

Direct Democracy and Resource Allocation: Experimental Evidence from Afghanistan¹

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Direct democracy is designed to better align policy outcomes with citizen preferences. To test this proposition, we randomized the method of selection of village-level development projects in 250 villages across Afghanistan, with villages assigned to select projects via either secret-ballot referenda or consultation meetings. We find that referenda reduce the influence of local elites over both the type and the location of village projects. Consistent with earlier experimental studies, we also find that referenda improve villagers' satisfaction with the local economy and governance structure. Our findings indicate that direct democracy can reduce elite capture even in contexts lacking democratic traditions.

I. Introduction

Direct democracy has the potential to ameliorate principal-agent problems in the allocation of public resources and thereby align allocation outcomes with public preferences (Matsusaka 2004, 2005). With decentralization efforts in developing countries often undermined by the diversion of public resources by incumbent elites (Bardhan 2002, Bardhan and Mookherjee 2006), the use of direct democracy may be seen as a means to improve the accountability of local resource allocation. However, while recent evidence (Olken 2010) shows that direct democracy can improve the

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legitimacy of allocation processes *per se*, it also casts doubt on whether direct democracy can substantively affect allocation outcomes, such as the type of local development projects. Such findings raise questions as to whether direct democracy is an effective tool in reducing elite capture.

To provide additional evidence on the effects of direct democracy, we study the effect of secret-ballot referenda on resource allocation outcomes and public satisfaction using a field experiment conducted across 250 villages in Afghanistan. Half of the villages were randomly assigned to select local development projects by secret-ballot referenda, with the remainder assigned to select projects at public meetings convened by elected village development councils. The referendum procedure allocated funding to projects voted for by villagers, while the meeting procedure allocated funding based on decisions made by development councils following the meeting. Both procedures employed an identical agenda-setting method, whereby the development council compiled the list of proposed projects after consultations with villagers. Given that formal democratic procedures conflict with customary norms of local decision-making in rural Afghanistan, the experiment provides a test of whether direct democracy can limit elite capture and obtain legitimacy even in a context lacking democratic traditions.

In order to isolate the effect of direct democracy on allocation outcomes and, specifically, on the ability of elites to impose their preferences, we compare allocation outcomes with the *ex-ante* preferences of three groups of villagers: male villagers; male elites; and female elites. We find that under both referenda and village meetings, male villagers' preferences are significant determinants of project selection. The preferences of male and female elites, however, only matter when selection occurs through consultation meetings. In addition, we find that projects selected through referenda are located farther away from the houses of village headmen, indicating that elites exercise less control over the placement of projects under referenda. The results thus indicate that direct democracy limits elite influence on resource allocation.

In theory, the finding that direct democracy limits elite influence has ambiguous welfare implications. Differences in the preferences of elites and the general public may reflect not only the relative benefits derived by each group, but also informational advantages of elites in assessing the expected benefits to the village of various projects (Labonne & Chase 2009; Rao and Ibanez 2005; Owen and van Domelen 1998). In the presence of such information asymmetries, direct democracy may thus lead to welfare-inferior outcomes even while limiting elite capture.

To identify the implications of direct democracy for welfare, we examine villagers' satisfaction with local economic and governance outcomes in the period following project selection. We find that referenda have a strong positive effect on villagers' satisfaction. Satisfaction is affected by the outcomes of the selection process, with lower satisfaction where selected projects were preferred by elites and higher satisfaction where selected projects were preferred by villagers. We also find that satisfaction in referendum villages is higher even after controlling for the type of selected project.

Thus, the results suggest that direct democracy increases satisfaction both by better aligning allocation outcomes with public preferences and by increasing satisfaction with the procedure.

Taken together, the finding that in the absence of direct democracy projects are located closer to the homes of village heads, along with the finding that elite influence has a negative effect on villagers' satisfaction with local governance, are not consistent with the benign interpretation of elite influence, but rather indicative of elite capture. This, in turn, suggests that the effects of principal-agent problems between the populace and its leaders dominate the countervailing effects of any information asymmetries, with direct democracy improving the welfare of the general population.

Our study contributes to the literature on the effects of political decision rules, in general, and direct democracy, in particular. Works on direct democracy have examined its effect on the size of government (Matsusaka 1995; Funk and Gathmann, 2011), political participation and redistributive spending (Hinnerich and Pettersson-Lidbom, 2010), discriminatory local policies (Hainmueller and Hangartner, 2013), and happiness (Frey and Stutzer, 2005). Using experimental variations similar to those employed in this study, Olken (2010) finds a strong positive effect of the use of direct democracy in Indonesia on villagers' satisfaction, but no effect on the choice of the general project itself, other than a relocation effect of women's projects towards poorer areas. Our results, however, show a much stronger effect of direct democracy, finding that it not only improves satisfaction, but also has a significant effect on allocation outcomes.

This paper is divided into six sections: Section II describes the setting of the experiment; Section III describes the design of the experiment, sample, and data collection; Section IV presents the methodology and results of the empirical analysis; Section V discusses the results; and Section VI concludes.

II. Background Information

The field experiment described in this paper was undertaken in coordination with the National Solidarity Program (NSP), a nationwide community-driven development program executed by the Government of Afghanistan. The following sections provide further details on NSP (II.1) and the structures for local governance and decision-making in rural Afghanistan (II.2).

II.1. National Solidarity Program

NSP was devised in 2002 by the Government of Afghanistan to deliver services and infrastructure to the rural population and build representative institutions for village governance. NSP has been implemented in 31,000 villages in all of Afghanistan's 34 provinces and has disbursed over \$1.1 billion to participating villages, making it the largest development program in the country. The program is structured around two interventions: (i) the creation of an elected Community Development Council (hereafter, development council); and (ii) the disbursement of block grants to

the development council for implementation of village projects. The program is executed by the Afghan Ministry of Rural Rehabilitation and Development, implemented by contracted NGOs, and funded by bilateral and multilateral donors.

In order to facilitate the creation of representative institutions for village governance, NSP mandates the creation of a gender-balanced development council through a secret-ballot, universal suffrage election. Once development councils are formed, NSP disburses block grants valued at \$200 per household – up to a village maximum of \$60,000 – to fund local development projects,² with villages required to contribute at least 10 percent of project costs, which they largely do in the form of labor. The development council selects projects in consultation with the village community. Selected projects are ordinarily focused on the construction or rehabilitation of infrastructure (e.g., drinking water facilities, irrigation canals, roads and bridges, or electrical generators) and human capital development (e.g., training and literacy courses).

The development council is mandated to be composed of an equal number of male and female members, with the total size being proportional to the number of families residing in the village. The average size of the development council in the sample is 16 people. The primary task of development councils is to design, select and implement NSP-funded projects, although there is evidence that development councils assume some responsibilities traditionally accorded to customary leaders, such as mediating conflicts, providing emergency assistance, and certifying documents (Beath et al. 2010). There is a moderate degree of overlap between development councils and customary leaders. Approximately 40 percent of development council members and 70 percent of development council heads were members of the pre-existing elite (Beath et al. 2013). People elected to development councils, however, are on average younger and better educated than customary leaders.

NSP implementation in a single village generally takes around three years. Following the creation of development councils, an average of twelve months elapses before project implementation starts, as development councils and villagers select and design projects (the stage of the process examined in this paper), receive funds, and, if necessary, procure contractors for project construction. Once construction commences, it takes up to nine months for projects to become operational, although the timeline varies significantly based on project type.

NSP intends to provide repeater block grants to participating villages, although villages have no guarantee of when, or if, these will arrive. The process for conducting follow-up elections for the development council is also uncertain. Per NSP rules, villages are supposed to hold reelections for development council positions every four years, although as follow-up elections are not facilitated, it is unclear whether these occur. Given this, and the general uncertainty which accompanies planned

² The average block grant in the villages included in the sample was approximately \$31,000.

future development activity in Afghanistan, villagers are likely to perceive NSP as a one-shot event, which limits the scope for log-rolling among local actors and does not provide strong reelection incentives to development council members.

II.2. Local Governance and Public Decision-Making in Rural Afghanistan

The lack of state consolidation in Afghanistan and the country's recent history of violent conflict have resulted in a weak central government (Barfield 1984). Rural communities have thus developed sophisticated – albeit informal – customary local governance structures and practices to administer justice, set community rules, and provide local public goods (Shahrani 1998; Pain and Kantor 2010). Despite the attempted reorganization and politicization of local governance by various regimes over the past decades (Nojumi, Mazurana, and Stites 2004; Rahmani 2006), customary local governance structures and practices are generally considered to remain pre-eminent (Brick 2008; Kakar 2005).

The foundation of governance in rural Afghanistan is the local *jirga* or *shura*, a participatory council that has traditionally managed local public goods and adjudicated disputes (Nojumi, Mazurana and Stites 2004). Council members tend to be elders of families in the village (Rahmani 2006) and convene when there is an issue to resolve (Boesen 2004). In addition to councils, villages ordinarily have a headman (termed a *malik*, *arbab*, or *qariyadar*) - usually a large landowner - who serves as a liaison between the village and the sub-national government (Kakar 2005). The local religious authority, the *mullah*, is responsible for conducting rites and mediating disputes involving family or moral issues (Rahmani 2006). The accountability of these institutions varies with the degree to which villagers are economically dependent on local elites (Pain and Kantor 2010).

A salient feature of the *jirga* and *shura* is the practice of decision-making by consensus. The consensus-based principle is considered to increase acceptance of decisions, but can be compromised by the pronounced social inequality that exists in rural Afghanistan (Boesen 2004), with decisions effectively made by a narrow group of prominent tribal elders (Kakar 2005). Despite the emphasis placed on inclusion, per the principle of *pardab*, which stipulates that women should be generally hidden from public observation (Azarbaijani-Moghaddam, 2009), women usually do not participate in the *shura* or *jirga* and thus are excluded from local decision-making.

III. Experimental Design

Our study is part of an impact evaluation of NSP that randomized assignment of not only project selection and prioritization procedures (hereafter, 'allocation procedures'), but also of the program itself (Beath et al. 2010, Beath, Christia, and Enikolopov 2012, 2013), along with development council election procedures (Beath et al. 2013). This section discusses the randomization of allocation procedures in the 250 treatment villages in the evaluation (III.1), while also detailing the sample (III.2), and the phasing of the experiment and data collection (III.3).

III.1. Allocation Procedures

After the election of the development council, villages select and prioritize projects to be funded by the NSP block grant. Villages in the sample were randomly assigned to one of two such procedures:³

Referendum: All adult village residents - both men and women - are eligible to vote, by secret ballot, for the project that they prefer from a list of proposed projects. At least 50 percent of eligible voters in the village must vote in order for the referendum to be valid. Projects with the most votes are selected for implementation, with the number of selected projects determined by the size of the block grant. Selected projects are prioritized according to the number of votes received, so the sequence of implementation reflects the project's relative popularity.⁴

Consultation Meeting: The development council convenes and moderates a meeting, open to all villagers - men and women - to discuss and select projects for funding. There is no specific requirement on how many villagers must attend in order for the meeting to be valid. Informal points-of-procedure (e.g., a show-of-hands) may be employed during the meeting, but no formal vote takes place. Based on the outcome of the discussion, but at its ultimate discretion, the development council selects and prioritizes projects for funding.⁵

Under both allocation procedures, the list of proposed projects is prepared using an identical agenda-setting procedure, whereby the development council compiles the list after consultation with the villagers. After the list of proposed projects is compiled, villagers cannot change the agenda irrespective of the method of project selection.⁶

The prescribed selection process – whether referenda or consultation meetings – enjoyed high levels of interest and participation due to the credible promise of capital investments linked to the process. However, both procedures are distinct from customary local decision-making practices, with the referendum being the more novel of the two procedures. In particular, the mandated involvement of women in the decision-making process represents a sharp break from customary practice (see Section IV.2).

³ A detailed guide on the procedures is available at: <http://nsp-ie.org/toolsanddata/sti/sti2e.doc>

⁴ In less than 8 percent of villages, the prioritized project was not the one receiving the most votes. Our results are robust to using the project that received the most votes as the prioritized project.

⁵ This procedure is similar to the customary practice in rural Afghanistan of calling a *jirga* or *shura* to decide on important community matters.

⁶ Although the nature of the consultation meeting would have allowed villagers to suggest a change in the list of proposed projects, there is no indication in the monitoring data that this happened. However, as the method of project selection was known when the lists of proposed projects were prepared, village leaders may have strategically chosen proposed projects (see discussion below).

III.2. Sample and Randomization

The randomization of allocation procedures occurred in 250 villages assigned to receive NSP, which formed the treatment group for the randomized impact evaluation of NSP (Beath, Christia, and Enikolopov 2012, 2013). The 250 villages are evenly split across ten districts in northern, northeastern, eastern, central, and western Afghanistan (see Figure 1). Despite the necessary exclusion of southern areas from the sample due to security concerns, the 10 districts are broadly representative of Afghanistan’s ethno-linguistic diversity, with five predominantly Tajik districts, four predominantly Pashtun districts, one predominantly Hazara district, and two districts with significant populations of Uzbek and Turkmen minorities.

Data from the 2007–08 National Risk and Vulnerability Assessment (NRVA) provides for a comparison of the 250 treatment villages with a randomly-selected stratified sample of the population of rural Afghanistan. Although there are no significant differences in the age of respondents or in their income (see Table A1 in the Online Appendix), evaluation villages are slightly more likely to be engaged in production activities related to agriculture and have slightly worse access to medical services and better access to electricity. These small differences are likely to be driven by the fact that villages located close to provincial centers were more likely to receive NSP in the first phase of the program, which concluded before the start of the study.

In addition to allocation procedures, the NSP impact evaluation also randomized the method of development council election (Beath et al. 2013). To ensure random and independent assignment across both election and allocation dimensions, villages were divided in quadruples using an optimal greedy matching algorithm (King et al., 2007). Specifically, 25 treatment villages in each district were paired to minimize differences in background characteristics⁷ within each pair (leaving one village unpaired) and then matched in pairs of pairs to form quadruples.⁸ Unpaired villages across districts were also grouped into two quadruples (leaving two villages unmatched). Each village within the quadruple (and the two unmatched villages) was then randomly assigned to one of four combinations of allocation procedures and development council election procedures. This assignment procedure ensures that each village in the sample had an equal probability of being assigned to either procedure.

[TABLE 1 HERE]

The randomization resulted in a well-balanced set of villages between the two allocation procedures. Table 1 presents a comparison between the two groups of villages across various pre-intervention characteristics. The differences between the two groups never exceed 13 percent of the standard

⁷ These characteristics include village size (based on data collected by Afghanistan’s Central Statistics Office) and a set of geographic variables (distance to river, distance to major road, altitude, and average slope).

⁸ Pairs of pairs were formed by performing the same matching procedure treating each pair as a single village with background characteristics that equal the average of the respective characteristics for the two villages in a pair.

deviation. A comparison of means indicates that for only one of eighteen indicators is the difference significant at the 10 percent level, with a p-value of 0.096.

III.3. Phasing of Intervention and Data Collection

The baseline survey was administered in September 2007, prior to the assignment of allocation procedures. Development council elections occurred between October 2007 and May 2008 and resource allocation between November 2007 and August 2008.⁹ Both development council elections and resource allocation were monitored, providing additional data on the respective processes. A follow-up survey was administered between June and October 2009 following the start of project implementation. Data on the location of NSP and non-NSP projects was collected between June and November 2011.

IV. Data

The outcomes of interest for the study assess two different manifestations of elite capture of resources: (i) the degree of alignment between resource allocation outcomes and elite and non-elite preferences; and (ii) villager satisfaction with local economic and governance outcomes. The former measure is constructed from data on the *ex-ante* preferences of different groups and the proposed, selected, and prioritized projects for each village, as well as from the distance between projects' location and village head's houses, while the latter is compiled from follow-up survey data. The following sections provide further information on the sources of data on *ex-ante* project preferences (IV.1); allocation process (IV.2); allocation outcomes (IV.3); proximity of projects to elite households (IV.4); and villagers' satisfaction (IV.5).

IV.1. *Ex-Ante* Project Preferences

Data on *ex-ante* preferences is drawn from the baseline survey. In each village, the survey was administered to three groups of villagers: (1) ten randomly selected male heads-of household; (2) a focus group of male village leaders; and (3) a focus group of leading village women.¹⁰ The male focus group was comprised of between six and nine of the most important male leaders in the village, ordinarily members of the male village *shura / jirga*.¹¹ The female focus group was comprised of between six and nine senior village women who were considered influential by both men and women. These ended up being mostly the relatives (wives, daughters etc.) of male power holders in

⁹ In all villages, there was at least a month between development council elections and project selection.

¹⁰ Female focus group respondents were interviewed both in a focus group setting and then individually.

¹¹ Where the village had a functional village council, enumerators were instructed to request the participation of all of the regular members of the body in the focus group. If no village council existed in the sample village, enumerators were instructed to convene a meeting of the village headman and other residents of the village that were identified as local power-holders by the villagers.

the village, with half of the respondents indicating that a member of their family is a member of the village *shura / jirga*.¹² In total, over 7,000 respondents were surveyed (see Table 2).

[TABLE 2 HERE]

In each of the three survey instruments, one question asked all respondents to indicate – from a list of fifteen potential projects – the project that they believed should be selected if the village was provided with a \$60,000 grant.¹³ Using this data, we construct village-level dummy variables indicating the project most frequently preferred by each of the three groups.¹⁴ This provides village-level measures of the preferences of male villagers, male elites, and female elites, respectively.

[TABLE 3 HERE]

Table 3 presents the preferences for the three groups of villagers. There is a noticeable difference in the preferences of the different groups, with the pairwise comparison of distributions significant at the one percent level for all three comparisons. Drinking water projects are the first choice of male household respondents and female elites, while preferences of male elites are more evenly distributed across different projects. The correlation between preferences of different groups of voters within each village is not very high and does not exceed 0.30 (see Table A2 in the Online Appendix).

At the village-level, there are no significant differences in project preferences between villages assigned to the two different allocation procedures. At the individual-level, the distribution of preferences is balanced across allocation procedures for male respondents (both elite and ordinary villagers). However, there is a significant difference in female elite preferences between the two groups of villages at the individual level. Since there are no imbalances at the village level, i.e. between the most preferred projects, this imbalance is driven by the lower-ranked projects. We account for this by ensuring that results are robust to controlling for the second and third most preferred projects.

¹² The baseline survey was not administered to a random sample of female villagers due to financial and logistical constraints, so we do not have information on their preferences.

¹³ Male and female focus group respondents were asked to identify one project from a list of 15 possible projects, while individual male household and female respondents interviewed individually were asked to select and prioritize three projects from the same group of 15. To ensure comparability, we focus on the project that was named as the most important in the household and individual surveys. Female respondents were asked the question twice in both the group setting and individually, but we use only information from the female individual questionnaire and check robustness using the female focus group responses.

¹⁴ In the event of two or more projects having the same number of respondents preferring them and these numbers exceeding the number of respondents preferring other projects, the respective projects were all marked as the most preferred.

IV.2. Resource Allocation Process

To obtain data on the resource allocation process, we monitored implementation of the procedures in 127 randomly selected villages (63 villages assigned to meetings and 64 villages assigned to referenda).¹⁵ Data was collected on the basis of both monitors' observations and from 1,238 interviews of male villagers conducted following their participation in the allocation process. For villages that held referenda, we obtained data on voting outcomes for all villages, including for villages that were not monitored.

[TABLE 4 HERE]

On average, 12 development council members and 143 villagers attended village meetings, which is about one-third of the average adult population of the sample villages. Monitoring data indicates that council members dominated meeting discussions, with approximately half of the council members expressing their opinion compared to only one-of-eight male villagers and one-of-twenty female villagers in attendance.

Participation in referenda was substantially higher, with an average of 251 villagers voting, which constitutes slightly more than 60 percent of the average adult population. The requirement that turnout reach 50 percent of the population was satisfied in all villages. Referenda were administered with a generally high degree of professionalism: 99 percent of monitored polling stations had lists of eligible voters, 97 percent of stations checked names off a registration list, and voters' privacy was considered to be assured in 83 percent of villages. In every monitored referendum village, the selected projects were the ones receiving the most votes and only in one village did a monitor consider the vote-counting process to be flawed. In 98 percent of monitored referenda, allocation results were announced immediately following the counting of votes.

Results of post-process interviews indicate that the process enjoyed a high degree of legitimacy. Although 40 percent of respondents in both groups reported that some important projects had not been considered, almost all respondents expressed their general satisfaction with the allocation procedure. 99 percent of respondents in referendum villages and 93 percent in meeting villages believed that the allocation results would determine which projects would be implemented.

¹⁵ Visits of monitors were unannounced and monitors were explicitly instructed not to interfere in the allocation process or try to affect the outcome in any way so as to provide an unbiased picture of the implementation of allocation procedures in the sample. Note, however, that these results cannot be generalized to all NSP villages in the country, as the implementing NGOs knew that the villages were included in the impact evaluation study, which could have affected the quality of their work.

IV.3. Resource Allocation Outcomes

Data on allocation outcomes indicates the type of projects : (i) proposed; (ii) selected; and (iii) prioritized. Data was provided by NGOs overseeing the allocation process for 235 out of the 250 villages in the sample.¹⁶ The data covers 1,567 proposed and 820 selected projects.

[TABLE 5 HERE]

Table 5 tabulates outcomes by procedure. Across the sample, a median of five projects were proposed, a median of three projects were selected, and a median of one project was prioritized. There are no statistically significant differences between villages assigned to different procedures in the number of proposed, selected, or prioritized projects.

Roads and bridges, irrigation, drinking water, and electricity were the most frequently proposed projects.¹⁷ Selected projects largely mirrored those of proposed projects, with roads and bridges being the most frequently selected, followed by drinking water, irrigation, and electricity. Electricity was the most frequently prioritized project.

There is no statistically significant effect of the allocation procedure on the type of projects that are proposed or selected. However, villages that are assigned to referenda are more likely to prioritize electricity projects. This is a somewhat puzzling result, since there are no good theoretical reasons for referenda to favor a specific type of project. However, the effect of referenda on prioritization of electricity projects is significant only in villages where this type of project was neither preferred by either elites nor by ordinary villagers.¹⁸ Accordingly, the result is orthogonal to the effect on the alignment of selection outcomes with *ex-ante* preferences, which is the main result of interest.

IV.4. Location of Projects

In addition to the type of project, decisions on project location can also be a contentious aspect of the selection process. The placement of a well for drinking water outside the house of the village headman, for instance, would disadvantage villagers living in other parts of the village. In order to estimate the effect of referenda on the location of projects vis-à-vis the residence of local elites, GPS coordinates of all development projects in sample villages were collected in 2011, after the completion of development projects. In addition, the GPS coordinates of the village headman were

¹⁶ Of the 15 villages for which the data was not received, 7 villages did not comply with the assignment of NSP treatment, which was driven primarily by the confusion between villages with similarly sounding names. Violations were not correlated with the assigned decision making rules. For the remaining 8 villages, the NGO had not gathered the necessary information. In both cases attrition is not correlated with the assigned allocation procedure.

¹⁷ Schools and health facilities, despite being preferred by relatively large numbers of respondents across the ten sample districts, were very rarely proposed due to the requirement that such project types be coordinated through the respective government ministries.

¹⁸ See Table A3 in the Online Appendix.

also collected, along with information on the length of his tenure to identify whether the same person held the position at the time of project selection.

Due to logistical constraints, data on the location of projects and the houses of village headmen were collected in only 175 out of the 250 sample villages. Attrition is not correlated with treatment status, however, with data available for 91 meeting villages and 84 referendum villages. Out of 541 projects for which GPS coordinates were collected, 339 were indicated as having been funded by NSP. The average distance between projects and the house of the village headman was 545 meters for NSP projects and 445 meters for non-NSP projects. Of the 175 villages for which project coordinates are available, 98 villages had the same village headman when the data was collected as during the project selection, with no differences in the share of village headmen who have retained their position between meeting and referendum villages.

IV.5. Villagers' Satisfaction

Information on villagers' satisfaction with local economic and governance outcomes comes from the follow-up survey, which was administered approximately a year after the start of project implementation. The survey was designed to be administered to the ten randomly selected households surveyed at baseline, with separate questionnaires for male household heads and a senior woman in the household. The data provide information on 2,367 male respondents and 2,144 female respondents (see Table 2).¹⁹

To measure villagers' satisfaction with local economic and governance outcomes, we use four perception-based binary indicators from male and female household surveys: (i) the respondent disagrees with a recent decision or action of the village leadership; (ii) the respondent attributes positive economic changes to actions of the village leadership; (iii) the respondent is satisfied with the work of village leaders; and (iv) the respondent perceives that the household is better off than it was last year.

¹⁹ Because of deterioration in underlying security conditions, we were not able to conduct surveys of male heads of household in 11 villages and of female heads of household in 33 villages. In both cases, there were no significant differences in attrition between villages with different project selection procedures. Enumerators administering the male household questionnaire were instructed to locate and interview the same households and, whenever possible, the same villagers who participated in the baseline survey. Enumerators were able to successfully locate such respondents in 65 percent of households in which male respondents were interviewed during the baseline survey. The predominant reason for enumerators not being able to interview baseline respondents was that the person was away from home on the day that the survey team visited the village, as it was the time of harvest. Differences between villages with different procedures of project selection in individual-level attrition are not statistically significant. We also check that the effect on attrition of such characteristics of respondents as age, income, assets, size of household, education, and ethnicity are similar in villages with different project selection rules.

We aggregate these measures into a summary measure by taking an equally weighted average of z -scores of the individual measures.²⁰ For observations in which one or two out of the four indicators are missing, we calculate the average based on non-missing indicators. For observations with more than two indicators missing, the summary measure is missing.²¹

The information on satisfaction was collected at a time when 91 percent of NSP-funded projects had begun implementation, with 40 percent of those projects under implementation for 6 months or more and 19 percent of projects completed. At this point, villagers had an opportunity to observe the characteristics of the project (such as location, construction method, and construction quality), even if they were not benefiting from it at the time. Accordingly, the measures are likely to measure satisfaction with allocation outcomes, rather than the allocation procedure *per se*.

V. Results

The following sections present the effects of variation in project allocation procedures on: allocation outcomes (V.1); location of projects (V.2); and villager satisfaction (V.3).

V.1. Effect on Proposal, Selection, and Prioritization Outcomes

The effect of selection and prioritization procedures on allocation outcomes is estimated using a conditional fixed effects logit model that accounts for village-specific variables and estimates the effect of the characteristics that are specific to a certain project in a village:

$$Pr(Y_{vp} = \mathbf{1} | Pref_{pvg}, S_{iv}, \alpha_p, \beta_{ig}) = \Lambda \left(\sum_{i=1}^2 \sum_{g=1}^3 Pref_{pvg} \times S_{iv} \times \beta_{ig} + \alpha_p + \mu_v \right) \quad (1)$$

where Y_{vp} is a dummy variable indicating whether project p was proposed, selected or prioritized in village v ; $Pref_{pvg}$ is a dummy variable indicating whether project p was preferred by group $g \in \{Male Villagers; Male Elite; Females\}$; and S_{iv} is a dummy variable which equals 1 if village v selected projects using decision-making process $i \in \{Referendum; Village Meeting\}$ and 0 otherwise. To identify whether different procedures produce different outcomes, we test the hypothesis of equality of β_{ig} across values of i . Standard errors are clustered at the village level.

²⁰ The first indicator is taken with a negative sign, so that for all indicators higher values are associated with better outcomes.

²¹ There are no significant differences in the number of missing observations across the two groups of villages.

In the results reported in Table 6, the coefficients indicate, for each selection and prioritization procedure, how the preference of one of the three groups for a project affects the probability of the project being proposed, selected, or prioritized.²²

[TABLE 6 HERE]

The results indicate that male elites exercise significant influence over project proposal, selection, and prioritization in villages assigned to meetings, but exercise no such influence in referendum villages. The difference between the effect of elite preferences in referendum and meeting villages is significant for selection and prioritization, but not for proposal.

Male villagers' preferences do not affect project proposal, but significantly influence selection and prioritization under both procedures. The magnitudes of the effects indicate that the influence of male villagers' preferences on project proposal, selection, and prioritization is stronger in referendum villages, although none of the differences is statistically significant at conventional levels.

Female elite preferences have only a marginally significant effect on project selection in village meetings, although the difference between the two procedures is not statistically significant.

To determine whether different procedures affect selection and prioritization after the proposal stage, we estimate the effects for proposed projects only. Results in columns (4) and (5) of Table 6 indicate that, after the proposal stage, elites influence prioritization in meetings, but have no such influence in referenda. Female elites have influence over the selection and prioritization of the proposed projects in village meetings, but not in referenda.

To check for the robustness of our results to alternative measures of aggregating preferences within a village, we use the share of votes instead of the dummy variable for the most preferred project. The results turn out to be similar if we use this alternative measure of preferences (see Table A4 in the Online Appendix).

In addition, we use an alternative specification and estimate the following OLS regression:

$$Y_j^{g,s} = \alpha + \beta \cdot \text{Referendum}_j + \delta_k + \varepsilon_j \quad (2)$$

Where $Y_j^{g,s}$ is a dummy variable that equals one if the proposed, selected, or prioritized projects included the project that was preferred by the majority of respondents from group g and zero otherwise.²³ For each stage of the allocation process, three regressions for different groups of villagers are estimated jointly in a system of seemingly unrelated regressions to account for possible

²² Unfortunately, the conditional logit specification does not allow for meaningful interpretation of the absolute value of the coefficients or marginal effects, since it does not identify village fixed effects.

²³ Note that this specification does not allow us to separate the effect of the selection method after the proposal stage. The outcome variables are defined only for 235 villages for which we have information on allocation outcomes. We check that the results are robust to assigning values of zero or one to outcomes in 15 villages for which the information is not available.

correlation of errors. The difference between referendum and meeting villages in the alignment of male and female elite preferences with allocation outcomes is statistically significant for prioritization, but not for proposal or selection (see Table A5 in Online Appendix). There is no significant difference between the two procedures in the alignment of male villager preferences with allocation outcomes during proposal, selection, or prioritization. Thus, the results in the alternative specification confirm that the influence of the elites on prioritization of projects was significantly lower in referendum villages. The similar result for the selection stage is no longer significant, which is probably driven by the fact that aggregating at the village level ignores important variation between different types of projects and reduces statistical power of the estimation.

V.2. Effect on the Location of Projects

To examine the effect of referendum on the location of implemented projects, we estimate the following OLS regression:

$$\begin{aligned}
 \ln(1 + Distance)_{ij} &= \alpha + \beta_1 \cdot Referendum_j \cdot Same\ Headman_j \cdot NSP_{ij} + \beta_2 \cdot Referendum_j \\
 &\cdot Same\ Headman_j \cdot non\ NSP_{ij} + \beta_3 \cdot Referendum_j \\
 &\cdot Different\ Headman_j \cdot NSP_{ij} + \beta_4 \cdot Referendum_j \\
 &\cdot Different\ Headman_j \cdot non\ NSP_{ij} + \beta_5 \cdot Same\ Headman_j \cdot NSP_{ij} + \beta_6 \\
 &\cdot Same\ Headman_j + \beta_7 \cdot NSP_{ij} + \delta_k + \varepsilon_{ij}
 \end{aligned} \tag{3}$$

where $\ln(1 + Distance)_{ij}$ is the natural logarithm of the distance between project i and the house of the village head in village j , $Same\ Headman_j$ is an indicator variable for whether the village headman for whom we have coordinates was the same individual who held the post of village headman during the selection of NSP projects, NSP_{ij} is an indicator variable for whether project i was sponsored by NSP and $Different\ Headman_j = 1 - Same\ Headman_j$, and $nonNSP_{ij} = 1 - NSP_{ij}$. To ensure that results are robust to controlling for village size, we also include the median distance between houses of the ten randomly selected households from the baseline survey. We use two alternative approaches to account for possible correlation of residuals. First, we cluster standard errors at the village level to account for the fact that the treatment status is determined at the village level. Second, since the location of different projects is likely to be interdependent both within villages and between neighboring villages, we account for possible spatial correlation of residuals. In particular, spatial correlation among projects is assumed to be declining linearly up to a distance cutoff and to be zero after that cutoff (Conley 1999; Hsiang 2010). We use the cutoff of 15km, and we check that the results are robust to using cutoffs of 10km and 20km.

[TABLE 7 HERE]

The results presented in columns (1) and (2) of Table 7 indicate that NSP projects were located farther away from houses of the village headmen if selected through referendum (difference is

statistically significant at the 10% level for clustered standard errors and at 5% for spatially correlated ones). There is no such effect for non-NSP projects or if we look at the distance to the house of village headmen who assumed their position after NSP projects were selected. Thus, these results also suggest that projects selected through meetings benefited village elites more than projects selected through referenda.

To test the robustness of these results, we exclude from the sample projects for which the location of the project is least likely to be indicative of the benefits obtained from the project. In particular, we exclude electricity projects (which record location of the generators and thus do not reflect which households receive electricity) and transportation projects such as roads and bridges (which benefit not only the households located near the repaired road or bridge, but all the households along the road). The results in columns (3)-(6) of Table 7 indicate that the effect of referendum slightly increases in magnitude after we exclude these projects, and its statistical significance increases after the exclusion of electricity projects.

To check that the effect is not driven by outliers, Figure 2 provides a comparison of the conditional density function of the distance between the location of the projects and the houses of village headmen for the subsample of villages in which the current headman held the position during project selection. The distance for the referendum villages nearly first order stochastically dominates the distance for the meeting villages. Figures A1 and A2 in the Online Appendix show that there is no such pattern if we look at non-NSP projects or if we look at NSP projects in villages in which the headman changed after the selection of the projects. Altogether, these figures indicate that the results are not due to outliers but rather derive from a pronounced pattern.

V.3. Effect on Villagers' Satisfaction

To examine the effect of selection and prioritization procedures on perceptions of local governance and economic welfare, we estimate the following OLS regression:

$$Y_{ij}^{FU} = \alpha + \beta \cdot Referendum_j + \delta_k + \varepsilon_{ij} \quad (4)$$

where Y_{ij}^{FU} is the summary measure of satisfaction for respondent i in village j ; $Referendum_j$ is a dummy variable that equals one if village j was assigned to allocate resources by referendum and zero otherwise, and δ_k is a quadruple fixed effect.²⁴ Standard errors are clustered at the village level. We estimate the regression for the full sample of respondents, as well as for male and female household respondents separately.²⁵

[TABLE 8 HERE]

²⁴ We follow Bruhn and McKenzie (2009) in including quadruple fixed effects to account for quadruple-wise matching at the randomization stage (see Section III.2).

²⁵ Analogous results for each of the individual indicators used in the construction of the summary index are reported in Table A6 in the Online Appendix.

Column (1) in Table 8 presents the aggregate results, which indicate that the level of satisfaction of the respondents was significantly higher in villages that conducted a referendum. Results in columns (4) and (7) show that the effect holds for both male and female respondents. Thus, the results suggest that there is a positive effect of the referendum procedure on villagers' satisfaction.²⁶

To provide more evidence on whether elite influence over resource allocation affects villager satisfaction, we estimate the following OLS regression:

$$Y_{ij}^{FU} = \alpha + \sum_{g=1}^3 Pref_{vg} \times \gamma_{ig} + \delta_k + \varepsilon_{ij} \quad (5)$$

where $Pref_{vg}$ is a dummy variable indicating whether any of the selected projects was preferred by group g in village v . As in the previous specification, we use a quadruple fixed effect and allow for clustering of standard errors at the village level.

Results, presented in column (2) of Table 8 indicate that elite domination of project selection is associated with significantly lower level of villagers' satisfaction. The level of satisfaction is significantly higher in villages that selected projects preferred by male villagers, and it is significantly lower if the selected projects were preferred by either male or female elites. The results in columns (5) and (8) show that the direction of the effect is the same for both male and female respondents, but that it is statistically significant only for male respondents. Overall, the results provide suggestive evidence that elite domination of project selection negatively affects the satisfaction of villagers, primarily males. However, these results should be interpreted with caution, since the alignment between the type of selected project and preferences is endogenous and the results do not necessarily reflect the causal effect of elite influence over resource allocation on satisfaction.

To determine whether the positive effect of referenda on villagers' satisfaction is driven by actual outcomes or by the process itself, we estimate the following regression:

$$Y_{ij}^{FU} = \alpha + \beta \cdot Referendum_j + \sum_{g=1}^3 Pref_{vg} \times \gamma_{ig} + \delta_k + \mu_l + \varepsilon_{ij} \quad (6)$$

where all the variables are the same as above and μ_l is a project type fixed effect. Thus, the specification estimates the effect of the selection procedure on villagers' satisfaction, controlling for preference alignment and the type of selected projects.

Results presented in column (3) of Table 8 indicate that the effect of referenda on villagers' satisfaction slightly decreases in magnitude, but remains statistically significant. The results in

²⁶ Results are robust to controlling for such individual characteristics of respondents as age, whether the respondent had any formal education, whether the respondent owns land, whether the respondent was able to read a basic sentence, and whether the respondent was able to perform a basic calculation (see Table A7 in the Online Appendix).

columns (6) and (9) show that the effect holds for male as well as for female respondents separately. Thus, the results suggest that higher levels of satisfaction observed under referenda are driven mainly by the procedure itself, rather than by differences in outcomes caused by the different selection procedures. As in the previous case, the results can only be interpreted as suggestive evidence, as the alignment between preferences and allocations is endogenous.

VI. Discussion of Results

Theoretically, direct democracy can change the outcomes of allocation through three possible channels involving principal-agent problems, asymmetric information, and issue bundling (Matsusaka, 2005). In the presence of principal-agent problems, elected representatives may not always follow the preferences of the median voter (Kau and Rubin, 1979; Kalt and Zupan, 1984; Peltzman, 1984). Direct democracy moves the policy closer to the position of the median voter, although it does not generally result in a policy exactly at the median voter's ideal point (Romer and Rosenthal, 1979). However, direct democracy may lead to worse outcomes if information asymmetries imply that voters do not have the expertise available to their representatives to accurately assess potential benefits of different policy choices (Maskin and Tirole, 2004). Direct democracy also allows the "unbundling" of different issues and, in particular, it prevents logrolling (Matsusaka, 1995), which has ambiguous welfare effects (Buchanan and Tullock, 1962).

In the context of resource allocation in Afghan villages, principal-agent problems are likely to be the most important determinant of the effect of direct democracy. Although development council members are democratically elected, as noted in Section II.1 above, their reelection concerns are very weak given the ambiguity concerning the administration of follow-up elections. Conversely, information asymmetries over potential benefits of different project options are unlikely to be significant given the local nature of projects, the ability of villagers to discuss proposed projects before selection, and the absence of distortions caused by special interest groups or mass media. Also, although logrolling allows elites in traditional representative systems to deviate from median voter preferences, its role in this context is likely to be limited since the allocation procedure is broadly conceived as a one-shot event given the lack of guarantees concerning future projects.

The results of the study indicate that allocation procedures have a significant effect on the relative ability of elites to influence allocation outcomes. Specifically, allocation decisions made through consultative procedures grant significant influence to elites, as compared to directly democratic procedures both in terms of type and location of projects. The results further indicate that elite influence over allocation decisions lowers general satisfaction with the local leadership and worsens economic perceptions.²⁷ Taken together, these results suggest that, in this context, elite influence

²⁷ Referenda increase villagers' satisfaction, even after controlling for the type of selected project. At the same time, satisfaction is affected by selection outcomes *per se*, with lower levels of satisfaction in instances where selected projects

over allocation outcomes represents a form of malevolent elite capture of resources that reflects principal-agent problems, as opposed to the more benevolent form of elite control that reflects asymmetric information regarding the relative benefits of projects.

The finding that consultative procedures grant elites greater influence over allocation decisions appears to result from the dominance by development council members in meetings. According to monitoring data collected during consultation meetings, development council members had more influence than other attendees in the selection of projects in 98 percent of meetings, and in 35 percent of meetings, council members fully determined the choice over the final project. This finding is consistent with Humphreys et al. (2006) who observe discussion leaders' preferences to be a significant determinant of the outcomes of deliberative meetings.

The influence of council members over allocation decisions does not necessarily imply greater elite influence, because we consider as elites those local leaders who were identified as such before the start of the program. However, the preferences of the development council are likely to be closely aligned with the preferences of the pre-existing elite, both because of the large overlap with pre-existing elites (see Section II.1) but also because village leaders are likely to have significant influence even over those members of the council who were not members of the pre-existing elite themselves.

Our results also suggest that one of the most important channels through which elites influence allocation outcomes is through agenda setting. In both meetings and referenda, agenda-setting rules were identical, but the fact that the selection procedure was known in advance clearly affected the choice of proposed projects. In particular, results indicate that the council was more likely to propose projects that were preferred by elites in the context of a meeting rather than a referendum.²⁸ This effect played a major role in these villages as, once we condition on a project being proposed, the male elite preferences have only a small effect on project choice. Two complementary explanations for this are that, when setting agendas for meetings, elites compensate for expected attempts by villagers to change agendas during the meeting, while, when setting agendas for referenda, elites anticipate a broader political cost from diverging significantly from villager preferences given the immutable nature of the agenda.

The results indicate that female elites influence project choice only under village meetings. Since female elites commonly share familial links with male elites, this result is perhaps not surprising. However, unlike male elites, who exhibit their influence primarily at the proposal stage, female elites have almost no influence on project proposal, while they have an impact on project selection and prioritization. The results also indicate that female elite influence does not have a positive effect on

were preferred by elites and higher levels in cases where selected projects were preferred by villagers. The results thus indicate that direct democracy increases satisfaction both as a result of the process itself as well as by better aligning allocation outcomes with public preferences.

²⁸ Preferences of male villagers and female elites had almost no effect on the choice of proposed projects irrespective of the project selection procedure.

the satisfaction of ordinary females, suggesting that preferences of female elites diverge from those of female villagers.²⁹

The finding that the process of direct democracy increases villagers' satisfaction is consistent with Olken (2010),³⁰ but the finding that allocation procedures affect allocation outcomes contrasts with the finding of Olken (2010) that procedures do not affect the choice of general projects other than some limited effects on women's project location. The difference in results may be due to the difference in sample size between the two studies – 49 villages in Olken (2010) compared with 250 villages in this study. In addition, two differences in context may also explain the divergence of results.

First, Indonesian villages receive funding for general projects periodically, which allows for log-rolling and inter-temporal trade between interest groups within a village and can in turn cause policy outcomes to diverge both from the preferences of both the median voter and the elite. In contrast, women's projects in Indonesia were a one-shot event, which is more comparable with the situation in Afghanistan. For projects in Afghanistan and for women's projects in Indonesia, there was thus limited scope for log-rolling, which made the unbundling effect of direct democracy less relevant.

Second, the study in Indonesia was conducted following reforms that attempted to increase the accountability of local leaders. These reforms could have reduced principal-agent problems and in turn reduced the ability of elites to realize their preferences, even in village meetings. This may explain the limited effect of direct democracy in the Indonesia case, whereas the contrasting results in Afghanistan indicate that principal-agent problems are potentially more pronounced in villages there.

Overall, our findings provide evidence that direct democracy helps to ameliorate – if not solve – the principal-agent problems that result in elite capture. There is also no evidence that direct democracy leads to inferior outcomes by preventing elites from exploiting informational advantages they may possess regarding the relative benefits of different projects. This, in turn, suggests that elites and ordinary villagers support different projects because of different underlying preferences, rather than different information, and that direct democracy can improve the welfare of the general population (Matsusaka, 2005).

²⁹ Unfortunately, we don't have measures of *ex-ante* preferences for ordinary women in the village, so we cannot directly test how aligned the selected projects were with their preferences and if the choice of their most preferred project increased their satisfaction *ex-post*.

³⁰ Note, however, that our measures of satisfaction are different as Olken (2010) considers villagers' satisfaction with the project specifically, while we ask about satisfaction with the village elites more generally. We focus on people's satisfaction with their elites rather than with the project itself as our concern is with elite capture of resources and how people perceive their performance rather than with the project *per se*, which at the time of the survey, was under implementation but had not yet been fully completed.

VII. Conclusion

This paper examines the effect of decision-making rules on resource allocation outcomes. Using data from 250 villages in Afghanistan, we compare allocation outcomes under direct democracy with outcomes under consultative procedures. Our findings indicate that direct democracy limits elite influence over policy outcomes, while consultative processes are susceptible to elite capture. Direct democracy also improves perceptions of local governance and economic welfare, which confirms that elite influence over the allocation of resources is contrary to the interests of the general population and thereby reflects elite capture caused by principal-agent problems, rather than more benign forms of elite influence that reflect asymmetric information regarding project benefits.

The findings of the study are especially noteworthy given the context in which they occurred. While direct democracy is almost unheard of in rural Afghanistan, the consultation meeting procedure employed by the experiment approximated the method by which public decisions are traditionally made, with a council of tribal elders and other local notables convening an open discussion among community members and with an explicit aim of reaching a decision by consensus. Such procedures command great legitimacy in Afghan society, and the finding that they proved susceptible to elite capture suggests that direct democracy can serve a valuable role in improving the equity of public goods provision even in societies that lack democratic traditions.

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Figure 1: Ten Sample Districts



Figure 2: Distance between Location of NSP Projects and House of Village Headman
(Sample Restricted to Villages in which Current Headman Held Position during Project Selection)

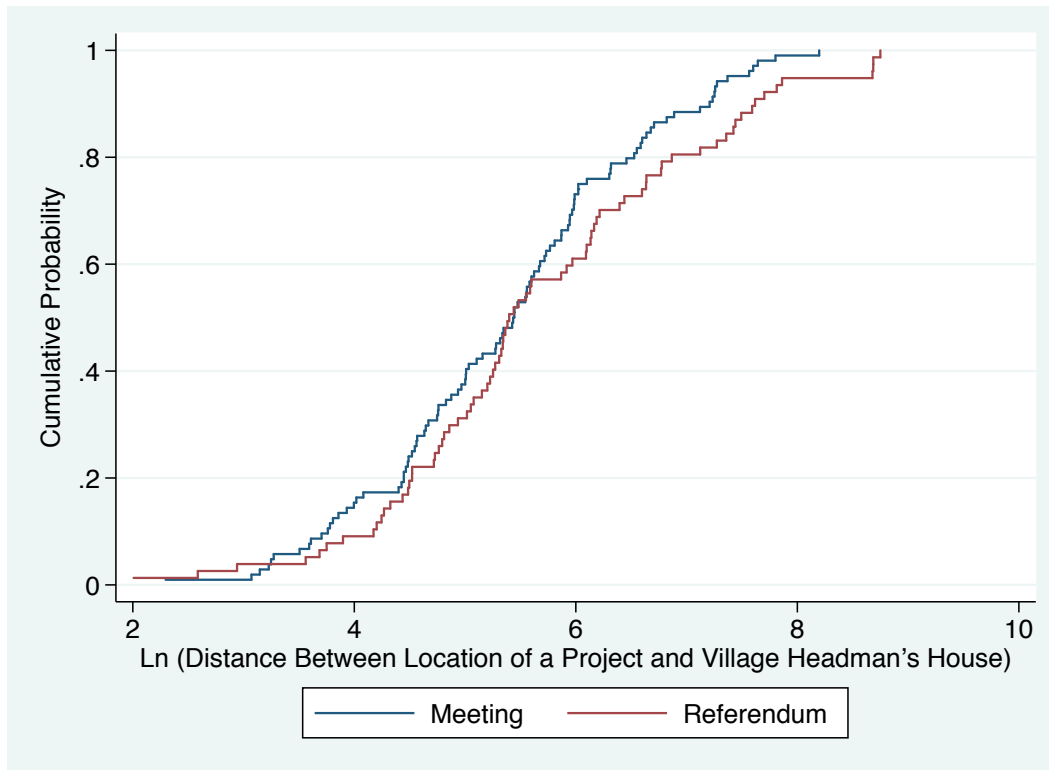


Table 1: Balance of Pre-Treatment Covariates

	Village Meeting	Referendum	Standardized Difference	F-Statistic for Testing Equality of Means	p-Value for Testing Equality of Means
Number of Households in Village	110.79	126.22	0.13	1.51	0.221
Size of Household of Respondents	9.73	9.85	0.02	0.10	0.754
Age of Respondent	44.04	43.64	0.03	0.39	0.534
Respondent is Formally Educated	0.71	0.71	0.00	0.00	0.958
Household is Food Secure	0.45	0.45	0.02	0.07	0.787
Source of Drinking Water is Unprotected Spring	0.28	0.26	0.03	0.11	0.745
Respondent Has Access to Electricity	0.17	0.13	0.10	0.95	0.330
Male Health Worker is Available	0.12	0.12	0.00	0.00	0.980
Female Health Worker is Available	0.09	0.10	0.04	0.25	0.616
Assets	0.01	-0.01	0.07	1.08	0.300
Total Food Expenditure in Past 30 Days (Afghanis)	3512.30	3611.80	0.05	0.38	0.537
Respondent Received Loan in Past Year	0.46	0.48	0.03	0.19	0.665
Respondent Believes People Should Pay Taxes	0.37	0.43	0.13	2.79	0.096
Respondent Prefers Drinking Water Project	0.30	0.29	0.03	0.17	0.684
Respondent Prefers School Project	0.16	0.18	0.06	0.66	0.417
Respondent Prefers Road or Bridge Project	0.13	0.14	0.04	0.41	0.524
Respondent Attended Meeting of Shura	0.32	0.32	0.02	0.04	0.837
Female Respondent Owns Private Land	0.34	0.30	0.10	1.03	0.312

Notes: Comparison of means accounts for clustering of errors at the village level.

Table 2: Coverage and Composition of Surveys

	Baseline Survey (September 2008)	Follow-Up Survey (May - October 2009)
Male Household Questionnaire	2,387 respondents in 250 villages	2,367 respondents in 239 villages
Male Focus Group Questionnaire	1,999 respondents in 250 villages	1,848 respondents in 236 villages
Female Focus Group Questionnaire	1,812 respondents in 248 villages	1,364 respondents in 212
Female Household Questionnaire	Not Administered	2,144 respondents in 217 villages
Female Individual Questionnaire (Administered to Female Focus Group Participants)	1,708 respondents in 248 villages	Not Administered

Table 3: Ex-Ante Most Preferred Projects

Panel A: Male Head of Household	Village Level		Individual Level	
	Village Meeting	Referendum	Village Meeting	Referendum
Most Preferred Project is:				
Drinking water	36.0%	40.8%	30.2%	28.9%
Irrigation	17.6%	12.0%	12.6%	13.0%
Electricity	6.4%	4.8%	6.2%	6.4%
Roads and Bridges	18.4%	18.4%	16.9%	13.3%
Schools	18.4%	23.2%	16.0%	18.4%
Health facilities	16.0%	15.2%	13.0%	14.4%
Livestock breeding	1.6%	0.0%	0.9%	1.3%
Agriculture accessories	0.0%	0.0%	1.3%	1.1%
Other	0.0%	1.6%	2.9%	3.2%
p-Value for χ^2 Test	0.80		0.30	
Observations	125	125	1187	1182

Panel B: Male Focus Group	Village Level		Individual Level	
	Village Meeting	Referendum	Village Meeting	Referendum
Most Preferred Project is:				
Drinking Water	27.6%	23.6%	16.0%	13.6%
Irrigation	25.2%	29.3%	14.1%	16.7%
Electricity	16.3%	19.5%	11.0%	12.1%
Roads and Bridges	25.2%	21.1%	12.0%	11.4%
Schools	25.2%	19.5%	13.0%	12.8%
Health facilities	22.0%	24.4%	13.6%	13.0%
Livestock breeding	5.7%	8.1%	3.4%	4.6%
Agriculture accessories	4.1%	10.6%	4.1%	4.1%
Other	16.3%	14.6%	12.9%	11.7%
p-Value for χ^2 Test	0.49		0.53	
Observations	123	123	972	976

Panel C: Female	Village Level		Individual Level	
	Village Meeting	Referendum	Village Meeting	Referendum
Most Preferred Project is:				
Drinking Water	54.0%	50.0%	44.2%	39.3%
Irrigation	2.4%	5.6%	2.9%	3.9%
Electricity	9.7%	5.6%	8.3%	5.5%
Roads and Bridges	6.5%	8.9%	5.2%	7.8%
Schools	17.7%	16.1%	13.7%	15.2%
Health facilities	16.9%	19.4%	13.7%	16.5%
Livestock breeding	0.0%	2.4%	0.7%	0.5%
Agriculture accessories	0.0%	0.8%	0.4%	1.3%
Other	8.1%	8.9%	11.1%	10.1%
p-Value for χ^2 Test	0.69		0.01	
Observations	124	124	842	844

Notes: Village-level results show the proportion of villages in which a particular type of project was preferred by the majority of respondents in the respective group. For village-level cases in which more than one type of project was preferred by the same number of respondents, all such projects were considered to be the most preferred. Thus, the sum of percentages may exceed 100 percent. Individual-level results show the share of respondents in a respective group of villagers that prefer the particular type of project.

Table 4: Participation by Decision-Making Procedure

	Villagers				Development Council Members		
	Obs.	Average Number	Avg. Share of Adults	Std. Dev.	Obs.	Mean	Std. Dev.
Village Meeting (Monitored Villages)							
Total	54	143	33%	119	56	15	9
Male	63	71	31%	61	63	7.1	2.8
Female	54	75	35%	61	55	7	3.8
Referendum (Monitored Villages)							
Total	116	251	61%	162			
Male	116	140	63%	102			
Female	97	133	69%	91			

Notes: The actual turnout is somewhat higher, as the adult population includes people over 15 years of age, whereas only people 18 and over are considered as eligible voters.

Table 5: Resource Allocation Outcomes

	Decision-Making Procedure	
	Village Meeting	Referendum
Proposal		
Median number per village	5	5
Type		
Drinking Water	19.7%	19.3%
Irrigation	21.0%	19.1%
Roads and Bridges	28.0%	28.3%
Electricity	15.4%	16.1%
Other	15.9%	17.3%
Observations	590	597
p-Value for χ^2 Test	0.40	
Selection		
Median number per village	3	3
Type		
Drinking Water	27.2%	23.6%
Irrigation	20.7%	18.1%
Roads and Bridges	28.5%	29.3%
Electricity	15.5%	19.3%
Other	8.1%	9.7%
Observations	309	331
p-Value for χ^2 Test	0.74	
Prioritization		
Median number per village	1	1
Type		
Drinking Water	29.9%	20.5%
Irrigation	25.6%	17.9%
Roads and Bridges	22.2%	20.5%
Electricity	18.8%	37.5%
Other	3.5%	3.6%
Observations	117	112
p-Value for χ^2 Test	0.06	

Table 6: Effect of Selection Method on Selection Outcomes

Group	Procedure	Proposal	Selection	Prioritization	Selection	Prioritization
		(1)	(2)	(3)	(4)	(5)
		All Projects			Proposed Projects only	
Male Villagers	Village Meeting	-0.35 [0.270]	0.53** [0.230]	0.46* [0.257]	1.05*** [0.354]	0.63** [0.283]
	Referendum	0.22 [0.238]	0.81*** [0.258]	0.66** [0.263]	1.02*** [0.356]	0.63** [0.260]
<i>t</i> -Stat of Diff. btw. Types		[1.584]	[0.840]	[0.550]	[-0.057]	[0.002]
Male Elite	Village Meeting	0.82*** [0.314]	0.54** [0.242]	0.75*** [0.260]	0.24 [0.301]	0.53* [0.296]
	Referendum	0.20 [0.289]	-0.04 [0.242]	-0.11 [0.258]	-0.30 [0.293]	-0.23 [0.262]
<i>t</i> -Stat of Diff. btw. Types		[-1.498]	[-1.696]*	[-2.371]**	[-1.302]	[-1.912]*
<i>p</i> -value for Diff. btw. Types btw. Male Household & Male Focus Group		0.06	0.11	0.07	0.46	0.22
Female Elite	Village Meeting	0.07 [0.285]	0.47* [0.247]	0.46 [0.288]	0.65* [0.338]	0.61* [0.323]
	Referendum	0.18 [0.259]	0.11 [0.242]	-0.31 [0.300]	-0.01 [0.305]	-0.32 [0.321]
<i>t</i> -Stat of Diff. btw. Types		[0.297]	[0.259]	[0.242]	[-1.469]	[-2.287]**
<i>p</i> -value for Diff. btw. Types in All Three Groups Equal to Zero		0.29	0.17	0.02	0.23	0.02
Project Type Fixed Effects		Yes	Yes	Yes	Yes	Yes
Number of Observations		865	1,100	1,110	635	817

Notes. All specifications are conditional fixed-effect logit regressions. The unit of observation is project type-village. The dependent variable assumes value one if project type is proposed, selected, or prioritized and zero otherwise. Each row corresponds to an interaction between a binary variable denoting the decision-making procedure and a binary variable denoting whether project type was preferred by the respective village group. Regressions exclude villages in which there was no variation in the dependent variable (e.g. all five types of projects were proposed or no projects indicated as prioritized), which explains the difference in the number of observations across columns. Robust standard errors are clustered at the village level. *, **, and *** denote significance at 10%, 5%, and 1% levels.

Table 7: Effect of Selection Method on Location of Projects

Dependent Variable:	Natural Log of Distance Between Location of a Project and Village Headman's House					
	All Projects		Excluding Electricity		Excluding Roads and Bridges	
	(1)	(2)	(3)	(4)	(5)	(6)
Referendum * Same Headman * NSP Project	0.515 [0.293]* (0.226)**	0.538 [0.292]* (0.215)**	0.577 [0.311]* (0.280)**	0.610 [0.311]* (0.266)**	0.640 [0.327]* (0.208)***	0.655 [0.328]** (0.207)***
Referendum * Same Headman * Non-NSP Project	0.057 [0.368] (0.350)	0.093 [0.363] (0.337)	-0.122 [0.387] (0.365)	-0.098 [0.382] (0.352)	0.384 [0.410] (0.416)	0.416 [0.405] (0.406)
Referendum * Different Headman *NSP Project	-0.303 [0.303] (0.248)	-0.109 [0.276] (0.243)	-0.150 [0.310] (0.233)	0.116 [0.284] (0.219)	-0.264 [0.373] (0.274)	-0.036 [0.336] (0.254)
Referendum * Different Headman * Non-NSP Project	-0.348 [0.395] (0.439)	-0.431 [0.395] (0.406)	-0.245 [0.384] (0.433)	-0.322 [0.383] (0.392)	-0.418 [0.448] (0.352)	-0.482 [0.451] (0.356)
NSP Project	0.032 [0.254] (0.292)	-0.104 [0.261] (0.315)	0.197 [0.260] (0.277)	0.040 [0.263] (0.303)	0.012 [0.351] (0.354)	-0.139 [0.363] (0.365)
Same Headman	-0.129 [0.431] (0.475)	-0.208 [0.421] (0.430)	0.069 [0.453] (0.508)	0.017 [0.439] (0.459)	-0.192 [0.490] (0.486)	-0.271 [0.479] (0.447)
Same Headman* NSP Project	0.039 [0.367] (0.390)	0.163 [0.367] (0.395)	-0.124 [0.403] (0.420)	0.017 [0.398] (0.422)	0.131 [0.447] (0.512)	0.277 [0.452] (0.504)
Ln(Distance Between Households)		0.352 [0.106]*** (0.082)***		0.408 [0.115]*** (0.110)***		0.343 [0.122]*** (0.080)***
Quadruple Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	541	541	509	509	421	421
R-squared	0.231	0.248	0.232	0.255	0.268	0.283
Number of villages	175	175	170	170	162	162

Notes. Robust standard errors adjusted for clustering at the village-cluster level in square brackets. Standard errors corrected for spatial correlation and serial correlation in round brackets. *, **, and *** denote significance at 10%, 5%, and 1% levels .

Table 8: Effect of Selection Method on Villagers' Attitudes

	Index of Villagers Satisfaction			Index of Male Villagers Satisfaction			Index of Female Villagers Satisfaction		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Referendum	0.084*** [0.025]		0.073*** [0.025]	0.067** [0.031]		0.055* [0.031]	0.111*** [0.034]		0.094*** [0.034]
Selected Project Preferred by Male Villagers		0.073** [0.035]	0.079** [0.034]		0.103** [0.042]	0.119*** [0.041]		0.031 [0.049]	0.033 [0.050]
Selected Project Preferred by Male Elite		-0.090*** [0.028]	-0.082*** [0.027]		-0.115*** [0.035]	-0.106*** [0.035]		-0.058 [0.044]	-0.046 [0.044]
Selected Project Preferred by Female Elite		-0.058** [0.029]	-0.049 [0.034]		-0.102*** [0.037]	-0.081* [0.043]		-0.012 [0.043]	-0.018 [0.047]
Quadruple fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Types of selected projects	No	No	Yes	No	No	Yes	No	No	Yes
Observations	4,508	4,508	4,508	2,367	2,367	2,367	2,141	2,141	2,141
R-squared	0.07	0.07	0.08	0.12	0.13	0.13	0.08	0.08	0.09

Notes. Robust standard errors are clustered at the village level. *, **, and *** denote significance at 10%, 5%, and 1% levels.