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DIRECT DEMOCRACY, POLICY PREFERENCES, AND CIVIC ATTITUDES:
EXPERIMENTAL EVIDENCE FROM MOZAMBIQUE

Maren Borne

Work project carried out under the supervision of:

Pedro Vicente

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Abstract

This paper examines the impact of direct democratic decision-making on policy preferences and civic attitudes. In the field experiment set in Cabo Delgado, Mozambique, two voting methods, secret ballot, and hand voting, are used to decide on local public goods investments. We measure the impact on several outcome variables relating to trust, accountability, democratic attitudes, and citizen mobilization modeled by behavioral games. The results reveal that secret voting leads to more alignment with general population interests, enhancing trust and accountability in local leaders. It also increases the critical perception of the current state of democracy in Mozambique, specifically among men.

Keywords: field experiment, direct democracy, policy preferences, civic attitudes

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I. Introduction

While extensive research exists on the influence of special interest groups in political decision-making, fewer studies focus on the local level of government. In Mozambique, the lowest level of administration is that of traditional community leaders. As part of the state decentralization process started after the first multiparty presidential and parliamentary elections in 1994, traditional leaders became positions formally recognized by the state to facilitate community participation in rural development (West and Kloeck-Jenson 1999). Even though local community participation is emphasized as one of the primary goals of recognizing community authorities, it does not prescribe how this should be achieved. In reality, it appears more emphasis has been put on committing to the administrative role rather than the community representative role (Buur and Kyed 2005).

Given that the allocation of local public goods may, therefore, be decided without careful regard to the community's preferences, this paper studies the effects of employing direct democratic instruments in local community participation. Specifically, we aim to find an answer to the question of whether democratic decision-making methods change the community's chosen policy preference and civic attitudes, including trust, accountability, and democracy perceptions.

We study this research objective as part of a larger experiment by Armand et al. (2020) in Cabo Delgado in Northern Mozambique. During the experiment, participants at a community meeting were randomized into different working groups to decide on a policy objective for investment in the community. The different working groups were a default deliberation group with the local leader, a group that makes a decision by secret ballot, and a group that chooses by a show of hands. We estimate not only the effect of the different voting methods on policy preference but also on a comprehensive set of outcome variables relating to trust and accountability, community mobilization, and perceptions of democracy. These variables were

collected by Armand et al. (2020) through an extensive baseline and endline survey, as well as behavioral games and structured community activities (SCAs) to model real-life behavior.

The experiment is set in Cabo Delgado, the province in Mozambique with the lowest Human Development Index (HDI) in a country with the fifth-lowest HDI in the world (Global Data Lab 2021). Government effectiveness is low, and other governance indicators, such as rule of law and regulatory quality, rank in the lowest third in the world (Kaufman and Kraay 2023). Literacy rates in Cabo Delgado are below 50 percent, which is below the Mozambique average, and residents of the province are at higher risk of living without access to basic services than in the rest of the country (INE 2017).

Contrary to previous evidence, we find effects on the type of policies selected. Policy objectives relating to education were prioritized more, and health was prioritized less in the secret voting group. An analysis of the moderating effect of women concluded that gender did not drive these policy choices. When inspecting the effect of hand voting on aligning with the leader's preferences, we find that when the share of women increases, preferences generally align more with the leader. However, this effect may be due to the nature of hand voting being more vulnerable to elite capture, and when there are more women in the group, elites may be able to exert more control over the deliberation and voting process. On the other hand, secret voting largely had no effect on aligning with leader preferences. The results of trust and accountability measures align with the recent literature, where the secret vote significantly increased trust in leaders and accountability measures. Next to this, we find effects on an increasingly critical attitude of men towards the current state of democracy in Mozambique induced by the secret voting treatment.

The rest of this paper is structured as follows. In the next section, we provide an overview of the relevant literature and detail our contribution to it. Then, we explain the

experimental design and present the results on the impact of the different voting methods on the outcome variables, finishing with a conclusion.

II. Literature Review

This paper builds on the existing literature regarding elite capture in local decision-making processes, policy preferences resulting from local community participation, and direct democracy. Bardhan and Mookherjee (2000) argue that the decentralization of political processes has the advantage of better access to input from locals. However, it also provides the grounds for greater capture by local elites who may want to monopolize the benefits from programs. This is due to an agency problem between the community and its community representative based on the lack of accountability the community can expect from their leader. The evidence points towards local elites indeed taking advantage of participatory initiatives and dominating the decision-making process while neglecting the interests of local beneficiaries (Lund and Saito-Jensen 2013). At the same time, experimental research shows that regulating community participation to limit elite capture programs improves the welfare and satisfaction of the community when the program is implemented with community interests in mind (Madajewicz, Tompsett, and Habib 2021). Introducing direct democratic tools in local policy-making allows the community to bypass the elite-controlled institutions (Matsusaka 2005).

Regarding policy preferences, Bandiera and Levy (2011) show that preferences for public goods differ for elites and the majority of the community when they are poor; education and health are preferred by the poor, while the elites prefer public security and voluntary labor programs. Policy areas relating to utilities and infrastructure are prioritized similarly by the elite and the poor. On the other hand, Olken (2010) finds no effect on actual projects selected when comparing the outcomes of representative-based meetings and direct election-based plebiscites. Only the choice of the women's project aligned more with the preference of the village elite,

but the author argues this is due to the agenda-setting still possibly being dominated by the elites.

The impact of using direct participation in political decision-making is mainly concentrated on increasing satisfaction with the chosen programs, enhancing the perceived legitimacy of leaders, and improving the quality of governance (Olken 2010; Beath, Christia, and Enikolopov 2017). However, Marien and Kern (2018) argue that the increase in political support is not due to an increase in perceived influence over the decision-making process but rather a result of choosing a policy that, by definition, was chosen by the majority. Nevertheless, this does not contradict the previous findings but instead explains why satisfaction increases. At the same time, some researchers contend that the use of direct democratic procedures may also provoke distrust in government since it sends the signal that the authorities may not act in their constituents' interest if the choice were left to them (Bauer and Fatke 2014; Stadelmann-Steffen and Vatter 2012). However, the evidence stems from studies on direct democracy in Switzerland and Belgium and may not apply to this study's context.

Regarding attitudes toward democracy, exposure to democratic principles should increase favorability towards democracy. This has been shown by the research of Spilimbergo (2009), who demonstrates that students studying abroad in democratic countries promote democracy at home. Furthermore, Persson and Tabellini (2009) argue that the democratic experience can be a virtuous circle, which makes a return to autocracy less likely. While these results consider democracy on a national level, the evidence is scarce for the effect of small-scale democratic methods.

This is the first study to the best of our knowledge, that uses an experimental approach to compare secret voting with public voting by hand in the context of local public goods. Furthermore, many studies regarding direct democratic instruments exploit the natural experiment setting of Switzerland or states in the United States, where direct democracy is a

relatively frequently used tool to decide on policy. This paper adds to the literature on the effectiveness of democratic tools at the local level in Sub-Saharan Africa. Additionally, the outcomes measured using a survey are complemented with data from behavioral games and an SCA to model real-life behavior and reactions to the treatments, which have not been explored in this setting in the literature before.

III. Experimental Design

A. Sampling & Randomization

A sample of 50 communities in the province of Cabo Delgado in Mozambique was selected as part of a larger field experiment on information dissemination in response to the natural gas discovery in the province (Armand et al. 2020). The sample was randomly selected from the 454 registered locations in the province, stratified on urban, semi-urban, and rural areas. The randomization into the different treatment groups was done on-site after the community training on natural resources took place in March and April of 2017 as part of the experiment by Armand et al. (2020). After the training on natural resources was concluded, community members were asked to stay to discuss in working groups which areas in the community should be a priority for future investments with income that may reach the community due to the exploitation of natural resources in the province of Cabo Delgado. All community members who did not want to participate or were unavailable to do so were asked to leave the meeting. Once the pool of participants was established, participants were given a raffle ticket corresponding to a number in the bag from which the groups were drawn. According to the total number of participants, a minimum of five and a maximum of ten ticket slips were drawn to assign the individuals to the first working group. The chief was invited to take part in this group, which is the control group. The second group of individuals drawn was assigned to the secret voting group, and the third group was assigned to the hand voting group.

Additionally, before the treatment, around ten households per community were sampled by Armand et al. (2020) to participate in a baseline and endline survey. The households were sampled through a physical random walk during the baseline survey. Each community leader was also interviewed for a similar baseline and endline survey. The final sample used for the subsequent analysis was formed by matching the voting experiment participants to the households that were surveyed. Since participation in the experiment was voluntary, it could not be guaranteed that members of the household surveyed would participate. For some working groups, none of the participants could be matched to the survey participants and, therefore, had to be dropped. The matching results yielded 47 communities in the control group, 43 in the secret voting treatment, and 44 in the hand voting treatment.

B. Treatments

The treatments were designed to compare different decision-making instruments, two democratic and one non-democratic. At the start of the experiment, participants were informed that they would be assigned to working groups within which they would choose three priority areas for an investment in the community. It was also emphasized that the decisions of each working group would be communicated to the district administration as well as the provincial government, which has shown interest in understanding the needs of the communities. In the control group, the participants, including the chief, were asked to decide on the three most important areas that can be improved in the community and to then record their choices on a form in order of preference. No further instructions were made to this group. The facilitators recorded how a decision was reached in the control group: most groups discussed jointly, and the chief presented the final decision.

The second group was told to discuss possible alternatives, like the control group, but to reach a final decision through a secret vote with pieces of paper. A round of voting was done for each of the three priorities, and the policy area with the most votes in each round was written

down on the facilitator form. Similarly, the third group was instructed first to discuss and then to decide by a vote of hand on their first, second, and third priorities. The outcomes with a majority were written on a form by the group and handed to the facilitators to pass on to the district administration and the Permanent Secretary of Cabo Delgado.

C. Measurements

This paper collects a wide range of measurements about communities' policy preferences through an experiment, survey-based measurements, and behavioral data from lab-in-the-field experiments and SCAs. The data for the regressors was collected from the voting experiment's facilitator forms, where some basic demographics of the group participants and the group's priority choices were recorded. To simplify the analysis, we have aggregated the different priorities of each group into ten different categories: Water, Mobile Network, Energy, Health, Education, Bank, Employment, Energy, Access Roads, Agriculture, and Infrastructure.

Further information about the participants and their perceptions was measured via the baseline and endline survey. The questions on each survey were largely the same, and attrition was prevented by finding a household member to substitute the baseline survey participant where possible. When testing whether attrition is systematically different across treatment groups, the results are not significant. Next to demographic information, variables relating to trust, accountability, and perceptions of democracy are measured. Questions are asked to elicit the magnitude of a behavior, perception or agreement with a statement. Where variables are aggregated into an index, averages are taken if they are on the same scale or standardized if they are on different scales. For all tables except for Table 1, the survey measures are taken from the endline a few months after the treatment intervention and the behavioral activities took place.

The behavioral activities consisted of SCAs and lab-in-the-field experiments conducted to model real-life decision-making and measure behavioral preferences as part of the

experiment by Armand et al. (2020). In this paper, we specifically use the trust game, the public goods game, and the matching grants activity. The trust game measured trust in local leaders

Table 1. Baseline Summary Statistics

	Control	Control	Treatment 1	Treatment 2	Joint test
	(1)	(2)	(3)	(4)	(5)
	N	mean (std.dev.)	diff. (std.dev.)	diff. (std.dev.)	<i>p</i> -value (N)
Female	163	0.245 (0.432)	0.005 (0.435)	-0.070 (0.382)	0.216 (409)
Age	163	44.117 (15.245)	0.799 (15.247)	0.331 (15.457)	0.907 (408)
Household size	163	5.902 (2.620)	-0.352 (2.813)	0.072 (2.874)	0.332 (407)
Women in the household	163	1.074 (0.828)	0.041 (0.900)	0.067 (0.861)	0.765 (408)
Married	163	0.460 (0.500)	0.070 (0.501)	0.022 (0.502)	0.516 (409)
No Education	163	0.239 (0.428)	0.064 (0.461)	0.041 (0.451)	0.358 (409)
Primary education	163	0.601 (0.491)	-0.139 (0.500)	-0.031 (0.497)	0.052* (409)
Secondary or higher education	163	0.160 (0.367)	0.075 (0.426)	-0.010 (0.358)	0.268 (409)
Muslim	163	0.540 (0.500)	-0.017 (0.501)	0.048 (0.494)	0.631 (409)
Macua ethnic group	163	0.669 (0.472)	-0.055 (0.489)	0.068 (0.442)	0.191 (409)
Maconde ethnic group	163	0.258 (0.439)	0.023 (0.451)	-0.073 (0.389)	0.206 (409)
Mwani or other ethnic group	163	0.074 (0.262)	0.032 (0.309)	0.005 (0.271)	0.496 (409)
Born in the village	163	0.681 (0.468)	-0.151 (0.501)	-0.049 (0.485)	0.046** (409)
Income	163	3656.441 (4947.166)	874.297 (5438.275)	-247.530 (3828.523)	0.344 (407)

Notes: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Column (1) reports the number of observations for the control group and column (2) reports the mean and standard deviation for the control group. Column (3) and (4) report the difference in mean of Treatment 1 and Treatment 2 group from the control group, respectively. Column (5) presents a joint test of significance of the coefficients for each treatment dummy.

and citizens' demand for leader accountability through the amount the citizens sent to the local leader, expecting some of the funds back. The public goods game and the matching grants SCA measured individuals' contributions to a public good and to a community fund, which were matched by the endline, respectively (see Appendix A for more details).

Table 1 shows summary statistics across a wide range of characteristics measured at the baseline. Among the individuals in the control group, 25 percent are female, the average age is 44 years old, 24 percent have no formal education, and 54 percent are Muslim. The average household size is around six persons, and almost half of the individuals in the control group are married. Almost 67 percent of the control group belongs to the majority ethnic group of Cabo Delgado, the Macua. The average monthly income is 3656 Meticaais, which was around 80 euros at the time. As seen in column 5, the individuals in the treatment groups do not statistically significantly differ from the control group, concluding that the sample appears balanced over the variables reported. However, one variable is statistically significant at the 5% level (born in the community), and one variable (primary education) is statistically significant at the 10% level. Both primary education and the indicator for being village-born are included as control variables in all regressions.

D. Estimation Strategy

Due to the successful randomization into comparable groups, the effect of the treatment on the various outcome variables can be estimated using ordinary least squares (OLS). Only the endline observations are used to estimate the treatment effects. Using OLS, the following specification is estimated:

$$(1) \quad Y_{ij} = \alpha + \beta_1 T1_{ij} + \beta_2 T2_{ij} + \gamma Z_{ij} + \delta X_{ij} + \varepsilon_{ij},$$

where Y_{ij} are the outcome variables for every individual i from community j , $T1_{ij}$ and $T2_{ij}$ are indicator variables for every individual in every community being assigned to the secret voting treatment or the hand voting treatment, Z_{ij} is a set of community control variables and X_{ij} and

is a set of individual control variables for either citizens or leaders depending on the outcome, and ε_{ij} is an individual-specific error term, clustered at the community level to allow errors within the community to be correlated. Additionally, to estimate the treatment effects on the policy preferences a moderating variable is included in the regression specification:

$$(2) \quad Y_{ij} = \alpha + \beta_1 T1_{ij} + \beta_2 T2_{ij} + \beta_3 T1_{ij}S_{ij} + \beta_4 T2_{ij}S_{ij} + \beta_5 S_{ij} + \gamma Z_{ij} + \delta X_{ij} + \varepsilon_{ij},$$

where S_{ij} is a variable reporting the share of women in every group, all other variables correspond to the definitions for equation (1).

The objective for every outcome variable investigated in this paper is to test whether treatment 1 (secret voting) had an effect ($H_0: \beta_1 = 0$), treatment 2 (hand voting) had an effect ($H_0: \beta_2 = 0$), and whether the effect differs across the two treatments ($H_0: \beta_1 - \beta_2 = 0$). The community controls consist of the following variables: indicator variables for the district and stratum community j is located in, an infrastructure index that represents the presence of public infrastructure, a natural resources index, the number of voters, an indicator variable for whether community j is below median distance from Palma, and the share of secondary or higher educated individuals, the share of ethnic Macua individuals, and the share of ethnic Maconde individuals in the community. The individual controls include age, gender, household size, marital status, level of education, religion and ethnic group indicators, and an indicator for whether individual i was born in the community.

E. Hypotheses

This paper investigates the effect of the direct democracy treatments on a set of outcome variables collected through behavioral games, structured community activities, and surveys. The first outcome variables relate to the policy choice that each treatment group made as a result of this experiment. Even though the experimental literature has not unequivocally shown that there are effects on the type of policy chosen from direct democratic decision-making, the treatments can potentially affect the decision for a project. Both hand voting and secret voting

can increase the probability of choosing a project that is less vulnerable to elite-capturing and that reflects the genuine interest of the community members as local assemblies (Bardhan and Mookherjee 2000; Lund and Saito-Jensen 2013; Beath, Christia, and Enikolopov 2017).

Policy areas such as the building and improvement of roads may reflect preferences by the elites, who are more likely to have vehicles to drive on such roads and benefit from the roads than the average community member. Therefore, direct democracy methods can decrease the popularity of such projects by allowing community members to take control of the decision-making process and preventing the elite from driving policy choices in their interests (Matsusaka 2005). Next to this, secret voting, compared to hand voting and the control intervention, can increase the empowerment of women, reflecting choices for projects that relate to traditionally more women-led concerns, such as water and education (Chattopadhyay and Duflo 2004; Gottlieb, Grossman, and Robinson 2018; Beath, Christia, and Enikolopov 2013).

The second set of outcome variables provides information on the extent to which the treatment group's choices align with the leader's personal preferences, which are recorded in the baseline survey. Compared to the control group, both election methods may result in a deviation from the leader's preference, assuming the leader is prone to exhibiting elite-capture and rent-seeking behavior. In this case, the same rationale as aforementioned would suggest that the election-based treatment groups show a deviation in policy categories that reflect the leader's interests rather than the community's interest. In particular, the deviation from the leader in those categories may be larger for the secret voting group than for the hand voting group due to the fact that a public vote like hand voting may be influenced by social desirability bias and is more vulnerable to be captured by elite interests (Brennan and Pettit 1990).

Next to the policy choice, we also study a third set of variables relating to trust and accountability. These variables are collected after the deliberation meeting and examine

whether the direct democracy methods increased trust and accountability in local leaders, as demonstrated by Olken (2010). Among this set of outcomes are also variables that measure citizens' mobilization through behavioral games and SCA. Based on the literature, the voting treatments are expected to increase the willingness to contribute to public goods (Olken 2010; Bandiera and Levy 2011).

The last set of outcome variables deals with perceptions about the current local and nationwide democratic processes and attitudes towards them. The treatments can improve participants' perception of democracy, having been exposed to the democratic process during the experiment (Spilimbergo 2009; Persson and Tabellini 2009), although there is evidence that direct democracy instruments may also decrease support in the government (Stadelmann-Steffen and Vatter 2012).

IV. Results

This section presents the results of the set of outcomes of interest as defined in the previous section. The columns always report the dependent variable, whereas the treatments are the regressors. Community and household control variables are included in the regressions but are omitted from the tables. The treatment effects are always interpreted in comparison to the control group. First, the effects on the policy preferences are presented and thereafter in relation to the leader's preference. Then, we focus on the outcomes relating to trust and accountability, and lastly, perceptions and attitudes about democracy. On top of this, gender effects are also presented for the last two sets of outcome variables to shed some light on the drivers of the results.

Policy Preferences. The first outcome variables to consider are the chosen policy areas since those are the main outcome recorded in the experiment. Table 2 presents these effects on the categorized priorities written down during the deliberation activity. Each column presents the effect of the treatments on the probability of this category being among any of the three

priorities chosen. While Olken (2010) does not find any effects on the type of policy selected, the evidence from this study shows at least some significant effects emanating from the treatments.

Column 3 reports a significant decrease in the probability of a policy relating to *health* being chosen by the secret voting group compared to the control group. While *health* seems to have been a popular choice among the control groups, the groups that decided by a secret vote were 14 percentage points less likely to choose *health* as one of their priorities. This decrease is significant at the 10 percent level. *Education* is the only other policy area that shows significant changes from the control group being 14 percentage points more likely to be picked as one of the priorities by the secret voting group. The increase in the likelihood of *education* being selected as one of the policy priorities may be because this reflects the community's interest, while in the control group, this choice may be captured by elites who typically do not prioritize education. In general, only the treatment by secret vote seems to have been effective in inducing changes in policy preference, while the hand-treatment group shows no significant differences across all categories from the control group.

To investigate whether these results are driven by women being able to make their voice heard in a secret vote, we have interacted the treatment indicators with the share of women present in each group as well as controlled for the share of women. The results of this are presented in panel B of Table 2. The coefficients suggest that the effect on *water* and *health* is only significant when there are no women in the group. The only moderating effect women seem to have that can be found in these results is for the policy priority *access roads* in the hand voting treatment. When the share of women is larger, the hand voting groups are more likely to choose *access roads* compared to when there are no women in the group. However, this pattern could be the result of elites more effectively dominating the deliberation and voting process in the hand voting group when there are women present, who are less likely to challenge them.

Table 2. Deliberation Priority Choices

	Water (1)	Mobile Network & Energy (2)	Health (3)	Educa- tion (4)	Bank & Employ- ment (5)	Energy (6)	Access Roads (7)	Agri- culture & Infra- structure (8)
<i>Panel A. Simple regression</i>								
T1 - Secret Voting	0.111 (0.069)	0.096 (0.086)	-0.144* (0.083)	0.143* (0.074)	-0.010 (0.063)	0.055 (0.089)	0.032 (0.077)	0.006 (0.079)
T2 - Hand Voting	0.017 (0.098)	0.130 (0.097)	0.022 (0.090)	0.104 (0.077)	-0.046 (0.056)	0.046 (0.100)	-0.062 (0.085)	-0.006 (0.064)
Observations	411	411	411	411	411	411	411	411
R ²	0.266	0.227	0.210	0.200	0.282	0.176	0.273	0.273
Mean (control group)	0.430	0.315	0.739	0.539	0.103	0.285	0.545	0.127
T1 = T2 (p- value)	0.350	0.737	0.121	0.634	0.457	0.922	0.281	0.863
<i>Panel B. Interactions with share of women in the group</i>								
T1 - Secret Voting	0.141** (0.067)	0.088 (0.109)	-0.217** (0.085)	0.101 (0.093)	-0.025 (0.078)	0.065 (0.110)	0.020 (0.091)	-0.004 (0.091)
T2 - Hand Voting	0.008 (0.137)	0.185 (0.127)	0.110 (0.112)	0.137 (0.098)	-0.077 (0.076)	0.084 (0.128)	-0.302*** (0.102)	-0.035 (0.078)
T1 - Secret Voting # Share Women	-0.156 (0.300)	0.050 (0.313)	0.383 (0.322)	0.220 (0.318)	0.068 (0.136)	-0.041 (0.299)	0.027 (0.254)	0.048 (0.278)
T2 - Hand Voting # Share Women	0.026 (0.291)	-0.226 (0.223)	-0.340 (0.341)	-0.122 (0.277)	0.133 (0.119)	-0.160 (0.255)	0.992*** (0.209)	0.124 (0.272)
Share Women	0.349* (0.192)	0.095 (0.172)	-0.125 (0.188)	-0.008 (0.210)	-0.186* (0.097)	0.102 (0.164)	-0.556*** (0.141)	0.066 (0.163)
Observations	411	411	411	411	411	411	411	411
R ²	0.267	0.231	0.234	0.204	0.285	0.178	0.336	0.275
Mean (control group)	0.430	0.315	0.739	0.539	0.103	0.285	0.545	0.127

Notes: * p<0.10, ** p<0.05, *** p<0.01. Standard Errors in parentheses and clustered at the community level. *Panel A* estimates are based on OLS regressions using equation (1). *Panel B* estimates are based on OLS regressions using equation (2). The dependent variables present the indicator variables for the policy category that the deliberation group chose as any of their three priorities. For each category the indicator variable equals 1 when this category was chosen as one of the three priorities and 0 otherwise. Column (2), (5), and (8) have been aggregated into one outcome variable due to insignificant results. The regressor *Share Women* reports the share of women in each deliberation group. All regressions are including household and community-level controls that are presented in Section V. The *Panel A* regression additionally controls for *Share Women*. The *p*-value corresponds to jointly testing that T1 and T2 are different from zero.

This is related to previous findings where a greater alignment with the leader's preference was due to their ability to take advantage of the deliberation agenda when power shifted towards poorer members of the community (Olken 2010).

Alignment with the leader. In this subsection, we analyze how far the voting treatments are able to influence policy choice away from the preference of the leader when there is a disparity in preferences. The alignment with the leader is measured based on the leader's survey response at the baseline and the priority chosen by the deliberation groups during the experiment. In the survey, each leader was asked which areas they believe are most important to improve in the community. The response was coded according to the same categories as the priorities chosen by the deliberation groups.

Panel A of Table 2 shows the effects of the voting treatments on aligning with the leader. There are no statistical differences in aligning with the leader between the control group and the treatment groups when alignment is measured as any alignment irrespective of policy choices in column 1. Secret voting is only effective in increasing the alignment with the leader for the category *energy*, however this is significant at the 10 percent level. Other than that, secret voting does not seem to have any significant effect on aligning with the leader on specific policy areas. Meanwhile, hand voting increases alignment with the leader for *mobile network* and decreases the alignment with the leader for *education*. The effects are significant at the 10 and 5 percent level, respectively.

Considering the moderating effect of the share of women in the group in Panel B, we find that in column 1, for a higher share of women in the hand voting group, the alignment with the leader becomes significantly greater relative to when there are no women in the group. Similarly to what we already observed in the moderating effect of women in the hand-voting groups in the previous section, this may be due to elites' domination of the deliberation and voting process. The remaining results in Panel B relating to specific categories suggest that

Table 3. Alignment with Leader's Priorities

	Any Alignment (1)	Water (2)	Mobile Net- work (3)	Health (4)	Educa- tion (5)	Energy (6)	Access Roads (7)	Agri- culture & Infra- structure (8)
<i>Panel A. Simple regression</i>								
T1 - Secret Voting	-0.066 (0.077)	0.055 (0.068)	0.021 (0.022)	-0.018 (0.043)	-0.027 (0.084)	0.058* (0.031)	0.029 (0.058)	-0.018 (0.023)
T2 - Hand Voting	0.057 (0.077)	0.045 (0.052)	0.030* (0.016)	-0.078 (0.077)	-0.111** (0.047)	0.031 (0.028)	-0.009 (0.056)	-0.025 (0.019)
Observations	379	379	379	379	379	379	379	379
R ²	0.232	0.241	0.374	0.334	0.215	0.356	0.177	0.219
Mean (control group)	0.413	0.071	0.019	0.323	0.252	0.045	0.148	0.026
T1 = T2 (p- value)	0.249	0.891	0.658	0.484	0.368	0.363	0.546	0.412
<i>Panel B. Interactions with share of women in the group</i>								
T1 - Secret Voting	-0.102 (0.129)	0.015 (0.062)	0.022 (0.049)	-0.043 (0.087)	-0.008 (0.100)	0.086** (0.042)	-0.052 (0.090)	-0.024 (0.044)
T2 - Hand Voting	-0.167 (0.131)	0.026 (0.077)	0.052* (0.030)	-0.256** (0.119)	-0.187* (0.094)	0.097** (0.046)	-0.103 (0.103)	-0.056 (0.034)
T1 - Secret Voting # Share Women	0.168 (0.621)	0.253 (0.418)	0.001 (0.202)	0.106 (0.492)	-0.147 (0.372)	-0.164 (0.267)	0.495 (0.396)	0.035 (0.164)
T2 - Hand Voting # Share Women	1.182** (0.550)	0.101 (0.199)	-0.113 (0.091)	0.939* (0.490)	0.401 (0.349)	-0.347 (0.258)	0.501 (0.340)	0.165 (0.102)
Share Women	-1.170*** (0.388)	-0.006 (0.192)	0.088 (0.083)	-0.595* (0.310)	-0.450 (0.326)	0.311 (0.194)	-0.721** (0.282)	-0.229 (0.154)
Observations	379	379	379	379	379	379	379	379
R ²	0.253	0.243	0.376	0.349	0.220	0.361	0.186	0.226
Mean (control group)	0.413	0.071	0.019	0.323	0.252	0.045	0.148	0.026

Notes: * p<0.10, ** p<0.05, *** p<0.01. Standard errors in parentheses and clustered at the community level. Estimates based on OLS regressions using equation (1). *Panel B* estimates are based on OLS regressions using equation (2). The dependent variable in column (1) is whether there is any alignment in the category chosen as the first priority with the first priority the leader chose in the baseline survey to the question: *Which 3 areas do you think are most important to improve here in the community?* If there was any overlap in the priority chosen in the deliberation meeting and in the priority chosen by the leader in the survey the variable equals 1 and 0 if there was no overlap for any priority category. Columns (2) – (7) are indicator variables that equal 1 if that category was chosen by the deliberation group as any of the priorities as well as by the leader in the survey. Only categories that had any alignment with the leader's response are presented, the categories *Bank, Employment*

and *Agriculture* did not have any overlap and are therefore excluded from this table. The regressor *Share Women* reports the share of women in each deliberation group. All regressions are including leader and community-level controls that are presented in Section V. The *Panel A* regression additionally controls for *Share Women*. The *p*-value corresponds to jointly testing that T1 and T2 are different from zero.

women do not have an added effect on the alignment with the leader on specific policy areas.

Trust and Accountability. Turning to the effects of the voting treatments on trust and accountability, we find that secret voting has a significant impact on this set of outcome variables. Trust in local leaders increases significantly at the 5 percent level, as reported in column 1. Here, the effect seems to be driven by women as the coefficient in panel B, where the sample only consists of women, is larger and significant at the 5 percent level. However, this effect does not seem to translate to action in the behavioral game since the results in column 2 do not show any effect of either treatment on the amount sent to the leader in the trust game.

Moving on to an index of questions related to accountability of the leader in column 3, the secret voting treatment led to increasing accountability. This effect is significant at the 10 percent level, and the *p*-value of comparing the means of secret voting and hand voting also indicates that secret voting has a significantly larger effect than hand voting. Looking at panels B and C, the estimated effect appears to be independent of gender. Furthermore, when asked whether the leader deserves a share of the community's resources for being the leader, secret voting significantly negatively affects agreement with this statement. This result seems mainly driven by men, as seen in column 4 in panel C, and is statistically significant at the 5 percent level.

Summing up the results of the trust and accountability variables, the secret voting treatment appears to have increased citizens' levels of trust in the leader and the leader's legitimacy among citizens. Secret voting allows citizens to take control over the decision-making process and consequently enhances the belief that the leader will act based on the results of the direct democratic decision-making process. This is also related to the belief that citizens can initiate change when they see a need for it. The results are in line with the experimental literature

where the use of a direct democratic instrument at the local level increases perceptions of trust, legitimacy, and quality of governance (Olken 2010; Beath, Christia, and Enikolopov 2017; Marien and Kern 2018; Bauer and Fatke 2014). That hand voting does not elicit these beliefs is presumably in the nature of this voting procedure. It still leaves room for domination by the elite and is vulnerable to social desirability bias (Brennan and Pettit 1990; Olken 2010; Madajewicz, Tompsett, and Habib 2021).

Beyond direct measures of trust and accountability, we find no impact on the voice index. However, this index relates to the perceived voice at the provincial and national governments, which may explain why there is no effect on this outcome variable while there is an effect on accountability measured at the local level. At the same time, there is a significant increase in the activity in local committees. This increase of 0.155 standard deviations on average is experienced by the secret voting group when the sample is not restricted. When considering female and male participants separately, the significance of the impact disappears. However, when considering only women, the hand voting treatment increases the activity in local committees by 0.348 standard deviations, which is significant at the 5 percent level. These results point towards democratic voting strengthening individuals' perception of their ability to influence local politics and, by doing so, taking action by becoming involved with local committees. While the literature has not focused on how direct democracy impacts the political activity of citizens, these results still oppose the findings of the few papers that find null effects on political activity (Stadelmann-Steffen and Vatter 2012).

Regarding the citizen mobilization modeled by the matching grants SCA and the public goods game, there is no evidence that the voting treatments have any differential impact on citizens' behavior compared to the control group. However, when looking at gendered effects, the secret voting treatment increases women's individual contribution to the matching grant while the same treatment decreases the individual contribution of men. The former is significant

Table 4. Trust, Accountability and Citizens' Mobilization

	Trust in local leaders (1)	Trust game Sent to leader (2)	Account- ability (3)	Leader's resource entitle- ment (4)	Voice (5)	Local commit- tee (6)	Matching Grant Indivi- dual contribu- tion (7)	Public goods game Indivi- dual contribu- tion (8)
<i>Panel A. All participants</i>								
T1 - Secret Voting	0.225** (0.089)	-0.078 (0.265)	0.063* (0.037)	-0.213** (0.088)	-0.101 (0.135)	0.155** (0.069)	-0.028 (0.052)	-0.331 (0.247)
T2 - Hand Voting	0.159 (0.115)	-0.256 (0.237)	-0.019 (0.045)	-0.083 (0.116)	-0.098 (0.106)	0.047 (0.077)	0.069 (0.044)	0.105 (0.268)
Observations	411	406	392	406	398	410	209	406
R ²	0.151	0.161	0.173	0.200	0.133	0.127	0.901	0.082
Mean (control group)	2.358	4.348	0.682	0.378	2.547	0.255	3.761	4.628
T1 = T2 (<i>p</i> - value)	0.551	0.554	0.061*	0.284	0.985	0.310	0.149	0.119
<i>Panel B. Female</i>								
T1 - Secret Voting	0.414** (0.180)	0.368 (0.595)	0.049 (0.101)	0.047 (0.285)	0.242 (0.240)	0.215 (0.154)	0.308* (0.155)	-0.460 (0.505)
T2 - Hand Voting	0.216 (0.146)	-0.603 (0.518)	-0.007 (0.109)	-0.264 (0.231)	-0.162 (0.250)	0.348** (0.130)	-0.046 (0.139)	0.552 (0.511)
Observations	106	105	100	104	103	106	53	105
R ²	0.368	0.397	0.383	0.426	0.308	0.413	0.942	0.433
Mean (control group)	2.312	4.583	0.652	0.383	2.531	0.083	3.565	4.604
T1 = T2 (<i>p</i> - value)	0.315	0.193	0.590	0.225	0.160	0.425	0.109	0.075*
<i>Panel C. Male</i>								
T1 - Secret Voting	0.170 (0.105)	-0.151 (0.325)	0.054 (0.048)	-0.214** (0.105)	-0.163 (0.143)	0.103 (0.084)	-0.116** (0.056)	-0.265 (0.319)
T2 - Hand Voting	0.112 (0.134)	-0.167 (0.292)	-0.017 (0.055)	0.008 (0.113)	-0.090 (0.125)	-0.023 (0.089)	0.075 (0.054)	0.011 (0.364)
Observations	305	301	292	302	295	304	156	301
R ²	0.191	0.176	0.137	0.206	0.173	0.215	0.914	0.123
Mean (control group)	2.376	4.250	0.694	0.376	2.555	0.325	3.835	4.638
T1 = T2 (<i>p</i> - value)	0.655	0.963	0.187	0.109	0.614	0.286	0.016**	0.433

Notes: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Standard Errors in parentheses and clustered at the community level. Estimates based on OLS regressions using equation (1). *Panel A* includes the whole endline sample, *Panel B* only includes female respondents and *Panel C* only includes male respondents. The columns present the dependent variables: (1) *Trust in local leaders*: variable that indicates the degree of trust in the local leader, 0 means no trust and the maximum of 4 means a lot of trust; (2) *Sent to leader*: amount (between 0 and 10) sent by the citizen to the leader in the trust game (Appendix A.1); (3) *Accountability*: constructed index of 3 survey questions that relate to the extent to which the community holds the leader responsible and the effectiveness of this; (4) *Leader's resource entitlement*: takes value -1 if the respondent disagreed, 0 if the respondent neither agreed nor disagreed, and 1 if the respondent agreed to the statement: "The leader deserves a share of the community's resources, as he is in charge."; (5) *Voice*: constructed index of two survey questions regarding the perceived voice the residents of Cabo Delgado have in their provincial and national governments; (6) *Local Committee*: variable that indicates the level of participation in a local committee of the respondent, a higher value means more active participation; (7) *Individual contribution*: amount (reported in logarithms) contributed by the respondent in the matching grants SCA (Appendix A.3); (8) *Individual Contribution*: amount (between 0 and 10) contributed by the participant in the public goods game (Appendix A.2). All regressions are including household and community-level controls that are presented in Section V. The p -value corresponds to jointly testing that T1 and T2 are different from zero.

at the 10 percent level, while the latter is significant at the 5 percent level. Furthermore, the effect of the secret voting treatment visible in the men's sample significantly differs from the impact of the hand voting treatment. It may be that voting by secret ballot is a more individualistic approach compared to the public vote by hand or the default deliberation. And while it may empower women, it could encourage men to become free riders when contributing to local public goods. However, these results are not consistent across all citizens' mobilization activities as no significant differences are reported for the public goods game, so attributing meaning to the matching grant results should be done with caution.

Democracy. The last set of outcome variables relates to perceptions of the current political system. The variables are measured as agreement or disagreement with statements in the endline survey. Regarding agreement with the statement whether only one political party is currently allowed to run in elections and govern in column 1, there are no effects of the voting treatments in comparison to the control group. Only when restricting the sample to women do they appear to agree with this statement significantly less, suggesting a less critical view of the de facto one-party rule. Looking at column 2, the results imply a similar picture. The secret voting treatment led to increased agreement with the statement that elections and the Assembly of the Republic are abolished so that the president can decide everything. This seems to be driven

by men, as shown in panel C, implying they are more critical of the democracy in Mozambique. This effect is significant at the 10 percent level.

Since these statements are descriptive, capturing the citizens' perception of the current system, it may not be surprising that women are not as critical of Mozambique's current de facto one-party rule. While women in Sub-Saharan Africa generally support democracy as much as men, studies on the Afrobarometer show that they are less likely to support a multiparty system than men because it may be associated with more conflict for which women have a higher opportunity cost (García-Peñalosa and Konte 2014; Logan and Bratton 2006; Coffe and Bolzendahl 2011). Still, the results suggest that the secret voting treatment makes men more aware of the current autocratic system by exposing them to this direct democratic process (Spilimbergo 2009; Persson and Tabellini 2009).

Contrary to the statements of columns 1 and 2, the remaining outcome variables measure agreement with prescriptive statements. There seem to be no effects of the treatments on whether elections are the best option to organize a government, nor on whether it is best to find solutions within the law. Meanwhile for the statement that violence is never justifiable in Mozambican politics, the hand voting treatment seems to have elicited a significant effect at the 5 percent level towards disagreement with this statement. The opposing statement to this question, whether it sometimes may be necessary to resort to violence to defend a cause, seems to find more agreement among the hand voting group. The results in column 5 in panels B and C suggest that this sentiment is universal across men and women. Especially when only considering a sample of women, the hand voting group is significantly more likely to agree with this statement than the secret voting group as the p -value reports. This is significant at the 5 percent level for women and marginally significant at the 5 percent level for the whole sample.

To answer the question of why hand voting leads to increased agreement with violence to achieve a goal may be due to a combination of reasons. Direct democracy can sometimes

Table 5. Democracy

	One political party (1)	President rules alone (2)	Elections (3)	Follow the law (4)	Violence is never justified (5)
<i>Panel A. All participants</i>					
T1 - Secret Voting	-0.056 (0.137)	0.231* (0.121)	-0.060 (0.041)	-0.011 (0.036)	-0.023 (0.055)
T2 - Hand Voting	-0.091 (0.139)	0.141 (0.119)	-0.016 (0.044)	-0.012 (0.032)	-0.165** (0.068)
Observations	403	390	403	405	377
R ²	0.119	0.126	0.152	0.101	0.128
Mean (control group)	-0.110	-0.203	0.840	0.919	0.735
T1 = T2 (<i>p</i> -value)	0.785	0.357	0.258	0.973	0.051*
<i>Panel B. Female</i>					
T1 - Secret Voting	-0.353* (0.197)	-0.043 (0.242)	-0.020 (0.107)	-0.025 (0.117)	0.046 (0.119)
T2 - Hand Voting	-0.117 (0.268)	0.008 (0.213)	0.094 (0.077)	-0.043 (0.090)	-0.247** (0.101)
Observations	100	100	104	104	97
R ²	0.487	0.372	0.417	0.261	0.396
Mean (control group)	-0.043	0.000	0.761	0.913	0.727
T1 = T2 (<i>p</i> -value)	0.466	0.849	0.387	0.876	0.038**
<i>Panel C. Male</i>					
T1 - Secret Voting	0.017 (0.176)	0.283* (0.149)	-0.060 (0.044)	-0.012 (0.041)	-0.050 (0.061)
T2 - Hand Voting	-0.087 (0.175)	0.166 (0.150)	-0.006 (0.049)	-0.001 (0.036)	-0.151** (0.069)
Observations	303	290	299	301	280
R ²	0.111	0.126	0.132	0.131	0.156
Mean (control group)	-0.137	-0.290	0.871	0.922	0.738
T1 = T2 (<i>p</i> -value)	0.521	0.377	0.219	0.809	0.216

Notes: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Standard Errors in parentheses and clustered at the community level. Estimates based on OLS regressions using equation (1). *Panel A* includes the whole endline sample, *Panel B* only includes female respondents and *Panel C* only includes male respondents. The columns present the dependent variables which are variables from the endline survey where the respondent was asked to agree or disagree with the statement. Column (1) and (2) are variables that take value -1 if the respondent disagreed, 0 if the respondent neither agreed nor disagreed, and 1 if the respondent agreed. Column (3) - (5) are binary variables where 1 means agreement and 0 means disagreement. The statements relating to each dependent variable are: (1) *One political party*: “Only one political party is allowed to compete in elections and govern.”; (2) *President rules alone*: “Elections and the Assembly of the Republic are abolished so that the president can decide everything.”; (3) *Elections*: “We should choose our leaders through regular, free and honest elections.”; (4) *Follow the law*: “It’s better to find solutions within the law, even if it takes longer.”; (5) *Violence is never*

justified: “In Mozambican politics, the use of violence is never justified.”. All regressions are including household and community-level controls that are presented in Section V. The p -value corresponds to jointly testing that T1 and T2 are different from zero.

lead to increasing distrust in the government (Bauer and Fatke 2014; Stadelmann-Steffen and Vatter 2012), and on the other hand, individuals may feel emboldened by observing that they are part of a majority when voting by hand. However, this is only a presumption, and further analysis is needed into why hand voting elicits this attitude in contrast to secret voting and the default.

V. Conclusion

The experiment aimed to shed light on the effect of direct democratic decision-making for local public goods on policy preferences, trust and accountability, and attitudes towards democracy. This was achieved by conducting a randomized field experiment in the province of Cabo Delgado in Northern Mozambique. Citizens were asked to choose their preferred priorities for future investment in the community in three different groups: a group where no instructions were given to the type of deliberation which constitutes the control group, a group that voted on the preferred priorities by secret ballot, and a group that made their decision by a show of hands.

We conclude that the secret vote intervention has broadly elicited the behavioral pattern expected from the literature closest to this study. On the other hand, the effect of hand voting is inconclusive, confirming previous evidence at times and raising questions about the mechanism at other times. Importantly, we also found that the type of decision-making process can shape the policy preference. Since the experiment did not include the implementation of the chosen policy area, we cannot conclude whether satisfaction with the project increases through democratic decision-making, though this is expected in line with past literature. Furthermore, we do not find any conclusive evidence that women are particularly more empowered through the secret voting.

The results do suggest that the decisions represent the general population's interest better than the elites'. Secret voting especially enhances trust in local leaders and increases accountability significantly, even though these shifts in attitude are not translated to behavior measured in behavioral games and SCAs. Lastly, perceptions of democracy in Mozambique are affected by the exposure to the different democratic instruments. Men, in particular, seem to become more critical of the current rule in Mozambique.

A limitation of this study is that there are only 49 communities in the sample, with the secret and hand voting groups' sample size being small, consisting only of 113 and 135 individuals in the respective groups. Even though we were able to detect various clear effects, some impacts may have gone unnoticed due to the small sample, which may be the case for the policy preferences where only some effects were weakly detected. Moreover, the setting of this experiment is specific to the Cabo Delgado province, which is one of the least developed areas in Mozambique, a country that is already in the low human development category. Therefore, the results may not be generalizable to a different context. Additionally, this study does not consider the long-term implications of the different deliberation methods, even though trust and accountability may diminish again, especially if the projects voted on in the experiment are not implemented. Still, we offer valuable contributions to the literature on using democratic instruments for local decision-making on public goods. Specifically, we show the potential of improving accountability and the political climate through secret voting in a context where institutions are relatively weak and local leaders and elites dominate.

VI. References

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Appendix A

A.1 Trust Game

The game was played within each community including the 10 sampled households and the leader. Each citizen received 100 Meticaïs in the form of 10 tokens worth 10 Meticaïs each. The citizen could decide to send some of this income to the leader with the possibility of receiving some of it back from the leader. The citizen could keep the amount they did not send to the leader for themselves. The amount sent to the leader was tripled and the leader then had to decide how much of the funds they received to give back. The citizen was given the option to punish the leader if they had received 150 Meticaïs and sent back less than 50 Meticaïs. However, punishment costs the citizen 10 Meticaïs and the leader 30 Meticaïs. When all decisions had been made the citizens were paid according to the leader's set of decisions and the leader was paid by being randomly matched with one citizen's payoff from their community. The variable of interest is the amount each citizen sent to the leader.

A.2 Public Goods Game

The public goods game also involved an endowment of 100 Meticaïs in the form of 10 tokens worth 10 Meticaïs each for the citizen. They then had the choice between keeping the funds to themselves or contributing them to a public account. Any contribution to the public account was doubled and then divided equally among all participants, independent of their contribution. The variable of interest is the amount of individual contribution.

A.3 Matching Grants SCA

Matching grants was an SCA to raise funds towards a community objective selected via an official public meeting. Funds raised were matched at a rate of 50% until a maximum 2,500 Meticaïs. Each community was asked to form a designated committee to collect and keep a record of the individual contributions. The committee was tasked with keeping the funds until

August 2017 when the amounts were verified and the matching grant was given accordingly.

The variable of interest is the amount of individual contribution.