

Direct Democracy and Local Public Goods

Evidence from a Field Experiment in Indonesia

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September 2009

ABSTRACT

This paper presents an experiment where 49 Indonesian villages were randomly assigned to choose development projects through either representative-based meetings or direct election-based plebiscites. Plebiscites resulted in dramatically higher satisfaction among villagers, increased knowledge about the project, greater perceived benefits, and higher reported willingness to contribute. Changing the political mechanism had much smaller effects on the actual projects selected, with some evidence that plebiscites resulted in projects chosen by women being located in poorer areas. The results show that direct participation in political decision making can substantially increase satisfaction and legitimacy, even when it has little effect on actual decisions.

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1. Introduction

Recent years have witnessed a trend in the developing world towards local participation in government decision making (Stiglitz 2002; World Bank 2004). What this trend means in practice is that decisions about local public good provision are increasingly delegated to local assemblies, such as the *Gram Panchayat* in India and the *Conselho do Orçamento Participativo* in Brazil. Though these forums provide for local input, only a small fraction of the population typically attends, leading to concerns that they may be prone to capture by local elites (Bardhan 2002; Bardhan and Mookherjee 2006).

This paper investigates an alternative political mechanism for deciding on local public goods: plebiscites, where citizens vote directly at an election for their most preferred projects. Proponents of direct democracy argue that it has two main virtues (Matsusaka 2004). First, direct democracy allows voters a way to circumvent representative institutions that may have been captured by elites or other special interests. Second, compared with meetings, elections allow an order of magnitude more citizens to participate directly in political decision making, and this increased participation may enhance the legitimacy of political decisions even if the decisions themselves do not change (Lind and Tyler 1988).

To investigate these two hypotheses, I conducted a randomized, controlled field experiment in 49 Indonesian villages, each of which was preparing to apply for infrastructure projects as part of the Indonesian *Kecamatan* Development Program (KDP). Under KDP, each village follows a political process that results in two proposed infrastructure proposals, one “general project” proposed by the village at large and one “women’s project” project proposed exclusively by women in the village. The experiment randomly allocated villages to choose their projects either through a standard KDP decision making process, in which projects are selected at two representative village meetings (one meeting to select the general project, and one

meeting exclusively with women representatives to select the women's project), or through direct plebiscites, in which all villagers could vote directly at an election for their most preferred projects. To mirror the meeting-based process, in plebiscite villages two simultaneous votes were held, one in which all adults in the village were eligible to vote for the general proposal and one in which all adult women in the village were eligible to vote on the women's-specific proposal. The list of potential projects to be considered by the meeting process or by the plebiscite process was generated using an identical agenda-setting process in both types of villages.

In almost all naturally-occurring settings, political decision rules are chosen endogenously through a complex political process, which makes evaluating the impact of political rules challenging (Green and Shapiro 1994). In this case, however, the fact that political mechanisms were randomly assigned allows me to evaluate their impact by simply comparing outcomes across the two experimental conditions. In so doing, I build on a small-but-growing number of randomized field experiments conducted to investigate political issues (e.g., Eldersveld 1956; Gerber and Green 2000; Wantchekon 2003; Druckman et al. 2006). To the best of my knowledge, however, the field experiment reported here represents the first time the political process itself has ever been randomly assigned.

Using this methodology, I examine the impact of moving from meetings to plebiscites along two main dimensions. First, I examine the impact on elite capture by examining whether the types of projects chosen move closer to the preferences of villages elites and whether the location of projects move towards wealthier parts of the villages. Second, I examine the impact on legitimacy by examining a wide range of measures of villagers' satisfaction with, and perceived fairness of, the KDP program.

First, with regard to potential elite capture of the selected project, I find relatively little impact of the plebiscite treatment on the general project, but substantial impacts on the women's project. For the general project, the type of project selected (i.e., road, irrigation system, water/sanitation, etc) did not change whatsoever as a result of the plebiscite, and there were only minor changes in the locations of these projects as a result of the plebiscite. For the women's project, by contrast, the plebiscite resulted in projects located in poorer areas of the village, which seems to suggest that the plebiscite shifted power towards poorer women who may have been disenfranchised in a more potentially elite-dominated meeting process. At the same time, however, the plebiscite resulted in the types of projects being chosen for the women's project closer to the stated preferences of the village elites. One potential explanation for these changes is, in the experimental design, the plebiscite treatment did not affect how each area of the village selected its proposals, and elites were more dominant in the agenda-setting process in poorer areas of the village. A shift in power towards poorer areas of the village at the final decision-making stage might therefore result in projects that look closer to elite preferences.

Second, with regard to measures of legitimacy and satisfaction, I find that the election-based plebiscite process resulted in substantially higher citizen satisfaction across a wide variety of measures. For example, plebiscites substantially increased villagers' overall satisfaction with the KDP program. They also improved villagers' perceptions of the fairness and legitimacy of the selected project, and dramatically improved their stated satisfaction with the project selected. Remarkably, these findings even hold for the general project, where the type of project selected did not change at all, which suggests that these results are driven by increased legitimacy of the political process through which projects were selected, rather than the political process resulting in better projects being chosen. These effects are large, statistically significant, and seem to

occur no matter how the questions were phrased. Villagers also indicate that they are substantially more likely to contribute voluntary labor or materials to KDP projects in villages where plebiscites were held. The striking results on citizen satisfaction and legitimacy results confirm the view of some democratic theorists that broad participation in the political process can be a legitimizing force, even if the ultimate decisions taken do not change (Lind and Tyler 1988; Fishkin 1991; Benhabib 1996; Ackerman and Fishkin 2004).

The findings in this paper complement the existing non-experimental empirical literature on the impacts of direct democracy. A main thrust of this literature has been to investigate the relationship between direct democracy and the size of local government, identifying this effect using variation in the extent of direct democracy across political jurisdictions in the United States (Matsusaka 1995), Switzerland (Feld and Matsusaka 2003; Funk and Gathmann 2007) and Sweden (Pettersson-Lidbom and Tyrefors 2007). A key difference between this study and this earlier non-experimental work is that the field experiment studied here investigates the choice of which public goods should be provided, rather than the amount of public goods. In the study most closely related to this project, Frey and Stutzer (2005) study the impacts of direct democracy in Switzerland on subjective well-being, finding that Swiss citizens are happier than non-Swiss citizens in those Swiss cantons where holding a referendum is easier. However, the fact that the extent of direct democracy in these cantons also changes policy outcomes makes interpreting the Swiss results somewhat challenging; the results in this paper lend confirmation to the idea that participation itself may in fact affect satisfaction since satisfaction increases even when the policy choices remain unchanged.

The remainder of the paper is organized as follows. Section 2 provides basic information on the KDP program and outlines the experimental design. Section 3 presents the results,

showing the impact of the plebiscites on the selected project type (roads, irrigation, education programs, etc), project location, various measures of satisfaction and predicted utilization, knowledge about the program, and public and private discussion of development issues. Section 4 concludes.

2. Setting, Experimental Design, and Data

2.1. The KDP Program

This study takes place in 49 Indonesian villages, all of which were participating in the Kecamatan (Subdistrict) Development Project. KDP, is a national Indonesian government program, funded through a loan from the World Bank. KDP began in 1998, and at the time of the study financed projects in approximately 15,000 villages throughout Indonesia each year. The study takes place in three KDP subdistricts, one each on the islands of Java, Sumatra, and Sulawesi, which were chosen from among the KDP subdistricts by the author to represent the wide variety of conditions in rural Indonesia. One subdistrict is in East Java, a heavily Muslim area that is one of the most densely populated areas rural areas in the world. A second subdistrict is in North Sumatra, an area with much smaller villages and a larger Christian population. A third subdistrict is in Southeast Sulawesi, in a poorer, more remote area with substantial ethnic heterogeneity, even within villages. Within each of the three target subdistricts, villages were randomly sampled.

In KDP, participating subdistricts, which typically contain between 10 and 20 villages, receive an annual block grant for three consecutive years. Every year, each village in the subdistrict makes two proposals for small-scale infrastructure activities. The village as a whole proposes one of the projects (which I refer to as the ‘general project’); women’s groups in the village propose the second (which I refer to as the ‘women’s project’). Once the village proposals have been made, an inter-village forum, consisting of six representatives from each

village, ranks all of the proposals according to a number of criteria, such as the number of beneficiaries and the project's cost, and projects are funded according to the rank list until all funds have been exhausted; typically, about 40% of villages have at least one project funded each year. This study focuses on the process by which the village selects its two proposals. The baseline process in KDP works as follows. All Indonesian villages are comprised of between 2 and 7 *dusun*, or hamlets. For a period of several months, a village facilitator organizes small meetings at the hamlet level; for large hamlets multiple meetings might be held in different neighborhoods within each hamlet.¹ These meetings aim to create a list of ideas for what projects the village should propose. These ideas are then divided into two groups – those that originated from women's only meetings and those suggested by mixed meetings or men's meetings. The village facilitator presents the women's list to a women-only village meeting and the men's and joint ideas to a village meeting open to both genders. While these meetings are open to the public, those that attend represent a highly selected sample, just as in Mansbridge's (1983) study of Vermont town meetings. In particular, government officials, neighborhood heads, and those selected to represent village groups compose the majority of attendees. A typical meeting would have between 9-15 people representing the various hamlets, as well as various formal and informal village leaders, with on average about 48 people attending in total out of an average village population of 2,200. In the general meeting, the representatives are usually (but not always) men, whereas in the women's meeting, all representatives are women. At each meeting, the representatives in attendance discuss the proposals, with substantial help from an external

¹ Two village facilitators, one man and one woman, are elected at the first village meeting at the start of the KDP process. These facilitators are typically recent high school graduates who are asked to take the job out of service to the community. Facilitators receive a very small stipend (around US\$10/month) to cover their operational expenses. This meeting at which facilitators were chosen was held prior to the randomization being announced in all provinces, so the identity of these facilitators can be considered exogenous with respect to the intervention here.

facilitator (as in Humphreys, Masters and Sandbu 2006), deciding ultimately on a single proposal from each meeting.

2.2. *Experimental Design*

The results reported here come from field work conducted between September 2005 and January 2006. The key intervention studied here is a change in the decision making mechanism: instead of following the meeting-based process described above, some villages were randomly allocated to choose their projects via a direct election-based plebiscite. The idea behind the plebiscite was that it would move the political process from a potentially elite-dominated meeting to a more participatory process that might be less subject to elite capture.

The method for selecting the list of projects to be chosen (i.e., the agenda setting procedure) was the same in both cases – the list of projects to be decided on at the meeting or the list of projects on the ballot was determined from the results of hamlet level meetings, where each hamlet was allowed to nominate one general project and one women’s project.²

The plebiscite was conducted as follows. Two paper ballots were prepared – one for the general project and one for the women’s project. The ballots had a picture of each project along with a description of the project. Village officials distributed voting cards to all adults in the village who had been eligible to vote in national parliamentary elections held approximately six months previously. The voting cards also indicated the date of the election and the voting place. Voting places were set up in each hamlet (*dusun*) in the village.³ When arriving at the voting

² Note that in East Java and Southeast Sulawesi, the set of projects to be decided amongst – i.e., the agenda – was already fixed at the time the randomization was announced. In North Sumatra, however, the agenda was selected after the randomization was announced, so it is potentially endogenous with respect to the randomization. This is discussed in more detail below.

³ If two hamlets were less than 15 minutes walk from one another, we combined them into one voting precinct with a single voting station. In our sample, six hamlets – located in four villages – used voting stations in a nearby hamlet. To ensure that this is not biasing results, I run two robustness checks. First I limit the sample to villages where all hamlets had ballot boxes, and then I restricted it to hamlets where ballot boxes were located. Results (not shown) remain virtually unchanged.

place to vote, men received one ballot (for the general project) and women received two ballots (one for the general project, one for the women's project). The selected project (for both the general and women's project) was the proposal that received a plurality of the votes in the respective vote. Turnout at these elections averaged 807 people, or over 60% of all eligible voters in the village.⁴ This means that roughly 20 times as many villagers participated in the plebiscites as attended the village meetings in non-election villages. Participation in the plebiscite was approximately balanced between men and women.

The experiment was conducted in two phases. First, Phase I was conducted in 10 villages in East Java Province and 18 villages in North Sumatra Province. Based on qualitative reports from Phase I areas, the experimental protocol was changed slightly, and then run again in Phase II in an additional 18 villages in Southeast Sulawesi Province. The key intervention studied here – the plebiscite treatment – was run identically in both phases of the study. However, the design of the meeting-based decision process was changed slightly between Phase I and Phase II. In particular, within each Phase of the experiment, several variants of the meeting protocol were run in randomly selected subsets of 4-6 villages each, as pilots for a subsequent experiment that was ultimately not conducted. Appendix A discusses the details of these variants on the meeting protocol, and shows that the main results presented here are robust to dropping each of these alternative meeting protocols one by one.

The randomization design is shown in Table 1.⁵ In Phase I of the project, 25% of villages were allocated to the plebiscite treatment, whereas in Phase II of the project, 45% of villages

⁴ As I do not have data on the number eligible voters, I estimate the number of turnout by taking the total village population and multiplying by 0.667, which is the average ratio of adult population to total population in similar areas of Indonesia (author's calculations).

⁵ In Southeast Sulawesi, the treatment assigned to three villages was changed after the randomization was determined. To maintain the exogeneity of the random assignment, in all analysis in this paper I use the results of the original randomization, rather than the final treatment status, in conducting the analysis. The analysis should

were allocated to the plebiscite treatment. Given these different probabilities, in all specifications I include phase fixed effects, to capture the fact that the treatment probability differed by phase.

A natural question is the degree to which the randomization resulted in a balanced set of villages in the two treatment conditions. To investigate this, Table 2 shows summary statistics for a wide range of variables that capture the social and economic characteristics of the village (population, agricultural wage, distance to district capital, Herfindahl indices of ethnic and religious fragmentation), the characteristics of the village’s executive branch (the village head and his staff), the village’s legislative branch (the village parliament, known as the BPD), prior development experience (number of previous KDP projects in the village), and survey respondents (log per capita expenditure predicted from assets, age, education, etc). For each variable, I calculate the mean of the variable in meeting villages. To test for differences between the plebiscite and meetings groups, for each variable I estimate the following regression via OLS:

$$Y_v = \alpha_{phase} + \beta ELECTION_v + \varepsilon_i \quad (1)$$

where v is a village and α_{phase} refers to fixed effects for whether the villages was in Phase I or Phase II of the project. Column (2) of Table 2 shows the coefficient β , with robust standard errors in parentheses; for respondent-level variables with more than one observation per village, the standard errors are adjusted for clustering at the village level, adjusted for clustering at the village level. Column (3) shows the p-value for the null hypothesis that $\beta = 0$, and column (4) shows the number of observations for each variable.⁶

therefore be interpreted as intent-to-treat effects (Angrist, Imbens and Rubin 1996); treatment-on-treated effects would be slightly larger than the results reported here.

⁶ The number of observations for village level variables is not identical from variable to variable because some data were not able to be obtained in each village. Since there are 26 variables, and only 20 villages have all 19 variables non-missing, we do not have enough degrees of freedom to estimate a regression with all 26 of these variables on the right-hand side.

The results in Table 2 show that the sample appears balanced across these variables. As would be expected when 26 variables are considered, one variable is statistically significant at the 5% level (number of parliament meetings held in the last year) and one variable (village head's education) is statistically significant at the 10% level. We have verified that controlling for these two variables does not affect the main results below. Thus, the randomization results appear balanced on the key variables of interest.

2.3.Strategic considerations

As discussed above, the village funding process in KDP is a three step process – agenda setting at the hamlet level, proposal creation at the village level, and funding decisions at the inter-village level. The experimental intervention considered here – replacing the meeting-based mechanism for creating village proposals with a plebiscite-based mechanism for creating village proposals – affects only the 2nd step of this three step process. To interpret the results of this experiment, it is important to consider the relationship of the proposal-setting process considered here to the both the first step and the third step, to understand potential strategic considerations villagers may face and how they might affect the results.

2.3.1. Agenda setting

The first step in the process is the agenda setting step. As discussed above, the “agenda” – the list of projects to be considered as proposals at the village meeting, is set by first brainstorming a list of potential project ideas. For a period of several months, a village facilitator organizes small meetings at the hamlet level; for large hamlets multiple meetings might be held in different neighborhoods within each hamlet. Project ideas coming originating in women's groups are kept separate from project ideas originating in mixed or men's groups.

In the standard KDP process, the list of potential project ideas is brought to the village meetings, with the women's ideas going to the women's meeting and all other ideas going to the

general meeting. At the beginning of the meeting, the facilitator reviews all of the ideas with the meeting participants, and helps the participants group ideas together that are either redundant or highly complementary with each other. For example, if two neighboring hamlets each propose to asphalt road in their hamlet, and the roads are contiguous, these might be grouped into a single project; similarly, water supply and irrigation projects can be grouped to take advantage of natural economies of scale. In the plebescite process, since this grouping of project ideas needed to occur before the ballot could be printed, the process of grouping similar ideas together was done by the project facilitators in consultation with villagers who had been elected at a previous KDP meeting to administer KDP in the village. About 40% of the final projects on the agenda ended up being of the same project type as another project on the proposal list and differed only on the location where the project would be conducted

As discussed above, in two of the three provinces of the experiment (East Java and Southeast Sulawesi), the results of the brainstorming exercise were completed before the randomization of villages into meeting or plebescite was announced. Assuming the grouping process was performed similarly (and it was designed to be as similar as possible), the agenda in these provinces should be comparable between meeting and plebescite groups. Examining the final lists, I have verified that, indeed, the composition of projects (e.g., share of projects that are roads/bridges, water/sanitation, health/education, or irrigation) appears unrelated to treatment status in these provinces. I have also verified that the grouping process appears to have worked comparably – the number of final agenda items is similar between the two treatments, and the share of projects that involve multiple hamlets is also similar (results available on request.)

In the remaining province (North Sumatra), the brainstorming exercise was completed after the randomization of villages into meeting or placebo had been announced. Thus, villagers

in election villages might have proposed different projects than those in meeting villages, strategically believing that certain types of projects might fare better in the elections than in the meetings. In fact, there is evidence for this – examining the agenda in North Sumatra, I find more roads (which, as shown in Table 3 below, are the type of project preferred by the most villagers) and fewer water and sanitation projects and more roads in North Sumatra in election villages compared to plebescite villages. I also find fewer total projects on the agenda in election villages relative to placebo villages.

If the plebescite treatment were to be permanently implemented outside of an experiment, this type of endogenous agenda setting would clearly come into play. Given that, it is useful to know if the main results of the paper occur in both the province where there was endogenous agenda setting in addition to the provinces where there was not. Appendix A of the working paper version of the paper (Olken 2008) discussed how the main results of the paper are very similar in the two subsamples, suggesting that the results are not substantially affected by the potentially endogenous agenda setting in the North Sumatra villages.

2.3.2. Final funding decisions

After the village proposals are made, the third step and final step in the fund allocation process is the inter-village forum, which allocates a fixed amount of money among the various villages in the subdistrict. To interpret the results of the plebescite experiment, it is important to understand how villagers perceive this third and final step. For example, villagers might believe that by making the general and women's proposal for the same project, they might be sending a stronger signal to the inter-village committee about their need for the project. Or, villagers might believe that the committee is more or less likely to fund certain types of projects. Alternatively,

since elite villagers are the ones likely to be selected as representative to the inter-village meeting, they might lobby harder for their village's proposal if matches elite preferences.

From the perspective of interpreting the experiment considered here, it is important to understand whether how villagers perceived the village allocation process and whether they thought strategically about it in making their village proposal choices. Although it is hard to answer this question definitively, in my qualitative field work in study villages in all three study provinces, I found almost no discussion during the proposal process – in either the representative meetings or among villagers in the plebescite villages – about this third decision making stage.⁷ Instead, the discussions focused almost exclusively on pros and cons of the various alternative proposals from the hamlets. The qualitative field work thus suggests that, from the perspective of interpreting the results, villagers behaved without taking into account strategic considerations of how their proposals would be received at the third and final funding stage.

Although the funding decisions were made after the conclusion of the experiment and after all data was collected, and so did not actually affect the experimental results, looking at how the actual funding decisions were made can potentially shed light on what villagers might have been expecting (assuming they had rational expectations about the funding process). I find that, in practice, the general and women's project were treated equally – 12 out of 49 general projects were funded and 11 out of 49 women's projects were funded. These funding decisions for the general and women's project were independent of each other (i.e., 2 villages received both general and women's projects, almost exactly what one would expect if the probability of

⁷ The only time in my field work I came across any discussion of the third stage among villagers was on the subject of village co-financing (see Olken and Singhal 2009 for more information on village co-financing). In particular, in one village in North Sumatra province, after the proposal had been selected, the facilitator reminded participants that one of the criteria for funding at the final stage was village financing, and they (as with almost all villages) agreed to include some in-kind labor confinancing in their official proposal.

funding each project was independent).⁸ Although power is limited given that I have data on only 49 villages, I find no evidence that proposing the same project type and location for the general and women's project makes a village more likely to get funding, and no evidence that projects that better match elite preferences were more likely to be funded (results available on request).⁹ These results suggest that strategic considerations about the third-round funding decisions may not be a first-order concern when deciding on proposals at the second stage.

2.4.Data

The analysis here uses three data sources. First, a panel household survey was conducted, in which five households were randomly sampled in each village. The households were stratified such that two households were randomly selected from the population of each of two hamlets in the village, and were again randomly stratified so one respondent in each hamlet would be a randomly selected adult woman and the other respondent in the hamlet would be a randomly selected adult man (from a different household). To ensure that those who were involved in village affairs were adequately represented in the sample, the fifth household was randomly drawn from the attendance list at a KDP meeting that was held prior to the project beginning. This household survey was conducted in two waves, one at the inception of the study and one

⁸ A Fisher exact test for independence of general and women's funding decisions yields a p-value of 0.708, so we cannot reject independence statistically.

⁹ At the project level, I examined the following variables: plebescite village, women's proposal, project type dummies, average poverty percentile of affected hamlets, share of population in affected hamlets, and average rank of project type by elites. At the project level, the only variable I examined that statistically significantly predicts a project being funded is that health and sanitation projects are more likely to be funded; however, a joint test of dummies for the four major project types is not statistically significant. At the village level, I examined all of the previous variables (except women's project), as well as dummies for both proposal being the same type of project, the same location, and the same type *and* location. The only variable I examined that statistically significantly predicts a village receiving funding is that villages whose projects are in richer hamlets are more likely to be funded, but once again this variable is not significant when I examine all variables simultaneously. Results available on request.

after the project selection process was concluded.¹⁰ The household survey contains information on a standard set of household characteristics, such as assets (used to predict expenditure). Respondents ranked potential projects in order from most to least preferred. The same respondents were resurveyed in the second wave, in which they also responded to a number of questions about their perceptions of and satisfaction with the KDP project in their village.

Second, a survey was conducted in which we asked the village head, and the head of every hamlet, a number of background questions about the condition of the village. The survey also elicited their preferences about types of projects, which I refer to in the analysis as ‘elite’ preferences.¹¹ Third, detailed data (type and location) was collected about the list of projects on the agenda, and about the projects actually selected.

3. Results

This section discusses the main findings. Section 3.1 presents results on the impact of the plebiscites on the types and location of projects selected. Section 3.2 shows the effect of the plebiscites on subjective measures of satisfaction with the project. Section 3.5 discusses the impact of the plebiscites on informal discussions about the project and on citizen knowledge about the outcomes of the political process.

¹⁰ Due to time pressures at the beginning of the project, the first wave of the household survey was contemporaneous to the announcement of the randomization in East Java and Southeast Sulawesi. I therefore focus on results using the second wave of the household survey.

¹¹ The time pattern of these surveys was identical to that of the first round of the household survey – i.e., before randomization was announced in North Sumatra, and contemporaneous with randomization in East Java and Southeast Sulawesi.

3.1. Impacts on project selection

3.1.1. Project types

Projects have two main attributes: project *type* – i.e., is the project a road, bridge, irrigation system, etc. – and project *location*, i.e., in which areas of the village the project is located.

To begin, Table 3 presents summary statistics about types of projects. The first two columns show the breakdown of project types that were actually selected by the program, for both the general proposal (column 1) and the women’s proposal (column 2). The general project is much more likely to be a road or bridge (64% for general project compared to 35% for women’s project), whereas the women’s project is much more likely to be a drinking water supply system (27% vs. 8%).

The remaining columns of Table 3 show respondents’ most preferred project type, broken down by various demographic characteristics, according to the responses from the first wave of the household survey. Columns (3) and (4) break down preferences by gender. Note that the differential preferences by gender match almost exactly the differences in the actual project selections – men are more likely to prefer roads or bridges (64% for men vs. 38% for women), and women are more likely to prefer drinking water projects than men (23% to 3%). This provides suggestive evidence that, in equilibrium, the project selected by the women’s process reflects the opinions of women in the village, whereas the general project reflects the preferences of men in the village.¹²

¹² Note that this does not necessarily imply that women’s preferences would not be represented without the special project reserved for women, as it is possible that the separate reservation for women turns the general project into the ‘men’s project,’ a phrase we heard frequently in qualitative work in project villages. However, the evidence from India suggests that reservations for women can cause projects selected to more closely resemble women’s preferences, at least in the setting studied there (Chattopadhyay and Duflo 2004).

The next four columns, which split households by per-capita expenditure quartile (where quartiles are constructed separately for each province), show that richer households are also more likely to prefer roads, whereas poorer ones tend to prefer irrigation projects, which may reflect the fact that the poor are more likely to be in agriculture than involved in trading or services. Finally, the final two columns show that landowners prefer irrigation projects more often than landless individuals.

The first question about the impact of the plebiscites is their impact on the types of projects selected. Figure 1 shows, for both the general project and the women’s project, the composition of selected projects broken down by whether the village was a plebiscite village or a meeting village. As is evident from Figure 1, there were no changes whatsoever in the types of projects selected as the ‘general project’ across the two different treatment conditions. For the ‘women’s project,’ some differences emerge – the projects chosen by plebiscite were slightly more likely to be roads and bridges (i.e., moving away from women’s stated preferences as shown in Table 3) and water/sanitation systems (i.e., towards women’s stated preferences as shown in Table 3), and substantially less likely to be irrigation projects.

To estimate the statistical significance of the changes shown in Figure 1, I estimate a conditional logit model via maximum likelihood (following McFadden 1974). Adapting the standard conditional logit notation, denote by P_v the number of project types (i.e., road, irrigation, etc.) in village v and T_v the total number of types selected in that village (which will almost always be equal to 1). Denote d_{vp} to be a dummy variable equal to 1 or 0, and denote by S_v the set of all possible vectors $\mathbf{d}_v = \{d_{v1}, \dots, d_{vP_v}\}$ such that $\sum_{p=1}^{P_v} d_{vp} = T_v$. I then estimate the following model:

$$\Pr(\mathbf{CHOSEN}_v \mid \sum_{p=1}^{P_v} CHOSEN_{vp} = T_v) = \frac{\exp \left[\sum_{p=1}^{P_v} CHOSEN_{vp} (\alpha_{p \times phase} + \beta_j ELECTION_v \times \gamma_p) \right]}{\sum_{\mathbf{d}_v \in S_v} \exp \left[\sum_{p=1}^{P_v} d_{vp} (\alpha_{p \times phase} + \beta_j ELECTION_v \times \gamma_p) \right]} \quad (2)$$

where $CHOSEN_{vp}$ is a dummy variable equal to 1 if project type p was chosen in village v and 0 if not, and \mathbf{CHOSEN}_v indicates the vector of projects chosen in village v . $ELECTION$ equals 1 if the village chose its project proposal via plebiscite and 0 otherwise. I group the 8 project types into four major categories – roads/bridges, irrigation, water/sanitation, and other – to preserve statistical power. The omitted category in the regression is ‘other,’ which consists of educational and health projects. Robust standard errors are adjusted for clustering at the village level. The key coefficients of interest are the interactions of the project types \times election (i.e., the β_j ’s), which indicates the differential likelihood a particular type of project is chosen in plebiscite-based villages relative to meeting-based villages.

The results from estimating equation (2) are presented in Table 4. The first 3 columns show the results when all options are considered; the last 3 columns restrict the sample to the subset of types that were actually available as agenda items in that village. (The second specification has more power, but I present both given that it is theoretically possible that there was the potential for endogeneity in available project types in North Sumatra villages, given the timing of the experiment.) The coefficients are interpretable as log odds ratios. The results confirm the picture shown in the Figure 1. For the general project, the point estimates are generally small and statistically insignificant – a joint F-test has a p-value of 0.79 or 0.87, depending on the specification. For the women’s project, the point estimates indicate substantial increases in the probability of choosing either roads / bridges and water / sanitation projects,

though given the small sample sizes these shifts are not statistically significant (p-values from a joint F-test of 0.55 and 0.18, depending on specification).

While the overall preferences for different types of projects reported in Table 3 give some indication of which project types were preferred by which types of people, I can estimate more directly whether the project resulted in chosen projects that were more or less preferred by different subsets of villagers. Recall that in the first household survey, respondents were asked to rank each of the eight potential project types from most preferred (1) to least preferred (8). I can therefore estimate the following conditional fixed-effects logit regression:

$$\Pr(\mathbf{CHOSEN}_{vh} \mid \sum_{p=1}^{P_v} \mathbf{CHOSEN}_{vhp} = T_v) = \frac{\exp \left[\sum_{p=1}^{P_v} \mathbf{CHOSEN}_{vhp} \left(\begin{array}{l} \alpha_p + \gamma_{1phase} \mathbf{RANK}_{vhp} + \gamma_2 \mathbf{RANK}_{vhp} \times X_{vi} \\ + \beta_1 \mathbf{ELECTION}_v \times \mathbf{RANK}_{vhp} \\ + \beta_2 \mathbf{ELECTION}_v \times \mathbf{RANK}_{vhp} \times X_{vi} \end{array} \right) \right]}{\sum_{\mathbf{d}_{vh} \in S_v} \exp \left[\sum_{p=1}^{P_v} \mathbf{d}_{vhp} \left(\begin{array}{l} \alpha_p + \gamma_{1phase} \mathbf{RANK}_{vhp} + \gamma_2 \mathbf{RANK}_{vhp} \times X_{vi} \\ + \beta_1 \mathbf{ELECTION}_v \times \mathbf{RANK}_{vhp} \\ + \beta_2 \mathbf{ELECTION}_v \times \mathbf{RANK}_{vhp} \times X_{vi} \end{array} \right) \right]} \quad (3)$$

where v is a village, p is a project type, and h is the respondent. Note that the coefficient γ_1 is allowed to vary by project phase, to take into account the fact that the probability of *ELECTION* differed between phase 1 and phase 2 villages. \mathbf{CHOSEN}_{vhp} equals 1 if the project type p was chosen by respondent h 's village v and 0 if it was not. \mathbf{RANK}_{vhp} is respondent h 's rank of project p in village v , where the top-project is ranked 1, the second project is ranked 2, etc. Robust standard errors are clustered by village, to take into account the fact that there are multiple respondents in each village.

The key coefficients of interest are the interactions of *ELECTION* and *RANK* (i.e., β_1), and the triple interactions of *ELECTION*, *RANK*, and individual characteristics X (i.e., β_2). A

negative coefficient on the triple interaction indicates that the plebiscite made projects preferred by individuals with the respective characteristic X more likely to be chosen.

The results are shown in Table 5. The first column shows the overall impact of plebiscites on the probability that low-ranked (i.e., preferred) project types are likely to be chosen; the second column focuses on whether projects preferred by elites are more likely to be chosen when elections are utilized, and the third column investigates a host of individual characteristics.¹³ For the general project, I find no effects, which is not surprising given the results above that show that there was almost no impact of the plebiscite on the types of projects chosen as the general project. For the women's project, the negative coefficient on $ELITE \times RANK \times ELECTION$ in column (8) indicates that the plebiscites make the project chosen by the women's process look more like the preferences of the village elite and less like the preferences of ordinary villagers, although the coefficient is of only borderline statistical significance ($p = 0.096$). Similarly, the negative coefficient on the triple interaction of log HH per-capita expenditure, RANK, and ELECTION indicates that the relatively affluent are more likely to have their highly ranked projects selected as the women's proposal when plebiscites are utilized than when meetings are used. These results are likely driven by the fact that roads are more likely to be chosen as the women's project in the plebiscite treatment, and roads are preferred by the elites, by men, and by the wealthy.

3.1.2. *Project Location*

In practice, qualitative evidence suggests that the key political question to be determined in the KDP process is not the type of project, but rather where the project should be located.

Each area of the village may have their own preferred project type, but virtually everyone in the

¹³ Columns (2) and (3) are estimated separately, since the detailed X characteristics shown in column (3) are not available for the elite sample.

village I interviewed reported that they would strongly prefer a suboptimal project type in their own hamlet to their most preferred project type located somewhere else in the village where they would not be able to use it.

Under the assumption that everyone's most preferred project is a project in their own hamlet, moving from a meeting-based system to a plebiscite-based system has several clear predictions. First, the representative meeting process allocates equal numbers of votes in the meeting to each hamlet, whereas in the plebiscite, the number of votes likely depends on population (assuming a uniform participation rate in elections). This suggests that one would expect the plebiscite to favor hamlets with large populations relative to the meeting treatment (Ansolabehere, Gerber and Snyder 2003).

Second, the meeting is typically held in the village town hall. Although votes are allocated in meetings equally to each hamlet, the meeting's location in the village town hall means that the number of attendees at the meeting is typically skewed in favor of hamlets located close to the village town hall. To the extent that these people can influence the meeting even though they cannot vote (for example, by dominating the conversation), one would expect that the plebiscites would favor more outlying hamlets, given that polling stations were located in each hamlet.

The predictions on whether the plebiscite should locate projects in poorer areas are less clear. To the extent that the number of attendees at meetings determines who attends meetings, one might expect the poor to be less likely to attend meetings. Since the cost of voting in an election is much lower than the cost of attending a meeting (10 minutes vs. 3 hours), it is plausible that the poor might be relatively more likely to vote than to attend meetings, in which

case the plebiscite treatment would increase the power of the poor.¹⁴ More generally, meetings may be more easily captured by elites than elections, since elite individuals may be more vocal at meetings than poorer villagers (Olken 2007).

To examine these questions, I first plot the probability distribution of the selected project according to various village characteristics. As can be seen in Figure 2, plebiscites did not change the probability that the general project would be located in a poor relative to a wealthy hamlet, but they did increase the likelihood that selected women's projects would be constructed in relatively impoverished hamlets. (Hamlets were ranked in terms of their poverty by the village head before the project began.) Thus, while plebiscites may have led selected project *types* for the women's proposal to move closer to the preferences of the elite, they simultaneously increased the likelihood that selected projects would be *located* in poorer areas of the village.

Plebiscites affect locations of projects in other ways as well. Figure 3 shows that, contrary to the predictions outlined above, plebiscites also resulted in projects being more likely to be located in *less populous* hamlets, rather than more populous hamlets. This is particularly true for the general project. This goes directly against the hypothesis that the plebiscite should help more populous areas. One possibility, suggested by the experience of several villages in fieldwork, was that in a situation where there are more than two hamlets, no hamlet has an outright majority. Large hamlets may be tempted to go it alone, hoping to win with a plurality, whereas small hamlets may better foresee the need to form coalitions in order to win.

Finally, as shown in Figure 4, plebiscites decreased the probability that projects selected by both the general and women's proposals would be constructed in isolated hamlets – i.e., those

¹⁴ Technically this relationship is ambiguous, since the poor have lower incomes (and thus a higher utility of money, and more of a need to work) but also lower wages (and therefore a lower opportunity cost of time), and it is not clear theoretically which effect dominates. Jayachandran (2006) finds evidence that income effects are particularly important in the context of poor, rural villagers in developing countries.

hamlets that are located furthest from the center of the village (I group hamlets into quartiles according to their distance from the center of the village). This is also surprising, given that outlying hamlets tend to have fewer supporters at village meetings, but should have had an easier time voting in the election, since the election was held in each hamlet.

To investigate the impact on project location more systematically (and, in particular, to control for these various factors simultaneously), I estimate conditional logit specifications of the form:

$$\Pr(\mathbf{CHOSEN}_v \mid \sum_{d=1}^{D_v} \mathbf{CHOSEN}_{vd} = T_v) = \frac{\exp \left[\sum_{d=1}^{D_v} \mathbf{CHOSEN}_{vd} (\gamma_{phase} X_{vd} + \beta \mathbf{ELECTION}_v \times X_{vd}) \right]}{\sum_{\mathbf{d}_{vd} \in S_v} \exp \left[\sum_{d=1}^{D_v} \mathbf{d}_{vd} (\gamma_{phase} X_{vd} + \beta \mathbf{ELECTION}_v \times X_{vd}) \right]} \quad (4)$$

where v is a village and d is a hamlet (*dusun*). Once again the coefficients γ are allowed to vary by project phase. \mathbf{CHOSEN}_{vd} equals 1 if the hamlet was chosen for project construction and 0 if not. X indicates a group of hamlet characteristics. The coefficients of interest are β , which represent the differential likelihood of a hamlet of type X receiving the project in election areas vs. non-election areas. Robust standard errors are clustered by village.

The results are presented in Table 6. These results confirm the qualitative patterns shown in the Figures. For the women's project, the results indicate that the plebiscites resulted in projects that were more likely to be located in poorer hamlets. Particularly for the general project, the plebiscite also resulted in projects that were located in less populous, but more centrally located, hamlets.¹⁵

¹⁵ As an aside, the overall coefficient (as opposed to the interaction) on hamlet poverty shows that, at least based on the village head's ranking of which hamlets are richest and which are poorest, poorer hamlets are more likely to subsequently receive the general project, both with and without the direct elections. This pattern can also be seen in Figure 3.

3.1.3. Interpretation of results

Overall, the data suggests that the main effect of plebiscites was felt in the women's project. For the women's project, the plebiscites resulted in projects located in poorer hamlets, but also in projects that looked closer to preferences of the village elites. One way of reconciling these two results is to recall that, in the experimental design, the plebiscite process did not affect the agenda setting within these hamlets. It is possible that in poorer hamlets, poor women were less involved in the agenda setting stage, so the women's projects proposed in these hamlets were more elite dominated. Consistent with this, the poorest hamlet was 19.2 percentage points more likely to propose a road for the women's project than the poorest hamlet, though this result is not statistically significant (p-value 0.12; results available on request). When time came to vote, however, the newly enfranchised poorer women may have preferred to vote for sub-optimal project type located in their area than in an optimal project type located too far away to be useful. This suggests that while the plebiscite process is successful to some degree at enfranchising poorer women in the final decision making process, fully enfranchising poorer women would require increasing their participation at the agenda-setting stage as well.

An interesting question is why the change in political process affected the selection of projects much more in the women's project than in the general project. Qualitative evidence from the study villages suggests one potential explanation for these differential results. In particular, men – who often dominate the discussion surrounding the general project – may be able to strike deals amongst themselves in which those who lose out from the political process in one year receive benefits in a future year. If so, the change in political power induced by the plebiscite treatment may have changed the allocation of these future promises, even if the project

chosen this year remained unchanged – i.e., this may be an empirical example of what has been termed a Political Coase Theorem (Acemoglu 2003).¹⁶ The elite men in the village are able to make these types of dynamic commitments to one another because they are frequently involved in village decision making, so promises can be sustained by their repeated future interactions. For women, whose political power in the KDP process studied here is very much the exception to village politics rather than the norm, the political process investigated here may have been more of a one-shot game, making it difficult to offset the change in political power induced by the plebiscite with promises of future transfers.

3.2. *Project Satisfaction and Support*

The previous analysis has shown that plebiscites had relatively little impact on the types of projects chosen for the general project and served to move the selected women’s projects towards the types of projects chosen by village elite. One might expect, given these results, that the plebiscite process would not have been particularly popular in the villages.

However, the opposite is true. Table 7 shows the impact on responses, from the second round of the household survey, of people’s perceptions about the KDP decision-making process in their village. Each cell in Table 7 is the coefficient β from the following regression:

$$OUTCOME_{vhi} = \alpha_{phase} + \beta ELECTION_v + X'_{vh}\gamma + \varepsilon_{vhi} \quad (5)$$

For ease of interpretation, I estimate this equation using ordinary least squares; estimation using ordered probit and probit models produces qualitatively similar outcomes (see Olken (2008)).

For all outcomes, more ‘positive’ answers have been consistently coded as having higher ordered

¹⁶ For example, in one village visited by the author, the village head explained that, prior to knowing about the experiment, he had been planning on using his influence at the meeting to channel project resources towards a section of his village known as Hamlet Five, which had not yet received a development project during his tenure as village head and whose support he needed in the upcoming village head election. In response to the election treatment, the village head convinced the citizens of the section of the village known as Hamlet Four to vote for Hamlet Five’s project in the general project election by promising them that, in the future, he would lobby the district government to bring an additional road project to Hamlet Four.

response values. All shown variables have 4 possible response categories, scaled so that 0 indicates lowest satisfaction and 1 indicates highest, except for “will you use the project,” which is binary. I cluster standard errors by village to take into account that there are multiple respondents h in each village v . The vector X represents a set of respondent control variables (gender, age, log per-capita expenditure, number of household members, and occupation dummies). Table 7 presents both pooled results and results separated out by the type of project (general and women’s) and gender of respondent.

As can be seen in Table 7, the plebiscite process resulted in greater villager satisfaction across a wide variety of measures. In the elections villages, villagers were more likely to report that the project was chosen in accordance with their wishes, was more likely to benefit them personally, and that they were more likely to use the project. They are also more likely to respond that the project was fair, that the project was chosen in accordance with the ‘people’s aspirations’ (*aspirasi masyarakat* – a broad measure of legitimacy), and that they were satisfied with the KDP project overall.

The magnitude of these changes in satisfaction is substantial. To interpret the magnitudes, note that overall, the plebiscites resulted in an increase in 21 percentage points of people who said that the project chosen was in either very much or somewhat in accordance with their wishes, an increase of 18 percentage points of people who said they would benefit either very much or somewhat from the project, an increase of 10 percentage points of people who said they would use the project personally, and increase overall satisfaction with the KDP program by 13 percentage points.¹⁷

¹⁷ Authors calculations. For the multiple response variables examined in the tables, the increase is 6 percentage points in the 0-1 scale of the project being according to wishes, 13 percentage points in the 0-1 scale of benefitting from the project personally, and 10 percentage points in the 0-1 scale of satisfaction with the program (see column 1 of Table 7).

One question is whether the villagers' answers to the questions about the project actually reflect views about government more generally, rather than specifically answering questions about the KDP program. To investigate this, the last two rows of Table 7 repeat the same regression, but with the dependent variable as questions about the respondent's job approval for the President of Indonesia and the head of the village. These questions are rescaled to the same 0-1 scale (with 0 worst and 1 best), and are taken from the same endline household survey where villagers were asked about the KDP program. I find no changes in overall job approval for the President or the village head. This suggests that the changes in responses to the KDP program are, indeed, about the KDP program, and not reflecting attitudes about government more generally. An important question is whether this increased stated support would translate into increased material support for the project. Although the study did not cover the actual construction phase, the second round of the household survey asked respondents about their plans for making voluntary contributions to the project.¹⁸ Again estimating equation (5), Table 8 shows that plebiscites substantially increased villagers' intentions to contribute to KDP project construction, particularly for the general project. Specifically, plebiscites raised the probability that individuals stated that they would contribute something (i.e. labor, money, food) to project construction by 17 percentage points. The majority of this is driven by planned labor contributions, which increase by 16 percentage points.¹⁹ Perhaps surprisingly, the plebiscite slightly decreased the probability that respondents would contribute money, though the decline is only statistically significant for male respondents, and appears more than offset by the increase

¹⁸ Note that given the design of KDP, this question could not have been answered using actual contribution data even if the study had included the construction phase, since which proposals were actually funded by the inter-village council, and thus for which projects we would observe actual contributions, is endogenous.

¹⁹ Note that 70% of those surveyed planned to contribute labor when meetings were utilized, whereas 84% did when elections were utilized. This 14 percentage point increase is slightly different from the 16 percentage point estimate in the Table because the estimate in the Table includes phase fixed effects.

in labor contributions. Nevertheless, to the extent these stated intentions were subsequently manifested in actual contributions, they would represent a substantial impact of the plebiscites on the general project.

3.3. Understanding satisfaction changes: changes in the process or changes in the project?

An important question in interpreting the dramatic increases in satisfaction described in the previous tables is whether these changes are due to the more participatory process, or are due to changes in the actual project selected. Although the project types chosen did not change in response to the plebiscites (particularly for the general project), it is possible that there were changes in the locations of the project, or more subtle changes that reflect better matching between projects selected and villagers' needs. Although it is hard to definitively disentangle the impact from changes in process from changes in project selected, there are a number of pieces of evidence that suggests it is change in the process that is primarily driving the satisfaction changes.

First, note that for the general project, reported satisfaction increased for both male and female respondents across a wide variety of the measures. By contrast, for the women's project, the increases in satisfaction came only on the part of female respondents, who were the only ones to participate in the decision making process for the women's project. Thus the increases in satisfaction precisely mirror the increases in participation – for both men and women for the general project, and for women only for the women's project – which suggests that participation itself may be responsible for the increases in satisfaction.

Second, we can investigate directly whether the results on satisfaction disappear once we control for the project selected. Table 9 performs this analysis. For ease of comparison, column (1) of Table 9 repeats the baseline specification from column (1) of Tables 7 and 8, i.e., including all respondents' answers to all the satisfaction and contribution questions for both the

general and women's projects. Column (2) adds as a control variable a dummy variable for whether the project included construction in the respondent's hamlet. Although this variable substantially increases satisfaction (e.g., it increases the "project chosen according to your wishes" variable by 9.6 percentage points, results not reported), including it as a control does not change the impact of the election variable on any of the listed satisfaction measures. Column (3) adds to the baseline specification dummy variables for each type of project, and likewise, the coefficients do not change.

The next columns then investigate whether it is changes in the match between the project chosen and the respondent's preferences that affect satisfaction. Column (4) adds to the baseline specification a dummy variable for the project type being chosen matching the project type the respondent said he or she most preferred during the baseline survey. Although once again this variable affects satisfaction (choosing the respondent's most preferred project type increases "project chosen according to wishes" by 5.5 percentage points), including it as a control does not substantially reduce the impact of the plebiscites on satisfaction. To capture the respondent's most preferred project, column (5) adds to the baseline specification a dummy for the project chosen being *both* the respondent's most preferred type and being located in the respondent's hamlet; once again, doing so does not substantially reduce the choice

A final concern is that the project could be changing in more subtle ways than type of project and location. To investigate this, at the time of the endline household survey, the respondents were asked to state their preferences among the various projects that were actually on the agenda.²⁰ Column (6) includes a dummy for whether the project actually selected was the respondent's most preferred project among the projects on the agenda. Once again, although this

²⁰ These rankings are potentially endogenous: since the project had already been selected at the time these rankings were elicited, respondents might be more likely to say that they preferred the project that had won the election in order to appear to have sided with the victor. These results should therefore be interpreted with some caution.

variable affects satisfaction (it increases “project chosen according to wishes” by 8.2 percentage points), including this as a control does not substantially reduce the impacts of plebiscites on satisfaction. Finally, column (7) includes *all* of the additional controls from columns (2) – (6) simultaneously: the project being located in the respondent’s hamlet, dummies for the type of project selected, the project being the respondent’s most preferred project type, the interaction of the project being the respondent’s preferred type and being located in the respondent’s hamlet, and the project being the respondent’s most preferred among all choices on the agenda. Despite including all these controls that capture changes in the project selected, the plebiscite treatment still has a dramatic impact on virtually all measures of satisfaction. Combined, these results suggest that, at least to the extent I can measure it in the data, endogenous changes in the actual project selected do not seem to be driving the satisfaction result

3.4. Heterogeneity in impacts

The results presented above represent average treatment effects of the plebiscites across the 49 villages in the experiment. These villages are spread over three provinces on three different Indonesian islands, and represent an average over a wide range of political, social, and economic conditions. This section examines the degree to which the impacts of the plebiscites on project satisfaction and support discussed above appear similar across these varied contexts, or whether there are important sources of heterogeneity in treatment effects.

I examine heterogeneity across several important dimensions: economic conditions (measured by mean predicted per capita expenditures among survey respondents), education levels (measured by the mean years of education of survey respondents), ethnic and religious makeup (measured by a Herfindahl index to capture within-village ethnic heterogeneity and by the percent of Muslims in the village), village political competitiveness (measured by having more than 1 village head candidate in the previous election), village political activism (measured

by the vote share in the last village election), and satisfaction with the KDP program (measured by the percent of respondents in the baseline survey who felt that their “voices were heard” in the typical KDP decision making process.)²¹

To estimate treatment effect heterogeneity, for each of the dependent variables in Table 7 and Table 8, I estimate the following regression via OLS:

$$OUTCOME_{vhi} = \alpha_{phase} + \beta ELECTION_v + \gamma ELECTION_v \times Q_v + \delta Q_v + X_{vh}'\gamma + \varepsilon_{vhi} \quad (5)$$

where Q_v are the village characteristics across which we wish to measure heterogeneous treatment effects and γ captures how the plebiscite treatment varies with characteristic Q .

The results are presented in Table 10. The most consistent interactions are those in column (1), which examines the impact of the plebiscite treatment with the mean log per capita expenditure in the village. For all 9 outcome variables considered, the interaction coefficients are negative, and they are statistically significant in 4 cases (fairness, people’s aspirations, labor contributions, any contributions) and almost statistically significant in one other case (project in accordance with respondent’s wishes, p-value 0.113). This suggests that the impacts of the plebiscites on satisfaction are consistently stronger in poorer villages.

To interpret the magnitude of these interactions, note that mean log per-capita expenditure in the 90th percentile village in the sample is 11.77, whereas mean log per-capita expenditure in the 10th percentile village is 11.26. The 10th percentile village is thus is 0.51 log points, or about 40%, poorer than the 90th percentile. The estimates imply that in the 10th percentile village, the impact of plebiscites on perceived fairness is an increase of 12 percentage points (coefficient 0.128, p-value 0.007), whereas in the 90th percentile the impact of plebiscites

²¹ Note that I code those respondents who refused to answer this question as if they felt their voice was not heard. Also, as discussed above, the baseline survey was conducted contemporaneously with the announcement of the treatment in several provinces, so it is possible that this measure of how much your voice was heard in the typical KDP process was contaminated by the treatment. However, this measure appears balanced across treatment and control (p-value 0.568), so empirically this does not appear to be a problem.

on perceived fairness is essentially zero (coefficient -0.011, p-value 0.778). The implied magnitudes (approximately double the mean effect at the 10th percentile and approximately zero at the 90th percentile) are similar for the other statistically significant variables in Table 10.

An important question is whether this heterogeneity by expenditure level is in fact about incomes, or whether expenditure is instead proxying for some other variable, such as education, propensity to participate in the political process, or dissatisfaction with the meeting-based process. These variables are investigated in the remaining columns of Table 10, but show little statistical significance and no other clear patterns. For example, although the impact on using the project is statistically significantly lower in ethnically fragmented villages, the other coefficients are a mix of positive and negative point estimates, with no clear pattern emerging. Similarly, the effect of plebiscites on using the project is higher when there is more political participation in the village (proxied by the share of people who voted in the previous village head election), but the impact of plebiscites on satisfaction with KDP is lower in those same villages. Thus, the main dimension of heterogeneity of the plebiscite's impact appears to be based on income levels.²²

3.5. Knowledge and Discussions

In political science, several theorists have argued that active discussions of issues among citizens are important both to increase legitimacy and to help citizens discover the socially optimal outcome (Fishkin 1991; Ackerman and Fishkin 2004). These types of discussions can take place in public forums, but can also take place in a variety of private settings or informal discussions outside the formal political process (Benhabib 1996). One might expect, in a

²² Alternatively, though power is limited I can include all 7 interactions simultaneously. Doing so yields very similar interactions between plebiscites and mean log per capita expenditure to the results in column (1) Table 9, except that the result on satisfaction in the first row becomes statistically significant and all of the coefficients are slightly larger.

plebiscite that involved an order of magnitude more people, that than ordinary citizen's discussions of the project would increase in preparation for the plebiscite.

To investigate the degree to which the change in political process affected these discussions, I use data from the second-round household survey in which households were asked about the degree to which they had discussed village development issues in the period before the survey. Table 11 reveals that plebiscites do not impact the general level private and public dialogue about development issues, at least not in the short timeframe within which this study was conducted. Specifically, I detect no statistically significant difference in the probability that a respondent discussed 'development issues in the village' in the last three months with anyone, with household members, or with members of the village government.

However, the political process does affect lobbying. In particular, Table 11 shows that respondents in plebiscite villages are 34 percentage points more likely to report that someone had a discussion with them to convince them to support a particular project.²³ This suggests that the election process engendered substantial lobbying to gather support for projects. We do not know whether these conversations were merely encouragement, or whether they contained promises of future transfers (as in the case study discussed in footnote 16). Nevertheless, they suggest that there was substantial lobbying activity in the village in response to the changed political process.

A second important measure of civic engagement is the degree to which individuals are knowledgeable about the outcome of the political process. To investigate this, Wave 2 of the household survey also asked respondents to name the type and location of selected KDP proposals in their villages. Table 11 shows, again by estimating equation (5), that plebiscites

²³ Note that the question shown in the table includes discussions to garner support for a representative to the village meetings or to garner support for a particular project. In results not shown in the table, however, I find that virtually all of the movement is coming from discussions to support a project.

substantially increase knowledge about the projects. When plebiscites are utilized, respondents are 18 percentage points more likely to correctly identify the type and location of the selected general proposal and 25 percentage points more likely to do so for the women's proposal. Female respondents are 31 percentage points more likely to be able to correctly identify the women's proposal in the plebiscite treatment. Thus, although there was little detectable increase in whether citizens had any discussions about village development, villagers were certainly much more aware of the outcomes of the political process in the plebiscite treatment.

4. Conclusion

This project investigated two alternate mechanisms through which villagers could choose how to spend money for infrastructure projects in their village: a representative meeting and a plebiscite. Each village selected two projects, a general project, chosen by all villagers, and a women's project, chosen exclusively by the women in the village. These experimental interventions affected only the final choice of which would be selected – the process of setting the agenda, in which each hamlet in the village nominated one general project and one women's project through a series of hamlet-level meetings, was unchanged across the experimental treatments.

The experiment found very different results for the two projects considered. For the general project, the plebiscite process resulted in substantially higher villager satisfaction with the political process, even though it had very limited impacts on the actual projects selected. For the women's project, not only did women's satisfaction increase, but the plebiscite process resulted in women's projects that were more likely to be located in poorer hamlets of the village.

One potential explanation for the difference between the general project and the women's project is that, for the general project, promises of future transfers may have been used to undo

the change in political power from the plebiscite. These deals may have occurred in the general project, but not in the women's project, because male elites from different hamlets are involved in village decision making every year, so their repeated interactions allow them to enforce agreements over time. By contrast, the KDP project was unusual in the role reserved for women, so women were in effect playing a one-shot game in which they could not credibly commit to future transfers. The ability of elites to enforce these types of inter-temporal commitments through their repeated interactions suggests a potentially beneficial role that elites may play in local politics, and is consistent with the theoretical requirements for a Political Coase Theorem to hold.

An important caveat is that this study was conducted in only 49 villages. Therefore, while the results that show large, statistically significant impacts on satisfaction and legitimacy are clearly valid, some caution must be used in interpreting the relative lack of an impact on project type and project location for the general project, as there might have been small effects that would only have been detectable in a larger study. Nevertheless, if such effects existed, they were of much smaller order of magnitude than the effects of the plebiscite on citizen perceptions of fairness, legitimacy, and satisfaction with the project, which are large enough to be detected even in this relatively small sample size.

Although the experiment was conducted at the village level, the results speak to the broader debate about participatory vs. deliberative approaches to democracy more generally. In particular, the dramatically higher levels of citizen satisfaction with the plebiscite treatment, in which citizens could vote directly on which proposal they wish to have, lend well-identified evidence to the view that the ability to participate in the political process may affect utility (Frey and Stutzer 2005), and may help explain the growth of citizen referenda and initiative petition

systems, despite the many issues associated with such systems (Matsusaka 2005a; Matsusaka 2005b). The striking results on citizen satisfaction and legitimacy results confirm the view that broad participation in the political process can be a legitimizing force, even if the ultimate decisions taken do not change.

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Appendix A

As discussed in the text, in addition to the main plebiscite / meeting-based system discussed at length in the paper, several additional experimental sub-treatments were run in both Phase I and Phase II of the experiment. This Appendix discusses briefly these additional sub-treatments and robustness exercises that show that these sub-treatments are not driving the main results discussed in the paper.

In Phase I of the experiment, there were four sub-versions of the meetings treatment: open meetings, in which all villagers who attended meetings were eligible to vote, representative meetings, in which each hamlet (in North Sumatra) or neighborhood (in East Java) elected a representative to each meeting, and limited representative meetings, in which each hamlet (in North Sumatra) or neighborhood (in East Java) elected a representative and in which the representatives (or immediate family members) were not allowed to have had any previous government experience, or parliament meetings, where only members of the pre-existing village parliament could vote. The idea of these additional sub-randomizations was to investigate how different attendees at the meetings affected the results of the meetings.

In addition, meetings were randomized into one of five voting methods: (1) single round plurality voting system (as in the plebiscites) with secret voting, (2) single round plurality with open voting, (3) multiple round voting system where votes would continue until a single project received a majority of votes with secret voting, (4) multiple round voting with open voting, or (5) no specified voting rule, where the meeting could vote however they wanted.

In Phase II of the experiment, different sub-treatments were run in the meeting treatment: a) to investigate commitment issues, the meeting villages were randomized into deciding whether to plan for 2 year's worth of projects rather than the default of 1 year planning only and b) participants held 15-minute discussions in which they were grouped either within-hamlet or across-hamlets. In Phase II all voting was held using method (1) above.

For the main results of the paper, I group all of these results into the category 'meetings.' However, I have repeated the main results of the paper dropping each of these sub-varieties of meetings one-by-one, and the main qualitative results of the paper (in particular, on location of project and satisfaction with project) are robust to dropping each of these sub-treatments.

As an example, Appendix Table 1 replicates the satisfaction results in column (1) of Table 7, dropping each of the sub-varieties of meetings one-by-one. As is evident from Appendix Table 1, dropping any of the sub-varieties of the meeting does not substantially change either the qualitative or quantitative estimates of the impact of the meeting treatment on any of the measures of reported satisfaction. (Similar robustness checks for other tables are available from the author on request.) The fact that the results are robust to dropping each of these sub-varieties ensures that the results reported here really are being driven by the plebiscites treatment, rather than one of the sub-varieties of the meeting experiment.

Table 1: Experimental Design

Province	Plebiscite	Meetings
<i>Phase I</i>		
North Sumatra	5	13
East Java	3	7
<i>Phase II</i>		
Southeast Sulawesi	9	11

Notes: Each cell displays the number of villages in each treatment.

Table 2: Summary Statistics

	(1)	(2)	(3)	(4)		(1)	(2)	(3)	(4)
	Mean in meeting group	Difference between plebiscite and meeting group	P-value	Num obs		Mean in meeting group	Difference between plebiscite and meeting group	P-value	Num obs
<i>Village characteristics</i>					<i>Village government characteristics</i>				
Village population (1000 inhabitants)	2.401 [2.726]	-0.295 (0.598)	0.625	49	Village head age	45.935 [8.370]	2.368 (3.059)	0.443	47
Agricultural wage (1000 rupiah)	21.023 [5.892]	-1.061 (1.443)	0.466	43	Village head years of education	11.645 [2.026]	-1.409 (0.788)	0.081*	47
Percent village roads that are asphalt	0.305 [0.269]	-0.042 (0.062)	0.507	49	Number of village head candidates in last village head election	2.207 [1.013]	0.304 (0.383)	0.432	44
Number of hamlets per village	4.813 [1.839]	-0.633 (0.423)	0.142	49	More than one candidate in last village head election	0.724 [0.455]	0.089 (0.116)	0.449	44
Number of churches and mosques per village	2.438 [1.933]	-0.220 (0.563)	0.698	49	Share of population that voted in last village head election	0.888 [0.100]	-0.004 (0.031)	0.910	43
Distance to subdistrict capital (km)	5.766 [6.509]	3.548 (2.173)	0.109	49	Village head's margin of victory in last election (if challenger)	0.263 [0.262]	-0.011 (0.069)	0.870	33
Village ethnic fragmentation	0.268 [0.250]	-0.075 (0.056)	0.190	49	Number of village government executive branch members	8.516 [2.850]	-0.616 (0.703)	0.386	47
Village religious fragmentation	0.106 [0.137]	0.011 (0.051)	0.827	49	Share of hamlets represented in village executive branch	0.853 [0.240]	0.043 (0.056)	0.442	47
<i>Survey respondent characteristics</i>					<i>Survey respondent characteristics</i>				
Survey respondent predicted log per- capita expenditure	11.505 [0.279]	0.034 (0.066)	0.602	224	Number of people in village Parliament	7.750 [3.627]	-0.976 (0.832)	0.249	36
Survey respondent years education	8.925 [3.088]	-0.519 (0.616)	0.404	244	Share of hamlets represented in village parliament	0.843 [0.202]	0.054 (0.056)	0.339	36
Survey respondent is female	0.431 [0.497]	0.025 (0.023)	0.292	245	Number of village parliament meetings in last year	5.714 [4.689]	-1.853 (0.878)	0.041**	44
Survey respondent age	41.700 [12.021]	1.896 (1.701)	0.271	245	Village parliament district system (1 = district, 0 = at large)	0.241 [0.435]	0.081 (0.148)	0.587	45
Survey respondent is farmer	0.594 [0.493]	-0.052 (0.084)	0.541	245	Number of previous KDP projects	1.875 [0.976]	-0.239 (0.318)	0.455	49

Notes: Column (1) presents the mean of the listed variable in the meeting villages, with standard deviations in brackets. Column (2) presents the difference between election and meeting villages, estimated with wave fixed effects, with robust standard errors in parentheses clustered at the village level. Column (3) shows the p-value from a test of the null hypothesis that the listed variable is not different between elections and meeting villages. Column (4) shows the number of observations of the listed variable. * significant at 10%; ** significant at 5%; *** significant at 1%.

Table 3: Project types

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Project Type	Most Preferred Project Type									
Chosen	Gender		Per-Capita Expenditure Quartile				Land Owner			
	General	Women's	Male	Female	Q1	Q2	Q3	Q4	No	Yes
Proposal	Proposal									
Road	54%	35%	61%	38%	33%	47%	57%	63%	59%	34%
Bridge	10%	0%	3%	1%	4%	2%	2%	2%	2%	3%
Clean water	8%	27%	3%	23%	9%	20%	11%	9%	15%	3%
Irrigation	19%	22%	22%	20%	35%	20%	16%	11%	15%	36%
Sanitation	4%	4%	2%	2%	2%	5%	2%	0%	1%	4%
Schools	4%	8%	2%	4%	5%	2%	4%	2%	3%	3%
Scholarship	0%	0%	4%	7%	7%	2%	5%	6%	3%	8%
Health	0%	2%	1%	5%	5%	2%	2%	2%	2%	5%
Other	2%	2%	2%	1%	0%	0%	2%	6%	1%	4%
Obs	52	49	137	101	55	55	55	55	164	73

Notes: Data in columns (1) and (2) show the project types chosen by the village, for the general and women's project respectively. Number of observations can be greater than the number of villages because several projects fell into multiple types. Columns (3) through (10) give preferred project of respondents to wave I of household survey type broken down by respondents' gender, estimated per capita household expenditure, and whether or not the respondent owns land. Q1 refers to the poorest income quartile and Q4 to the wealthiest.

Table 4: Impact of Plebiscites on Project Type

	(1)	(2)	(3)	(4)	(5)	(6)
	Whole Sample			Available Project Types		
	Both Proposals	General Proposal	Women's Proposal	Both Proposals	General Proposal	Women's Proposal
Road/bridge × election	0.601 (0.839)	-0.156 (1.112)	1.264 (1.141)	0.859 (0.835)	-0.173 (1.116)	1.730 (1.098)
Water/sanitation × election	0.353 (0.779)	-0.371 (1.327)	0.796 (1.345)	0.172 (0.759)	-0.380 (1.326)	0.488 (1.342)
Irrigation × election	0.504 (0.978)	0.687 (1.195)	0.157 (1.291)	0.417 (1.124)	0.854 (1.466)	-0.502 (1.680)
Phase × project type fixed effects	YES	YES	YES	YES	YES	YES
Observations	384	192	192	306	159	147
P-value from joint test	0.85	0.79	0.55	0.46	0.87	0.18

Notes: Results from conditional fixed-effects logit regression, where each observation is a project type in a village. Robust standard errors in parentheses adjusted for clustering at the village level. The dependent variable is a dummy equal to 1 if the respective project type was chosen by the village. In columns 1 through 3 all four project types are included as alternatives, whereas in columns 4 through 6 only project types available in the respective village are included. Other (education and health projects) is the omitted category. Phase is a dummy variable equal to 1 if the village's treatment was assigned during Phase I of the study (see Table 1). The conditioning variable in columns 1 and 4 is village × general/women's project and in columns 2, 3, 5, and 6 is village.

* significant at 10%; ** significant at 5%; *** significant at 1%.

Table 5: Impact of plebiscites on project rank

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Whole Sample			General Proposal			Women's Proposal		
Rank × election	-0.233 (0.218)	-0.217 (0.207)	8.654* (5.213)	-0.220 (0.235)	-0.215 (0.235)	4.349 (5.813)	-0.099 (0.215)	-0.081 (0.214)	17.142** (7.832)
Elite × rank		-0.079* (0.041)			-0.003 (0.050)			-0.089 (0.066)	
Elite × rank × election		-0.117 (0.108)			-0.108 (0.128)			-0.214* (0.129)	
Male × rank			-0.106* (0.057)			-0.036 (0.120)			-0.154 (0.124)
Male × rank × election			-0.387 (0.276)			-0.357 (0.275)			-0.613 (0.505)
HH p.c. expend. × Rank			-0.003 (0.072)			0.034 (0.175)			0.128 (0.177)
HH p.c. expend. × rank × election			-0.769* (0.465)			-0.396 (0.524)			-1.513** (0.687)
Time to village office (%) × rank			0.171 (0.122)			0.080 (0.236)			0.158 (0.347)
Time to village office (%) × rank × election			-0.043 (0.610)			-0.155 (0.727)			0.780 (0.784)
Hamlet poverty score (%) × rank			0.247 (0.175)			0.018 (0.270)			0.470* (0.267)
Hamlet poverty score (%) × rank × election			0.064 (0.308)			0.383 (0.348)			-0.285 (0.437)
Minority HH × rank			-0.152 (0.206)			0.127 (0.303)			-0.614** (0.307)
Minority hh × rank × election			0.085 (0.328)			-0.088 (0.406)			0.358 (0.488)
Project type fixed effects	YES	YES	YES	YES	YES	YES	YES	YES	YES
Rank × phase controls	YES	YES	YES	YES	YES	YES	YES	YES	YES
Sample	HH only	HH, Elite	HH only	HH only	HH, Elite	HH only	HH only	HH, Elite	HH only
Observations	965	2190	819	420	961	343	560	1295	491
P-value from joint test of rank × election interactions			0.150			0.830			0.000

Notes: Results from conditional fixed-effects logit regression, where each observation is a project type for a particular respondent in the household and / or elite survey. Robust standard errors in parentheses, adjusted for clustering at the village level. The dependent variable is a dummy equal to 1 if the respective project type was chosen by the village. In columns 1, 3, 4, 6, 7, and 9, the sample includes household respondents and in columns 2, 5, and 8, it includes both household and elite respondents (village heads, village parliament heads, and hamlet heads). The individual's most preferred project receives a rank of 1. Phase is a dummy variable equal to 1 if the village's treatment was assigned during Phase I. Male is a dummy equal to 1 if the respondent is male, HH p.c. expend. gives estimated household per capita expenditure, time to village office gives time from the respondent's hamlet to the village office and is measured as a percentile among hamlets within the village, poverty score is a ranking of hamlets by poverty and is measured as a percentile, and minority household is a dummy equal to one if the household is a minority in its village. Relatively central hamlets and relatively wealthy hamlets correspond to low percentiles. The p-value is from a Chi² test of the joint significance of the election rank interactions. The conditioning variable is respondent × general/women's project in columns 1 through 3, and respondent in columns 4 through 9. * significant at 10%; ** significant at 5%; *** significant at 1%.

Table 6: Impact of Plebiscites on Project Location

	(1)	(2)	(3)
	Whole Sample	General Proposal	Women's Proposal
Hamlet affluence (%)	-1.048 (0.654)	-3.104*** (1.147)	1.052 (0.894)
Hamlet affluence(%) × election	-2.357* (1.276)	-2.333 (2.229)	-5.386** (2.210)
Hamlet population share	2.414 (2.077)	8.064** (3.855)	-2.568 (2.972)
Population share × election	-8.478* (5.092)	-16.217* (8.454)	2.484 (7.319)
Time to village office (%)	0.626 (0.665)	1.665 (1.152)	-0.087 (0.977)
Time to vill. office(%) × elect	-3.460** (1.508)	-6.365** (2.627)	-1.346 (1.965)
Minority hamlet	-0.835 (0.917)	-0.450 (1.445)	
Minority hamlet × election	1.042 (1.327)	-1.420 (1.657)	
Hamlet characteristic × phase fixed effects	YES	YES	YES
Observations	318	172	158
P-value from joint test of election interactions	0.10	0.13	0.11

Notes: Results are from conditional fixed-effects logit regression. Robust standard errors in parentheses, adjusted for clustering at the village level. The hamlet affluence measure is the village head's ranking of hamlets in his village by poverty. Population share gives the hamlet's share of village population. A high percentile corresponds to relatively affluent hamlets and distant hamlets. Phase is a dummy variable equal to 1 if the village's treatment was assigned during Phase II (i.e., the village is located in Southeast Sulawesi). The p-value gives the/joint significance of the hamlet characteristic*election interactions. The conditioning variable is village × general/women's project in column 1 and village in columns 2 and 3. * significant at 10%; ** significant at 5%; *** significant at 1%.

Table 7: Impact of Plebiscites on Perceptions of KDP process

	(1)	(2)	(3)	(4)	(5)
		General Project		Women's Project	
	Pooled	Men	Women	Men	Women
<i>Questions about KDP process:</i>					
Was the project chosen in accordance with your wishes?	0.059** (0.025)	0.107*** (0.032)	0.104** (0.051)	0.010 (0.045)	0.071* (0.038)
Will the proposal benefit you personally?	0.126*** (0.044)	0.132 (0.082)	0.252*** (0.064)	0.053 (0.055)	0.102 (0.072)
Will you use the project?	0.106*** (0.038)	0.076 (0.058)	0.176*** (0.057)	0.098 (0.061)	0.108* (0.059)
Was the chosen proposal fair?	0.060** (0.027)	0.094*** (0.035)	0.118** (0.046)	0.011 (0.043)	0.070* (0.037)
Is the chosen proposal in accordance with the people's aspirations?	0.050** (0.025)	0.071** (0.033)	0.110*** (0.040)	0.000 (0.036)	0.059 (0.040)
Are you satisfied with KDP? (not project specific)	0.103** (0.043)	0.115** (0.046)	0.086 (0.053)	.	.
<i>Questions about government more generally:</i>					
Job approval of President of Indonesia	0.032 (0.024)	0.040 (0.032)	0.051 (0.033)	.	.
Job approval of village head	-0.023 (0.054)	-0.044 (0.061)	0.034 (0.061)	.	.

Notes: Each cell is the coefficient on the plebiscite dummy from a different regression. All questions except 'will you use the project' are 4-point, multiple-ordered response questions on a scale from 0 (worst) to 1 (best); will you use the project is a dummy variable. All regressions are estimated using ordinary least squares with robust standard errors, adjusted for clustering at the village level; results are qualitatively similar using ordered probit and probit models. In column 1, the sample includes both the general and women's proposals, whereas in columns 2 and 3 it is limited to the general proposal and in columns 4 and 5 to the women's proposal. All regressions include phase fixed effects and controls for gender, age, log per capita expenditure, number of household members, and occupation.

* significant at 10%; ** significant at 5%; *** significant at 1%.

Table 8: Impact of plebiscites on KDP voluntary contributions

	(1)	(2)	(3)	(4)	(5)
		General Project		Women's Project	
	Pooled	Men	Women	Men	Women
<i>If the project happens, will you contribute...?</i>					
Labor	0.155** (0.062)	0.185** (0.085)	0.230** (0.096)	0.112 (0.077)	0.070 (0.100)
Money	-0.043 (0.027)	-0.093* (0.053)	0.020 (0.049)	-0.086** (0.040)	-0.022 (0.056)
Anything	0.168*** (0.056)	0.176** (0.083)	0.305*** (0.072)	0.103 (0.072)	0.134 (0.088)

Notes: See notes to Table 7. Dependent variables are 0/1 dummies, with "yes" receiving a score of 1 and "no" a score of 0. See also Notes to Table 7.

* significant at 10%; ** significant at 5%; *** significant at 1%.

Table 9: Controlling for project selected

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Specification adds controls for...						
	Main specification	Project chosen in respondent's hamlet	Type of project chosen dummies	Project chosen was respondent's most preferred project type	Project chosen was respondent's most preferred project type and was located in respondent's hamlet	Project chosen was respondent's most preferred among choices on agenda	All controls
<i>Questions on Perceptions of KDP process</i>							
Was the project chosen in accordance with your wishes?	0.059** (0.025)	0.051** (0.023)	0.056** (0.026)	0.056** (0.026)	0.052** (0.024)	0.050* (0.025)	0.045* (0.025)
Will the proposal benefit you personally?	0.126*** (0.044)	0.108** (0.042)	0.105** (0.045)	0.114** (0.045)	0.099** (0.043)	0.114** (0.044)	0.085* (0.044)
Will you use the project?	0.106*** (0.038)	0.101*** (0.037)	0.088** (0.036)	0.095** (0.038)	0.094** (0.038)	0.098*** (0.035)	0.081** (0.036)
Was the chosen proposal fair?	0.060** (0.027)	0.051* (0.025)	0.057** (0.027)	0.063** (0.028)	0.057** (0.026)	0.054* (0.027)	0.049* (0.025)
Is the chosen proposal in accordance with the people's aspirations?	0.050** (0.025)	0.042* (0.023)	0.045* (0.025)	0.048* (0.025)	0.045* (0.024)	0.045* (0.025)	0.038* (0.022)
Are you satisfied with KDP? <i>(not project specific)</i>	0.103** (0.043)	0.099** (0.042)	0.077* (0.040)	0.087** (0.041)	0.082** (0.040)	0.100** (0.043)	0.070* (0.037)
<i>Questions on KDP contributions</i>							
Labor	0.155** (0.062)	0.132** (0.057)	0.125** (0.059)	0.138** (0.061)	0.125** (0.058)	0.142** (0.060)	0.107* (0.058)
Money	-0.043 (0.027)	-0.045 (0.028)	-0.040 (0.026)	-0.046* (0.027)	-0.050* (0.028)	-0.046* (0.026)	-0.047* (0.027)
Anything	0.168*** (0.056)	0.145*** (0.052)	0.125** (0.051)	0.138** (0.053)	0.121** (0.051)	0.153*** (0.053)	0.102** (0.048)

Notes: This table examines the robustness of the results in Table 7 and Table 8 to controls that capture the project selected. Each cell reports the coefficient on the plebiscite dummy from a separate regression. Column (1) repeats the main specification in column (1) of Table 7 and 8 for ease of comparison. Column (2) adds a control for the project selected being in the respondent's hamlet. Column (3) controls for dummies for each type of project. Column (4) controls for the project being the type most preferred by the respondent. Column (5) controls for interaction of the project being in the respondent's hamlet and the project being the respondent's most preferred type. Column (6) controls for the project chosen being the respondent's most preferred among the actual projects on the agenda. Column (7) adds all controls from columns (2) – (6) simultaneously.

Table 10: Heterogeneity in Treatment Effects

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Interaction of plebescite variable with...						
	Mean log per capita expenditure	Mean years education	Village ethnic frag.	Percent Muslim	More than 1 village head candidate	Share voting in village head election	Felt voice heard in KDP
<i>Questions on Perceptions of KDP process</i>							
Was the project chosen in accordance with your wishes?	-0.210 (0.130)	0.008 (0.013)	0.065 (0.098)	-0.018 (0.063)	-0.036 (0.053)	0.216 (0.194)	0.031 (0.078)
Will the proposal benefit you personally?	-0.155 (0.246)	-0.023 (0.021)	-0.054 (0.185)	-0.083 (0.098)	-0.091 (0.094)	0.802 (0.491)	0.085 (0.148)
Will you use the project?	-0.097 (0.266)	-0.015 (0.021)	-0.334** (0.151)	-0.134 (0.100)	-0.149 (0.099)	0.714* (0.382)	0.167 (0.132)
Was the chosen proposal fair?	-0.272** (0.127)	0.006 (0.014)	0.080 (0.106)	-0.029 (0.070)	-0.029 (0.073)	-0.193 (0.222)	0.041 (0.089)
Is the chosen proposal in accordance with the people's aspirations?	-0.266** (0.121)	-0.002 (0.012)	0.109 (0.103)	-0.022 (0.065)	-0.041 (0.071)	-0.141 (0.200)	0.072 (0.086)
Are you satisfied with KDP? (not project specific)	-0.146 (0.231)	-0.024 (0.018)	0.168 (0.163)	0.075 (0.079)	0.112* (0.065)	-1.061*** (0.315)	-0.021 (0.138)
<i>Questions on KDP contributions</i>							
Labor	-0.610* (0.360)	0.021 (0.027)	0.129 (0.267)	-0.077 (0.114)	0.196* (0.113)	0.029 (0.650)	0.014 (0.168)
Money	-0.135 (0.171)	-0.003 (0.016)	0.070 (0.112)	-0.081 (0.059)	-0.034 (0.057)	0.168 (0.340)	-0.041 (0.088)
Anything	-0.653** (0.277)	0.013 (0.026)	0.142 (0.238)	-0.102 (0.102)	0.111 (0.083)	-0.466 (0.448)	0.102 (0.147)

Notes: This table examines heterogeneous treatment effects on the satisfaction measures examined in Table 7 and Table 8. Each cell reports the coefficient on the interaction of the plebescite variable with the dependent variable shown in the column heading from a different regression. The specification includes the main effect of the variable listed in the column, and the interaction of that variable with the election dummy.

Table 11: Impact of plebiscites on knowledge, dialog, and lobbying

	(1)		
	Pooled	Men	Women
<i>Knowledge:</i>			
Did the respondent correctly identify the type and location of the selected general proposal?	0.188* (0.100)	0.193* (0.108)	0.202 (0.134)
Did the respondent correctly identify the type and location of the selected women's proposal?	0.247*** (0.078)	0.202** (0.090)	0.311** (0.116)
<i>Discussions:</i>			
Did you discuss development issues with anyone?	0.013 (0.042)	0.017 (0.013)	-0.048 (0.102)
Did you discuss development issues with any household members?	0.012 (0.067)	0.016 (0.062)	-0.066 (0.110)
Did you discuss development issues with anyone in government?	0.000 (0.057)	-0.022 (0.064)	-0.021 (0.084)
<i>Lobbying:</i>			
Did anyone talk to you with the purpose of encouraging you to support a particular person as representative or support a particular activity?	0.341*** (0.109)	0.355*** (0.107)	0.273** (0.120)

Notes: See Notes to Tables 7 and 8.

* significant at 10%; ** significant at 5%; *** significant at 1%.

Figure 1: Project Type Selected

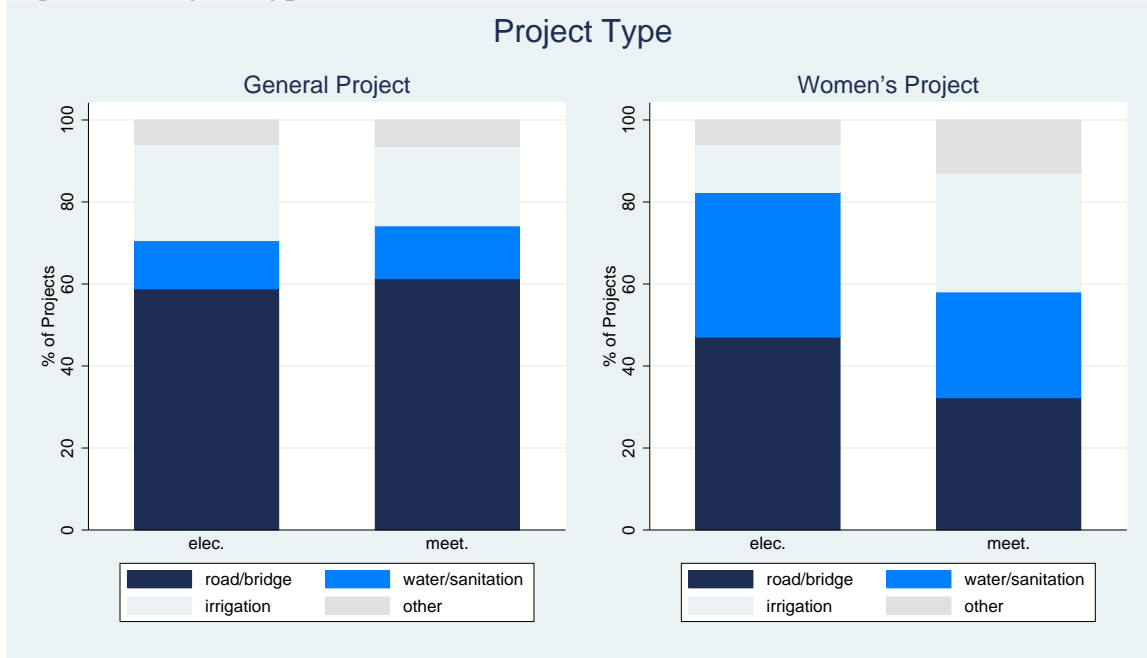
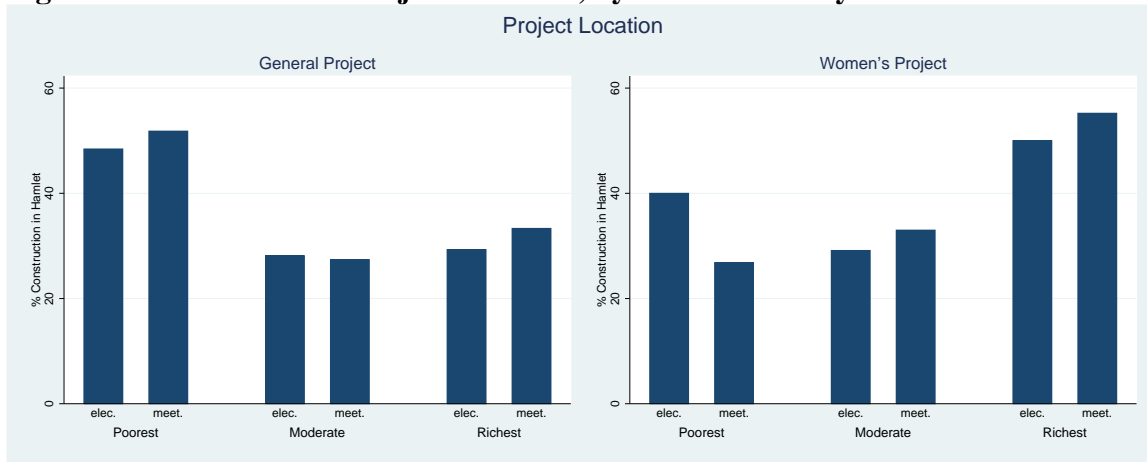


Figure 2: Plebiscites and Project Location, by Hamlet Poverty Rank



Notes: Poorest refers to the poorest hamlet in the village, richest to the wealthiest hamlet, and moderate to the hamlets in between, where hamlet affluence is ranked subjectively by the village head.

Figure 3: Plebiscites and Project Location, by Hamlet Population

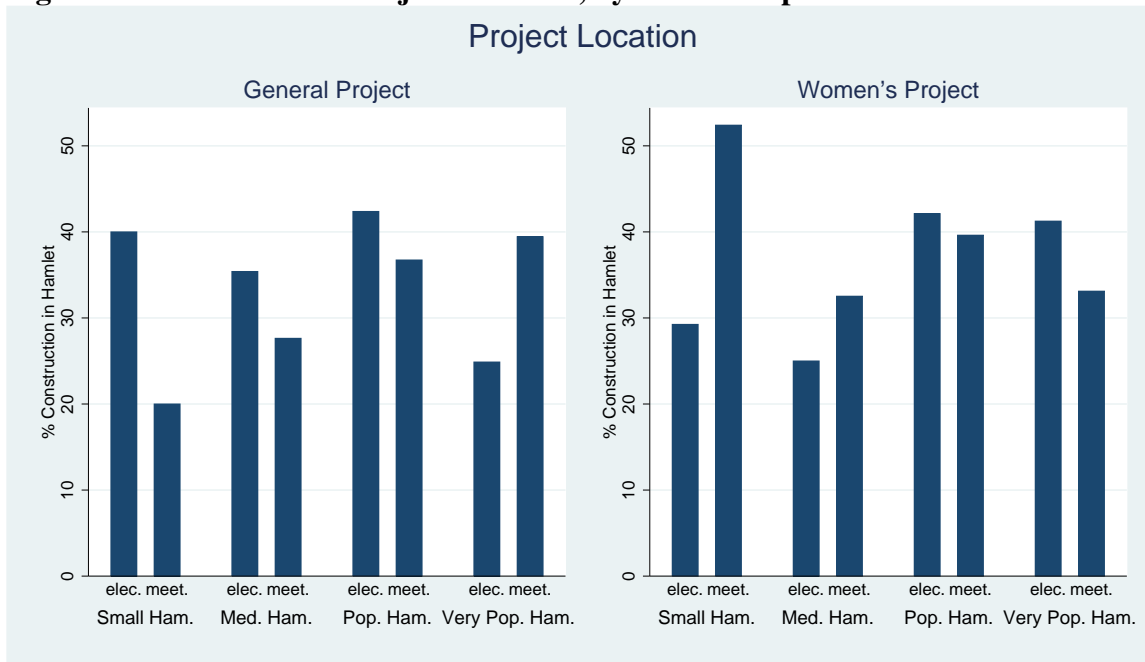
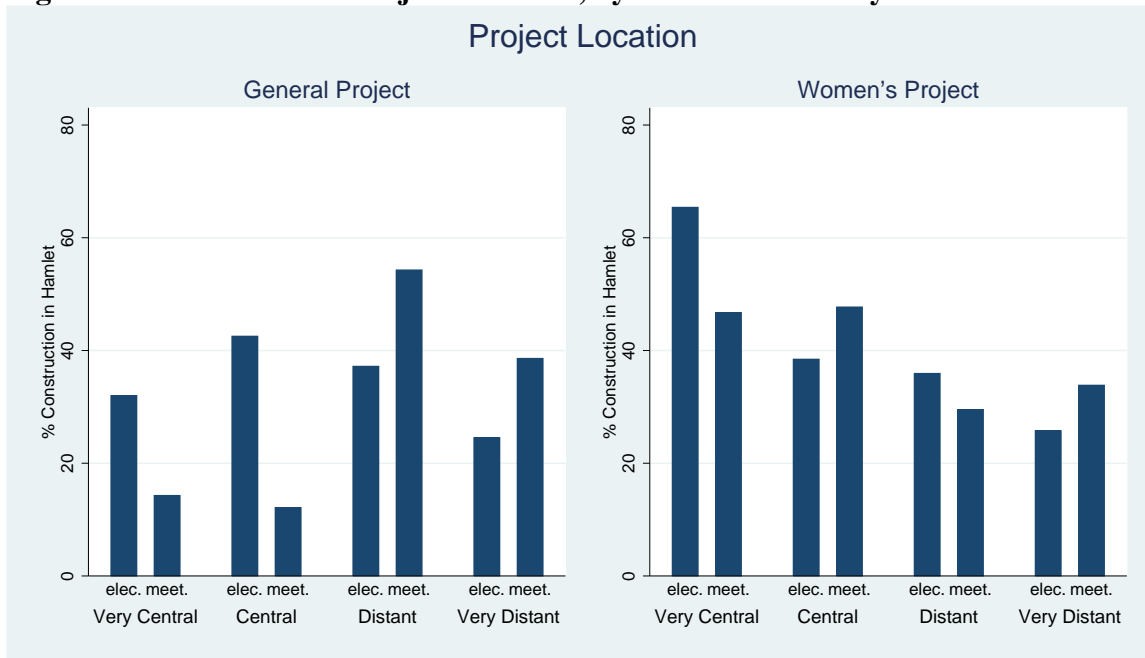


Figure 4: Plebiscites and Project Location, by Hamlet Centrality



Appendix Table 1: Robustness of Perception Results

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
		Drop Phase I Meeting Subtreatment:							Drop Phase II Meeting Subtreatment:			
	Full Sample	Open Meetings	Non-Elite Reps.	Elite Reps.	Parliament Meetings	Voting Rule 2	Voting Rule 3	Voting Rule 4	Voting Rule 5	Cross-Hamlet Small Groups	Within Hamlet Small Groups	Two Year Planning
<i>Questions</i>												
Was the project chosen in accordance with your wishes?	0.464** (0.188)	0.559*** (0.187)	0.409** (0.205)	0.464** (0.188)	0.446** (0.191)	0.472** (0.197)	0.455** (0.194)	0.387** (0.193)	0.569*** (0.181)	0.531*** (0.202)	0.369* (0.202)	0.465** (0.216)
Will the proposal benefit you personally?	0.484** (0.191)	0.566** (0.226)	0.489** (0.206)	0.468** (0.192)	0.483** (0.199)	0.540** (0.224)	0.439** (0.196)	0.475** (0.198)	0.571*** (0.195)	0.505*** (0.184)	0.459*** (0.177)	0.500** (0.202)
Will you use the project?	0.970** (0.381)	0.952** (0.391)	0.909** (0.408)	0.982*** (0.381)	0.908** (0.392)	0.965** (0.398)	0.958** (0.391)	0.943** (0.392)	1.069*** (0.384)	0.963** (0.388)	1.268*** (0.464)	0.977*** (0.374)
Was the chosen proposal fair?	0.431** (0.186)	0.478** (0.190)	0.359* (0.193)	0.453** (0.187)	0.438** (0.188)	0.421** (0.185)	0.437** (0.196)	0.356* (0.189)	0.529*** (0.185)	0.516** (0.218)	0.332* (0.200)	0.405* (0.239)
Is proposal in accordance with the people's aspirations?	0.405** (0.189)	0.464** (0.202)	0.318 (0.199)	0.431** (0.191)	0.425** (0.195)	0.391** (0.197)	0.421** (0.200)	0.325* (0.193)	0.522*** (0.189)	0.504** (0.211)	0.252 (0.202)	0.422* (0.225)
Are you satisfied with KDP? <i>(not project specific)</i>	0.625** (0.263)	0.614** (0.270)	0.617** (0.277)	0.689** (0.270)	0.652** (0.265)	0.710** (0.279)	0.624** (0.264)	0.604** (0.268)	0.620** (0.269)	0.545* (0.302)	0.475* (0.263)	0.431 (0.278)
Observations	444	384	388	428	398	412	412	416	406	354	356	384

Notes: Each column of this table replicates Column (1) of Table 7 with a different specification. As in Table 7, each cell reports the coefficient from the election dummy variable from a separate regression, with robust standard errors, clustered by village, in parentheses. Column (1) uses the full sample of all villages. Columns (2) – (12) repeat the same specification, but in each column villages that were assigned to the meeting subtreatment noted in the column heading are dropped.