** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$; + $p < 0.1$

N.2 Analysis using the variables from the experiment 2

Table N.3: OLS regression between the average number of indirect and direct sanctions considered as legitimate in the land planning experiment, and inclusive decision-making and conflict frequency

	Inclusive decision making (inverse measure)				Conflict frequency		Deforestation rates	
	TC	TC	PC	PC	(1)	(2)	(3)	(4)
Direct sanctions	−0.39** (0.15)	−0.45* (0.18)	−0.04 (0.11)	−0.19 (0.16)	0.33** (0.10)	0.33* (0.14)	0.07 (0.11)	0.24+ (0.14)
Indirect sanctions	0.38*** (0.09)	0.40** (0.14)	−0.01 (0.12)	0.02 (0.16)	−0.07 (0.12)	−0.00 (0.15)	0.02 (0.11)	−0.11 (0.11)
Control	No	Yes	No	Yes	No	Yes	No	Yes
Chiefdom FE	No	Yes	No	Yes	No	Yes	No	Yes
Observations	76	73	76	73	76	74	76	74
Adj. R ²	0.17	0.21	−0.03	0.16	0.08	0.15	−0.02	0.17

Notes: Dependent variables are continuous and standardized. The independent variable is also standardized and are the average of respondents answers for the number of legitime sanctions in the land planning experiment. TC and PC refer to the share of town chief (TC) or Paramount Chief (PC) family members selected for the land planning activity. Positive values indicate lower inclusive participatory decision-making. Columns (1) and (2) refer to the stated number of conflicts revealed by the town chief, measured on a scale from 1 to 5, and this variable is standardized. Columns (3) and (4) refer to deforestation rates in a 6km radius from the center of the village, the variable is standardized. Controls include population size, the share of families with voting rights for the town chief, the stated frequency of meetings between the town chief and the Paramount Chief (measured using a dummy variable that equals 1 if meetings occur at least once a month), an index of infrastructure development, and income inequality between the chief and the average household. Robust standard errors in parenthesis. *** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$; + $p < 0.1$

N.3 Analysis using an average from the experiment 2 and experiment 1

Table N.4: OLS regression between the average number of indirect and direct sanctions considered as legitimate in both survey experiments, and inclusive decision-making, conflict frequency and deforestation rates.

	Inclusive decision making (inverse measure)				Conflict frequency		Deforestation rates	
	TC	TC	PC	PC	(1)	(2)	(3)	(4)
Direct sanctions	-0.31* (0.13)	-0.31 (0.20)	0.04 (0.12)	-0.06 (0.20)	0.31** (0.11)	0.34* (0.14)	0.07 (0.12)	0.18 (0.12)
Indirect sanctions	0.43*** (0.09)	0.42** (0.12)	0.14 (0.10)	0.11 (0.13)	-0.15 (0.12)	-0.20 (0.16)	-0.03 (0.10)	-0.17+ (0.10)
Control	No	Yes	No	Yes	No	Yes	No	Yes
Chiefdom FE	No	Yes	No	Yes	No	Yes	No	Yes
Observations	76	73	76	73	76	74	76	74
Adj. R ²	0.15	0.18	-0.00	0.15	0.06	0.14	-0.02	0.16

Notes:

Dependent variables are continuous and standardized. The independent variable is also standardized and are the average of respondents answers for the number of legitime sanctions in both survey experiments. TC and PC refer to the share of town chief (TC) or Paramount Chief (PC) family members selected for the land planning activity. Positive values indicate lower inclusive participatory decision-making. Columns (1) and (2) refer to the stated number of conflicts revealed by the town chief, measured on a scale from 1 to 5, and this variable is standardized. Columns (3) and (4) refer to deforestation rates in a 6km radius from the center of the village, the variable is standardized. Controls include population size, the share of families with voting rights for the town chief, the stated frequency of meetings between the town chief and the Paramount Chief (measured using a dummy variable that equals 1 if meetings occur at least once a month), an index of infrastructure development, and income inequality between the chief and the average household. Robust standard errors in parenthesis. *** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$; + $p < 0.1$