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The right to benefit: Using videos to encourage citizen involvement in resource revenue management*

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Abstract

The governance of natural resource wealth is a key factor in promoting strong institutions and economic development in resource-rich countries. In this paper, we explore how individuals' engagement in local natural resource revenue (NRR) management can be enhanced and encouraged. We focus on Indonesia, which is a large gold and petroleum producer, among other natural resources, with local challenges such as underdevelopment of resource-rich areas and corruption. We run a randomized survey experiment among 807 local community members in an oil-rich district using videos with three information treatments that give citizens salient and easily understandable information on local NRR and additional motivation to use this information to engage in NRR management. Our outcomes include survey questions on stated behavior and citizen rights perception regarding NRR management, and two incentive-compatible measures. We find that providing easily understandable information increases respondents' sense of the right to personally influence how NRR are used and the propensity to donate to an anti-corruption NGO. Our positive example treatment was able to increase respondents' sense of their right to benefit from NRR and their right to influence NRR management, while our negative example treatment had no impact on our outcomes. We also explore intervening mechanisms and heterogeneous effects. Providing the population of resource-rich areas with easily understood information on NRR management that is relevant to the local context offers an encouraging avenue for combating NRR-related mismanagement and corruption.

Keywords: accountability, survey experiment, video, Indonesia, petroleum revenues, information treatment
JEL codes: Q35, Q38, H41, H23, D80

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1. Introduction

Nearly half the world population lives in countries rich in natural resources, but poverty and corruption remain a big challenge for many of these countries.[1] The governance of natural resource wealth has been identified as a key factor in promoting strong institutions and economic development in resource-rich countries, and since the 1990s the international community has promoted transparency as a means of improving governance in this area (Haufler, 2010). Transparency in how resource-rich countries govern natural resources and manage their public revenues has now become a common prerequisite for obtaining investment, debt relief and loans, as well as aid from donors, multinational financing institutions and extractive industry companies (e.g., David-Barrett and Okamura, 2016; Kasekende et al. 2016).

The theoretical literature sees citizens as a fundamental part of successful transparency and accountability initiatives for better natural resource revenue (NRR) management.[2] It is citizens who are expected to receive and act on (salient and accessible) information provided by the state and demand more information and/ or change if necessary (Fung et al. 2007; Kosack and Fung 2014); and citizens are the ones who should engage in public debate on NRR management (Le Billon et al. 2021). The assumption has been that transparency in the form of public information provision would be enough to enable public debate and facilitate citizens' demand for accountability from policymakers. These principles underlie the foundation of the Extractive Industries Transparency Initiative (EITI), the biggest global transparency and accountability organization in the sector. However, the empirical evidence on the link between information provision on NRR and less corruption and improved government effectiveness among EITI members remains uncertain (e.g., Rustad et al. 2017, Fenton Villar 2021), calling into question the activation of the intermediate steps. Using micro-level data, Lujala et al. (2020), Brunnschweiler et al. (2021) and Ogbe (2022) show that in fact public information provision is not enough to ensure citizen engagement in NRR management in Ghana: most individuals do not receive the information that is freely available and do not know how to demand accountability.

In this paper, we explore how individuals' engagement in local NRR management can be enhanced and encouraged through targeted information provision. We focus on Indonesia, which is a large gold

[1] The so-called natural resource curse argues that resource-rich countries have seen relatively slow economic growth, high corruption levels and weak institutions, and increased probability of conflict. See e.g. van der Ploeg and Poelhekke (2017) for a useful survey of the (mostly empirical) resource curse literature.

[2] Transparency in general aims at reducing one of the barriers to accountability identified by Hirschman (1970). See Bellver and Kaufman (2005) and Bujize (2013) for a definition of transparency.

and petroleum producer, among other natural resources, and a member of the EITI with a detailed and transparent NRR redistribution system in place but with ongoing problems of local mismanagement and corruption in the sector. We draw on the behavioral economics literature to design an information provision experiment that gives citizens salient and easily understandable information on local NRR, and we seek to motivate them to use this information to engage in NRR management.[3] We randomly assign 807 participants in the petroleum-producing district of Bojonegoro to view one of four purpose-made short videos in a survey experiment and we combine survey-based with cost-inducing behavioral outcomes.[4] The control group was shown only a placebo video with general information on Indonesia. The first treatment video T1 adds to this first part a video segment with information on Indonesia's NRR governance framework to see whether respondents who realize how NRR transfers are designed and how much revenue their district receives are more likely to demand accountability (*information only*). The second treatment video T2 draws on the anti-corruption literature (see e.g., Cheeseman and Peiffer 2022) and provides examples of how local revenues from natural resource revenues have been mismanaged or misused (*information + negative example*). The third treatment video T3 instead takes inspiration from the rapidly growing role model literature (see Serra forthcoming) to describe how citizens have used natural resource revenues for local community development (*information + positive example*). All videos are factual, and the examples used in the second and third treatment videos are based on real occurrences in Indonesia and are employed as an additional – negative or positive, respectively – motivation to demand accountability.

Our results show that the pure information treatment (T1) has the strongest impact both on attitudes and donations. The additional positive role model narrative (T3) increases the sense of the right to benefit from and to influence local NRR management but has no impact on planned or actual behavior. The negative mismanagement narrative (T2) instead has no impact on our main outcomes. Looking at the intervening mechanisms, we find that our treatments activate different perceptions in our respondents. All three treatments strongly increase salience of NRR governance by providing new and useful information. Beyond this, the pure information treatment was most successful at influencing views on the payoffs of taking action for better NRR management, while the mismanagement narrative in T2 clearly increased the sense of grievance, but without any effect on the main outcomes. The heterogeneity analysis shows that pre-existing attitudes towards the

[3] See Haaland et al. (2023) for a useful guide to information provision experiments.

[4] Our outcomes include survey questions on stated behavior and citizen rights perception regarding NRR management, and two incentive-compatible, cost-inducing measures: a version of a Dictator Game with a voluntary donation to a national anti-corruption NGO; and a postcard to show support for transparency and accountability in local NRR management (see Section 4 for more details).

extractives sector play the biggest role for our treatment effects – both the survey and cost-inducing outcomes – followed by views on local leaders' rights and behavior, and respondents' satisfaction with their own economic situation. In particular, those who saw the extractives sector as a local challenge had stronger citizen rights perceptions and donated more when treated with T1 or T3.

The findings suggest that the provision of context-specific and easily understood information on local NRR governance can go a long way towards strengthening the crucial citizen-debate link in the transparency chain. Governments of resource-rich countries should depart from the widespread practice of publishing lengthy and often very technical national-level NRR governance reports and at least supplement these with sub-national analyses in a more accessible format. Further motivation for citizens to demand accountability through examples of successful citizen actions could enhance the effect of information provision alone, while telling people of instances of NRR mismanagement and corruption risks decreasing their satisfaction with the status quo while discouraging them from acting.

Indonesia produces a wide set of fuel and non-fuel minerals. Mining and quarrying contributed over 12% to the country's GDP in 2022, and the U.S. Energy Information Administration in 2021 characterized Indonesia as the world's largest coal (by weight) and seventh-largest LNG exporter.[5] Indonesia has been a member of the EITI since 2010 and, at time of writing, the EITI deemed the country to have made "meaningful progress" in the implementation of EITI Standards in the most recent validation, which is the third-highest (and most common) rating for EITI members. The central government redistributes a large part of the revenues from the oil and gas sector according to a detailed system, but subnational governments have substantial discretion in how to manage these revenue transfers. In many instances, this has led to corruption and other resource governance issues at the local level (see e.g., Buehler 2020). Our fieldwork was carried out in Bojonegoro District, which set up a detailed mechanism to redistribute the NRR from the central government in 2009 to avoid many of the potential pitfalls experienced by other producing areas. The initiative has survived a change in district leadership and has been successful on many fronts; nevertheless, citizens living in oil-producing villages are not fully informed about how much their village receives from the redistributed petroleum revenues and have limited influence on how the village government manages and spends this (Putri and Lujala 2023; Wardhani 2023). In this contribution, we explore how some of these persistent transparency and governance issues could be addressed.

[5] EIA "Country Analysis Executive Summary: Indonesia", September 2021, available at https://www.eia.gov/international/content/analysis/countries_long/Indonesia/indonesia.pdf (retrieved September 2023).

Our paper contributes mainly to the literature on transparency, accountability, and government effectiveness originating with Hirschman (1970). More recently, Besley and Burgess (2002) provide a theory of how public information can increase government responsiveness with an application to India, and Banerjee et al. (2018) show that better information can increase uptake among eligible households and decrease leakage of a food subsidy program in Indonesia. However, Kosack and Fung (2014) show mixed results overall of transparency and accountability initiatives, and a meta-analysis by Fox (2015) shows limited impact of information provision on general public sector performance. Anti-corruption messaging inspired the use of a negative example of NRR misuse and mismanagement in one of our treatment videos: Reinikka and Svensson (2011) find corruption-reducing effects of public information in newspapers on the local handling of education funding in Uganda, though Cheeseman and Peiffer (2022) find that (written) anti-corruption information treatments largely fail to discourage individual bribery in Nigeria. Closer to our context, Armand et al. (2020) show that a community-based information campaign in Mozambique on a large natural gas discovery was effective in raising awareness and knowledge of citizens, while information given instead only to leaders increased elite capture and rent-seeking. There is a growing number of studies that look at the success of the EITI at increasing government effectiveness and reducing corruption through transparency in the extractives sector. For example, Kasekende et al. (2016) and Rustad et al. (2017) find no impact, while Fenton Villar (2021) shows improved corruption scores.

Our use of a positive example in another one of our treatments draws on the rapidly growing literature on role models to provide inspiration and encouragement for behavioral change. Early contributions often focused on the influence of female politicians (e.g., Campbell & Wolbrecht 2006; Ladam et al. 2018), while many lab experiments have looked at the influence of leaders seen as role models on, for example, tax morale (Luttmer and Singhal 2014), ethical behavior (D'Adda et al. 2017), beliefs (Gächter and Renner 2018), and environmental behavior (Moxnes and van der Heijden 2003). Serra (forthcoming) offers an excellent review of the use of role models in development economics, where they have been employed for example in film and television (so-called "edutainment") to deliver messages to change gender-related behaviors (e.g., Jensen and Oster 2009, Chong and La Ferrara 2009, La Ferrara et al. 2017), change poverty-related behaviors (e.g., La Ferrara 2017), improve education outcomes (Riley forthcoming), and reduce corruption (Blair et al. 2019). Bernard et al. (2015) propose that video interventions with targeted information and relatable role models can be used successfully in small-scale video treatments to try to bring about behavioral change in poor countries and discuss one application to encourage future-oriented behavior in rural Ethiopia (see also Bernard et al. 2019). Our paper is most closely related to Brunnschweiler et al. (2022), who use videos

with two opinion leaders (a politician and a civil society leader) to model behavior and encourage citizen engagement in petroleum revenue management in Ghana. They find significant impacts on short-term outcomes based only on self-stated attitudes, beliefs and behavior, but no effects two years later.[6]

The rest of the paper is structured as follows. Section 2 provides contextual information on natural resource governance in Indonesia; Section 3 explains the experiment design; Section 4 describes our outcomes and hypotheses and Section 5 our data and methodology; Section 6 presents our results; and Section 7 concludes.

2. Petroleum production and governance in Indonesia

Oil was first discovered in North Sumatra in present-day Indonesia in 1883 and the first concession was taken over soon after by the newly-formed Royal Dutch Company (modern-day Royal Dutch Shell). More onshore oil was discovered in Sumatra in subsequent decades, and production continued after Indonesia gained independence in 1945, soon under the leadership of the new national oil company Pertamina (Arndt 1983).[7] Substantial oil and natural gas have since been discovered in other areas of Indonesia, too, including Kalimantan, Aceh and East Java. Despite ongoing (industrial and small-scale) petroleum production, Indonesia turned from major petroleum exporter to net importer in 2016.

Our fieldwork took place in Bojonegoro District, which is in northern Java in East Java Province, approximately 110 km west of Surabaya, the provincial capital (see Figure 1). Bojonegoro covers 2,300 km^2 and has 1.3 million inhabitants according to the latest census of 2020. Previously known for its tobacco and teak production, it was among the poorest districts in the province until the discovery of large oil and gas fields within the Cepu Block in 2001 (Widodo et al., 2013). The Cepu Block is estimated to contain over 700 million barrels of oil and 3.31 trillion cubic feet of gas reserves and consists of several oil and gas fields. Of these, the Banyuurip oil field (with estimated oil reserves of 450 million barrels) is the largest. As of 2018, Banyuurip alone produced 200,000 barrels of oil

[6] In a similar context to ours, Ogbe et al. (2023) use spatial crowdsourcing to engage citizens in petroleum revenue management in Ghana, but do not attempt to estimate its efficacy experimentally.
[7] The country became a member of OPEC in 1962 but suspended its membership for the second time in 2016. In the late 1960s, Indonesia pioneered the use of production-sharing agreements (PSAs) between Pertamina and foreign oil companies, a type of contract which is now common worldwide in the sector.

per day, contributing 25 per cent of the total national oil production (ExxonMobil, 2018). Other fields found in the district are Sukowati, Jambangan Tiung Biru, and Wonocolo.

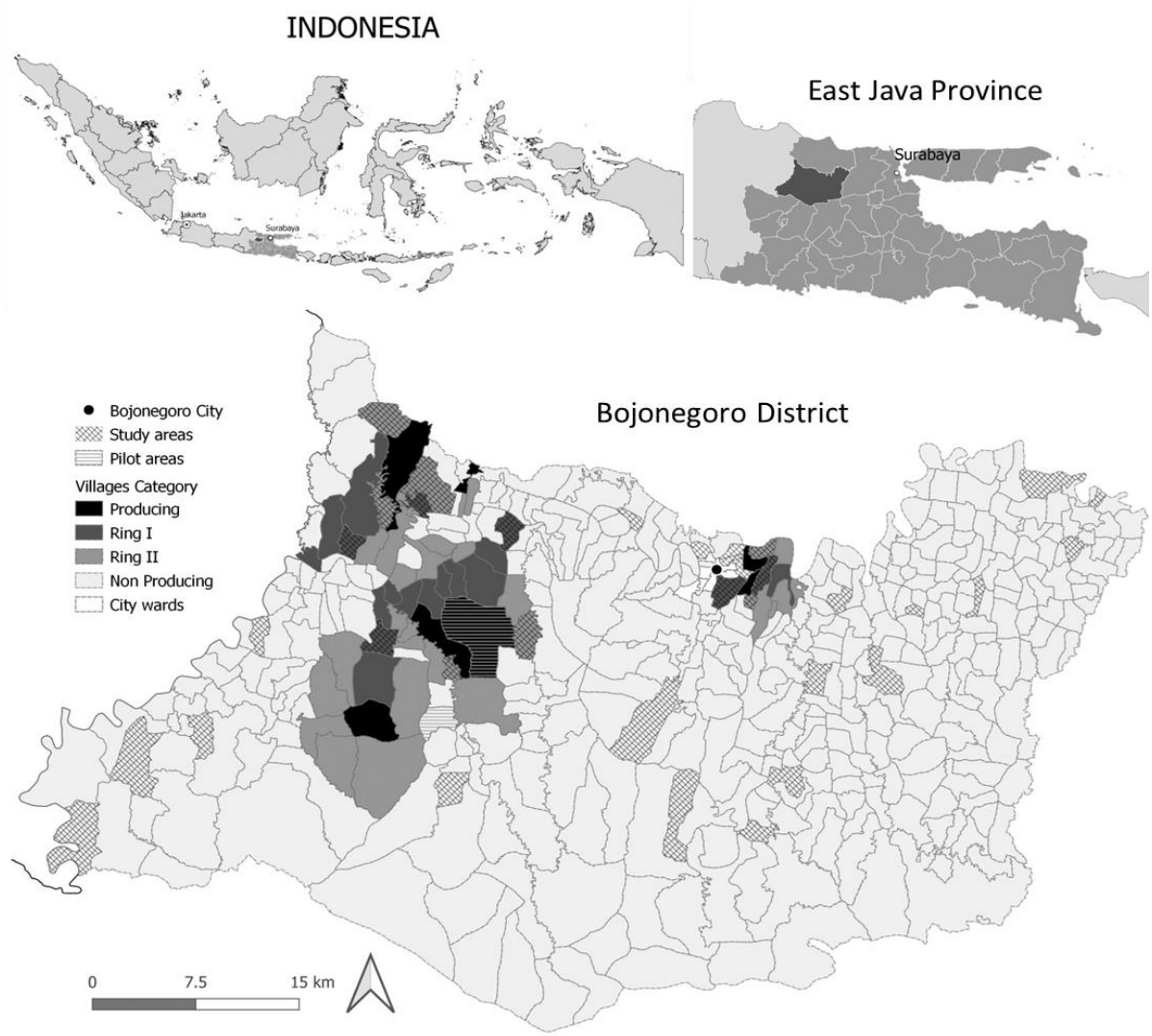

Figure 1. Study areas in Bojonegoro District, East Java Province, Indonesia

In Indonesia, the accrual of revenues from oil and gas production is held by the central government: it collects bonuses (upon signature and when specific production targets are met), taxes, and other revenues from the oil and gas sector. It then transfers 15.5 percent of oil and 30.5 percent of gas revenues to subnational governments. Of this sub-national share, 20 percent is allocated to the provincial government, 40 percent to the producing districts, and the remaining 40 percent to non-producing districts within the province.[8] The subnational authorities in Indonesia have some

[8] Natural resource revenue sharing in Indonesia was institutionalized through Law No 33/2004 on Fiscal Balance between the Central and Regional Governments. This Law was replaced with Law No 1/2022 in 2022. In the new Law, the subnational government share of oil revenues remains at 15.5 percent, of which two percent are allocated to the producing province, 6.5 percent to the producing district(s), three percent to other districts bordering the producing district(s), one percent for processing district(s), and the remaining three percent for all other districts in the province.

discretionary power to manage these NRR, which has led to many instances of corruption and other resource governance issues at the local level (see e.g., Buehler 2020). Bojonegoro District government used its power to manage the NRR transfers from the central government and designed a formula in 2009 to allocate the 12.5 percent of oil and gas revenues it received through the DBH to all villages in the district.[9] Of the 12.5 percent, 40 percent were distributed proportionately based on villages' proximity to the extraction site according to the following formula: 5 percent to producing villages (i.e. the host of oil wells); 6 percent to so-called Ring I villages (located within 600 meters from an extraction site); 7.5 percent to Ring II villages (within 600-1200 meters from a site); and the remaining 81.5 percent shared equally amongst all other villages.[10] In 2021, Bojonegoro District received US$ 147.2 million from the central government through the revenue-sharing transfer scheme (DBH) sourced from oil and gas, contributing 36.6 percent of the district's annual budget.

Despite the detailed revenue redistribution mechanism within the district that has been in place for over a decade and the substantial amounts involved, citizens living in oil-producing villages are still not fully informed about how much the village receives from the redistributed petroleum revenues and have limited influence on how the village government manages and spends this (Putri and Lujala 2023; Wardhani 2023). It is worth noting that citizens' scarce participation in villages' revenue management is at least partly rooted in village governments' limited power to design their annual budget spending and management. Village authorities' responsibilities are regulated under Indonesia's decentralization policy and do allow for independent prioritization, but village governments are still required to follow the laws and regulations set by the national government for their budget allocations, which effectively limits their room for maneuver to meet local needs of citizens (Novenanto 2010). Nevertheless, it seems like the existing opportunities for citizen engagement and involvement in NRR management at the subdistrict level are not being used and there is little awareness of NRR and citizen's rights in this area; this paper sets out to address these issues.

3. The experiment

Our survey experiment was designed to test how information provision on natural resource revenue management, combined with negative or positive examples of what has been done with local NRR

[9] See Putri and Lujala (2023) and Wardhani (2023) for more details on the background of Bojonegoro's NRR governance and the 2009 redistribution formula.
[10] Note that city wards in Bojonegoro are excluded from this mechanism and cannot have the villages' status.

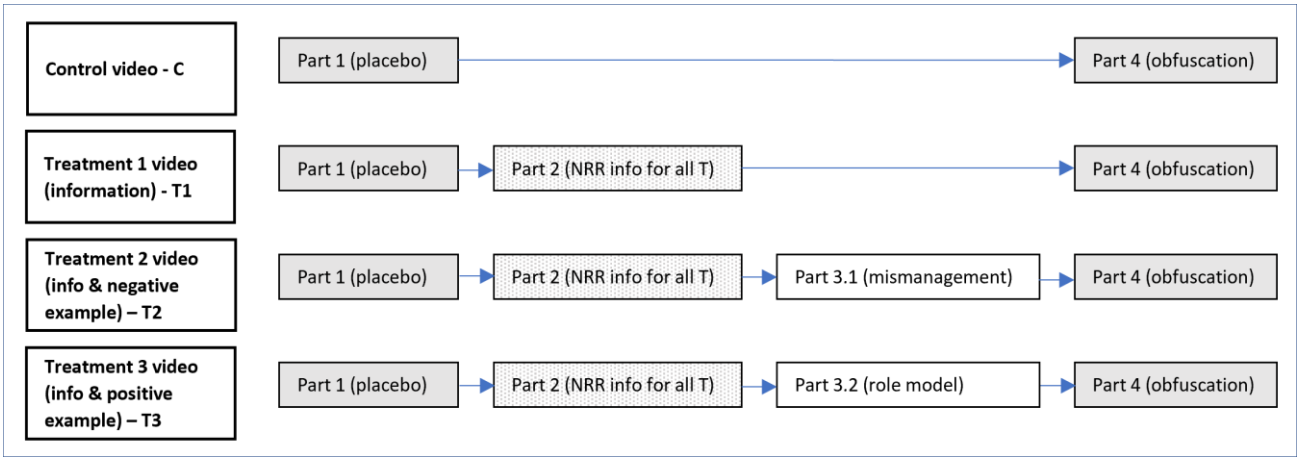

Figure 2: Survey experiment design with four videos containing two to four video segments each.

as further encouragement, impacts people's attitudes toward accountability and their behavior.[11] The main fieldwork was carried out in Bojonegoro District (see Figure 1) in May-June 2022, right after the end of the Muslim holy month of Ramadan.[12] The survey and experiment design were informed by the team's qualitative fieldwork in the district between November 2017 and April 2019, including interviews and discussions with local government officials, academics, NGO representatives, and community members to understand natural resource revenue management in the district (Putri and Lujala 2023).

The design of the survey experiment is given in Figure 2. We have four videos with around 200 survey participants viewing each video, for a total of 807 participants (the videos are described below). Treatment was randomly assigned at individual level, and all participants answered the same pre- and post-video surveys. The fieldwork was conducted in 35 villages and 4 city wardens (Bojonegoro City is the only city in the district), covering 20 of the district's 28 subdistricts.[13] The sample was stratified and excluded the two subdistricts in which our pilot villages were located (see Figure 1). We included all producing villages (in total 4, located in 4 different subdistricts). We randomly selected one Ring I village from each subdistrict in which such villages are located (6 in total), using village population as the weight in the case when more than one Ring I village existed in the subdistrict. In similar fashion, we randomly selected one Ring II village from each subdistrict

[11] The pre-analysis plan for this experiment was registered on the EGAP OSF registry (EGAP registration ID:20220425AA) on 25 April 2022. Unless otherwise specified, our analysis follows the approach set out in the pre-analysis plan. The fieldwork followed the Ethical Research guidelines at the institution of one of the co-authors.

[12] Religious giving in Islam usually peaks during Ramadan, so it is worth keeping the timing of Ramadan in mind when considering a donation-based outcome. The survey instrument and the experiment were piloted in February 2022 using a separate sample of 111 respondents recruited from two villages located in Bojonegoro District (see Figure 1).

[13] Indonesia is divided into 38 provinces (provinsi). These are divided into districts (kebupaten) and cities (kota). These are further subdivided into subdistricts (kecamatan). In rural areas, the subdistricts are further subdivided into villages (desa), while cities are instead further subdivided into wardens (kelurahan).

with such villages (7 in total). Weighted random selection was also used to select 4 wardens from Bojonegoro City's 11 wardens. Finally, we randomly sampled, again using population as our weight, 18 villages among the non-producing villages.[14]

Our sample consists of 807 adults (18 years and over). The respondents were interviewed face-to-face in Indonesian by trained enumerators using handheld tablets into which the enumerators entered the answers. A team of five enumerators, led by a team leader, conducted the interviews in each village.[15] Within each village, the team leader used Google Maps to identify the location of each hamlet and its border, which in most cases can appear as concentrated housing areas.[16] The team leader then assigned one or two enumerators to cover each hamlet, depending on the number of hamlets and the housing density (for an illustration of one of the villages, see Figure 3). In total, interviews were conducted in 116 hamlets. The enumerators interviewed a member of one household in every 4th dwelling, respecting the hamlet borders. In the case that no adult of the required gender was present at home, the enumerators were instructed to ask if one could be reached within 10 minutes' walk and go there for the interview. In the case that no household member was available, the enumerator was instructed to arrange an appointment for an interview later the same day. If no

[14] Before the start of the fieldwork, one of these non-producing villages was replaced by another one due to its remote location and very long travel time to reach it.
[15] Team members were Indonesian postgraduate or PhD students from one of the project's lead institutions.
[16] In the case of hamlets within a village that do not appear as a distinct group of houses or without a clear border, the team leader would collect information about the borders of each hamlet in a village from the village head or village official as part of a team leader's required visit to the head of every village to secure the permission for our survey.

Figure 3 Location of three hamlets (circled in yellow) in a village (outlined in red) and roads through the hamlets. Source: Google Maps, 2023

household member of the right gender (see below) was reachable on that day, the enumerator went to the next house on their line. To preserve anonymity, we did not record the interview locations.

After determining whether the respondent was eligible (i.e., an adult household member gave consent), the respondent was asked a series of questions regarding the respondent's background and household characteristics. There followed a block of questions on the respondent's trust in different institutions, risk perception and personality traits, which are used to test for potential heterogenous treatment impacts (see below). After showing the video on the tablet used for data collection, the respondent was asked a few short questions related to impressions of the video and how it might be improved (included to further reduce experimenter demand bias). These were followed by our survey outcome measures and our two incentive-compatible outcomes, a donation (i.e., a Dictator Game) and a "postcard" activity. The final survey questions seek to understand mechanisms behind our results.

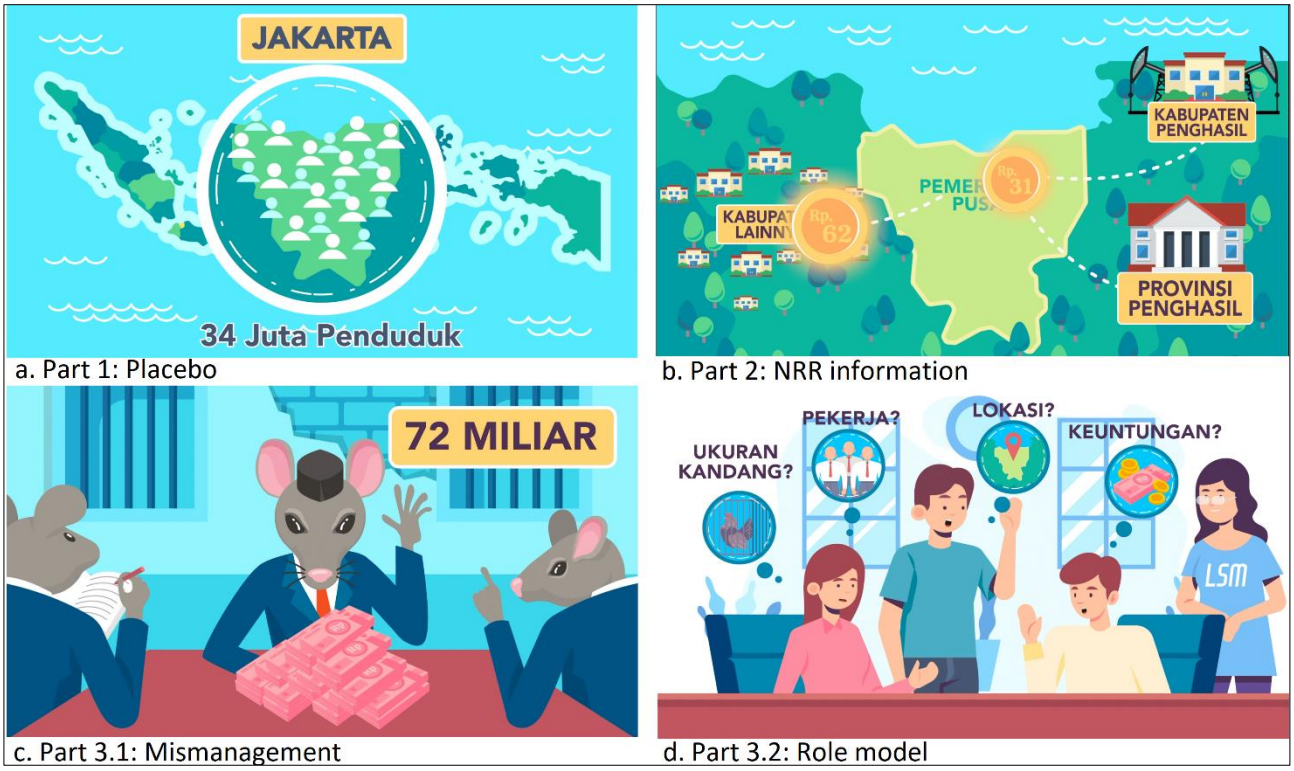

Figure 4: Screenshots of videos

The respondents were randomized individually into three treatment and one control group. The randomization was done prior to the start of the fieldwork and each enumerator was provided with a paper list indicating which video to show to a respondent. The list also indicated whether the enumerator was to interview a male or a female respondent to achieve (rough) gender balance. The enumerators moved down the list, crossing off the video shown and moving on to the next one in the next interview. This procedure led to there being between 196 and 214 respondents in each treatment arm. Respondents assigned to treatment groups watched the respective treatment video, and the respondents in the control group watched a placebo video (see Figure 2 for the design). The videos were produced by a local Indonesian company with Indonesian text and (female) voiceovers. All videos followed the same stylized design and color scheme, and all illustrations of the script were carefully tailored to support the content and be easily understood by our respondents. The videos included animations for better comprehension of the message and instrumental background music for added interest. The videos have different lengths, but they were all less than six minutes long to minimize any impact of video duration on responses.[17] All the statistics and examples used in videos are based on real data and case studies. The English language script and structure of the videos is shown in Online Appendix OA1, and screenshots of Parts 1-3 of the videos are shown in Figure 4.

[17] The placebo video was nearly two minutes long, while the negative example video (T2) was the longest at just under six minutes. The videos will be made available online upon publication of the article.

The control group (group 1) watched a video with general information on Indonesia (Part 1: "Placebo"), followed by a short segment to reduce experimenter demand effects with a still image of the map of Indonesia (Part 4: "obfuscation"). To minimize possible effects of not viewing any video, or viewing a very different type of video, all treatment groups viewed these same two video segments, but treatment videos included one or two additional segments.[18] Figure 4a shows a screenshot of the common placebo segment, depicting a stylized map of Indonesia highlighting the capital Jakarta with its 34 million inhabitants. Group 2 viewed Parts 1 and 4 and also Part 2, a fact-based information segment on natural resource revenue management in Indonesia overall, between and within provinces, and within Bojonegoro District (T1: "NRR information"). We avoid complicated language and mainly focus on the province and district level to increase salience and comprehension of the content. Figure 4b shows how the distribution of NRR to provinces and between district governments ("Kabupaten") within a province was illustrated.

Groups 3 and 4 additionally viewed part 3.1 or 3.2, respectively, i.e. they viewed four segments put together in one seamless video. Part 3.1 gives concrete examples of resource revenue mismanagement and corruption (T2: negative example or "mismanagement"). We emphasize the local community aspect in our examples and the impact on "common people" as a way of reducing the backfire effect found in some studies on anticorruption messaging (see e.g., Cheeseman and Peiffer 2022). Figure 4c depicts corrupt officials as rats, a common symbol for corruption in Indonesia. Part 3.2 instead gives an example of how one village has used resource revenues to set up an egg cooperative and used the proceeds for the benefit of the villagers (T3: positive example or "role model"). We describe the deliberation and collective decision-making process and the factors that were considered when starting the cooperative in a real case study to strengthen the behavioral role-model effect (e.g., Bernard et al. 2015). Figure 4d illustrates how a local civil society group ("LSM" in Indonesia) helped the villagers decide on the details of the cooperative.

4. Measurement and hypotheses

After viewing one of the four videos, we estimate whether respondents change their attitudes and behavior regarding NRR management through a combination of survey questions on satisfaction, citizen rights perceptions and stated behavior, and of incentive-compatible measures of demand for accountability. The final questions in our survey also explore potential behavioral mechanisms.

[18] See e.g., Bernard et al. (2015) for the importance of considering the placebo effect in video interventions.

We expect that our information treatment (i.e. Part 2 of our videos in T1-T3, see Figure 2) will directly influence respondents' perception of the size of their district's NRR and of their right to benefit from these revenues (see e.g., Armand et al. 2020, Brunnschweiler et al. 2022), and stimulate demand for accountability through changing views on the salience of the issue and on potential citizen payoffs in case of action. On top of that, providing a negative example of how NRR have been misused (Part 3.1 in T2) should further stimulate demand for accountability by providing a more correct estimation of elite capture of NRR, and by activating a sense of dissatisfaction or grievance and a desire to prevent further mismanagement and corruption (e.g., Reinikka and Svensson 2011).[19] The positive example of community development through NRR use (Part 3.2 in T3) is instead expected to strengthen treatment effects by providing a behavioral model and showing respondents feasible ways to act,[20] influencing the personal sense of responsibility and possibly alleviating concerns of free-riding. We have no strong priors regarding the relative strength of the effect of the negative (mismanagement) and the positive (role model) examples.

Our survey-based outcome measures are derived from respondents' agreement to the following statements, with answers given on a Likert scale from 1 (strongly disagree) to 5 (strongly agree). Two survey questions measure the perceived rights of citizens, and two more measure the stated intention to take action for better NRR management. We ask whether "You and people like you have the right to benefit from revenues generated by oil and gas production and mining in your district" and whether "You and people like you have the right to influence how revenues generated by oil and gas production and mining are spent in your district". We also ask whether "In the future, you will request information on how revenues generated by oil and gas production are spent in your district", and finally "In the future, you will take action to promote better management of revenues generated by oil and gas production and mining in your district".

We complement our survey-based attitudinal and behavioral measures with two incentive-compatible, cost-inducing measures of demand for accountability in NRR management. These measures are less prone to experimenter demand bias, which could arguably be a concern for our survey-based measures despite our efforts to obfuscate the purpose of our experiment. The first measure is a variation on the popular Dictator Game used in experimental economics: we offered participants the opportunity to make a voluntary donation to an Indonesian NGO active in

[19] In a related paper, Robinson et al. (2006) provide a theoretical model that predicts that countries with institutions that promote transparency and accountability in NRR will benefit from resource booms by limiting corruption.
[20] See Morgenroth et al. (2015) for a theoretical framework to explain the effect of role models.

transparency and corruption control.[21] As a compensation for their time, the respondent was rewarded with 70'000 rupiah (around USD 4.7 at the time)[22] in an envelope in six notes (two notes of 20,000 rupiah, two notes of 10,000 rupiah and two notes of 5,000 rupiah). The respondent was told that the money was hers to keep but that she could donate any part of it to FITRA, an Indonesian non-profit organization. The organization was described as follows (English version): "FITRA stands for the Indonesian Forum for Budget Transparency ["Forum Indonesia untuk Transparansi Anggaran"]. It is a non-government organization that focuses on state budget transparency in various sectors, including natural resources (minerals and coal). FITRA does activities such as studying budgets at national and subnational level, disseminating findings in public domains, educating people to be able to do budget monitoring, and formulating a national strategy to eradicate corruption." The donation was fully anonymous and made in private while the enumerator turned away, and the respondent was assured that any donation was completely voluntary.[23] A positive donated amount is interpreted as a subject's willingness to forego some own financial gain to aid transparency and accountability in NRR management in Indonesia. We consider the decision to donate, in addition to the amount donated, as these are arguably two separate decisions.[24] 85% of participants donated some of their endowment and on average, respondents donated 19'000 rupiah or 27% of their endowment.[25] The most common donations were 20'000 rupiah (chosen by 28% of participants), 10'000 rupiah (chosen by 22% of the sample) and 0 rupiah (chosen by 15% of respondents); 7% of respondents donated the full amount (Appendix Figure 1 provides an overview of donations).

The second behavioral measure requires subjects to sacrifice time and effort – after the end of the survey and the departure of the enumerator – in sending a (virtual) postcard to show support for transparency and accountability in resource revenue management. After the donation, the respondent was handed a postcard that they could use to show concern for how resource revenues are spent in

[21] The Dictator Game is a standard workhorse of experimental economics, used for example to measure prosocial behavior (Engel 2011) or charitable giving (Cartwright and Thompson 2023), and widely applied in behavioral development economics (e.g., Cardenas and Carpenter 2008).

[22] The average minimum wage for East Java Province (of which Bojonegoro is part) in 2022 was approximately 1.892 million rupiah per month, around USD 131 per month or USD 32 per week (see https://www.aseanbriefing.com/news/indonesia-increases-minimum-wage-for-2022/), implying that our payment was a meaningful amount.

[23] Most respondents (95%) reported that they had not heard of FITRA prior to the survey. The script for the donation activity can be found in Online Appendix OA2. The participant was given an empty envelope with their respondent ID on it to ensure anonymity and asked to put any amount in the empty envelope using only the notes provided, and then put this envelope in a see-through box labelled "FITRA". Participants were asked to seal the envelope with their ID number on it and place it in the box even if they decided "not to make a donation". This box would be opened only by the Indonesian study partners, with any donations it contained handed over in full to the organization. FITRA received the donations and is using them for a campaign on NRR management.

[24] Consideration of the decision to donate as a separate outcome was not included in the pre-analysis plan.

[25] Indonesians have a relatively high propensity to give, as demonstrated for example by their top score in the World Giving Index (see https://www.cafonline.org/docs/default-source/about-us-research/caf_world_giving_index_2022_210922-final.pdf, accessed 15 September 2023). Our average donation share is comparable to that found in an experiment on conservation funding in Indonesia (Nelson et al. 2018).

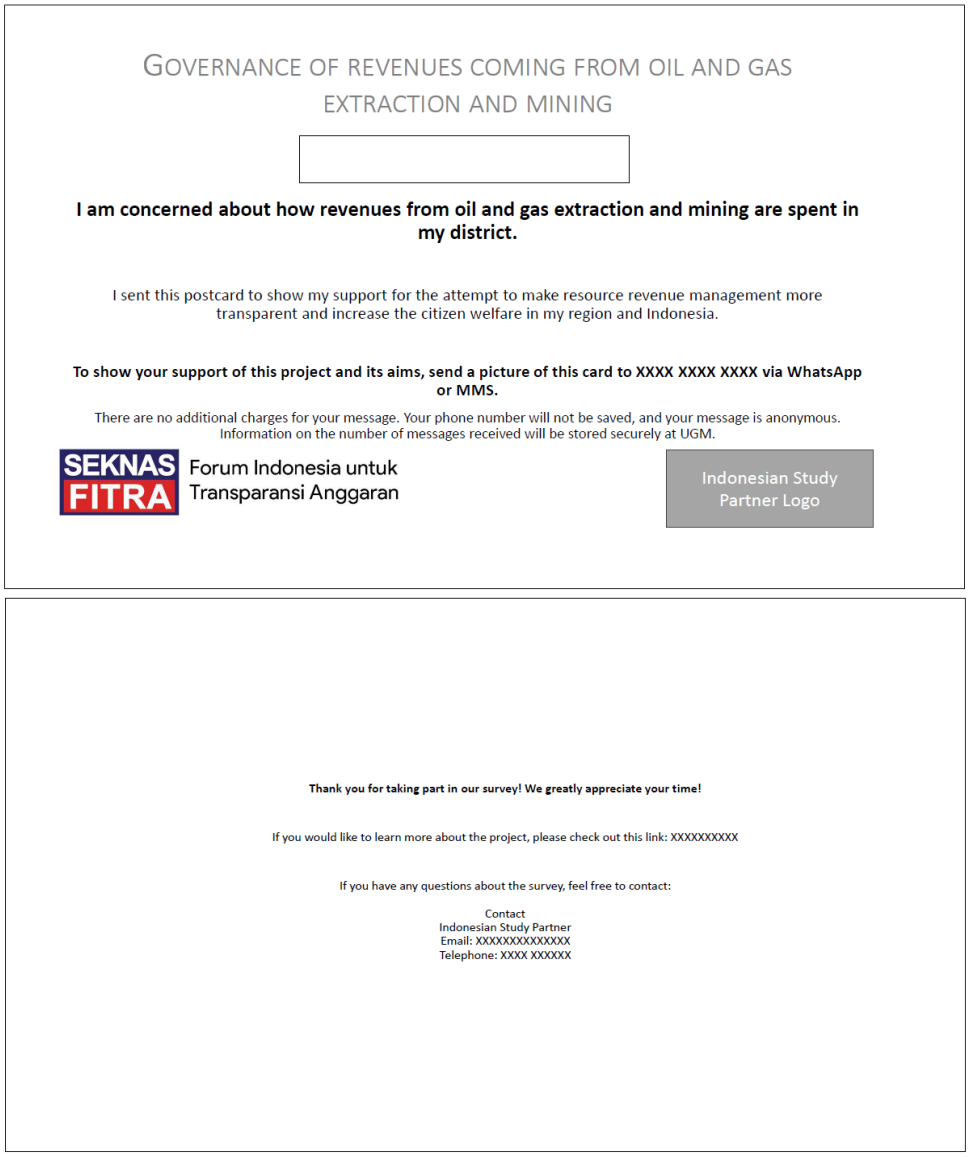

Figure 5: Postcard front and back in English version

Bojonegoro District and support efforts to make NRR management more transparent and increase citizen welfare. The postcard was printed on two sides, with a simple message in Indonesian. We show the English translation in Figure 5. The postcard was anonymous, but it had the subject ID number at the top, allowing us to link a postcard to the survey respondent. The respondent was asked to take a photo of the front of the postcard and send it by July 1st 2022 via a popular social media app to an account set up for this purpose.[26] This outcome is modelled after the postcards used to measure the demand for better governance in Cape Verde (Batista and Vicente 2011), the desire to combat electoral violence in Nigeria (Collier and Vicente 2014), and the demand for accountability in resource revenue management in Mozambique (Armand et al. 2020). Note that in these field experiments conducted in Africa, postcards were either pre-stamped and respondents invited to

[26] The script for the postcard explanation is provided in Online Appendix OA3.

physically mail them (Batista and Vicente 2011; Collier and Vicente 2014), or respondents were invited to drop the postcards in sealed boxes in their village (Armand et al. 2020). The low use of postal services in Indonesia, with accompanying low density of mailboxes especially in rural communities, made the former approach unsuited to our context, and the latter was infeasible due to the one-off nature of our experiment. We therefore chose to invite respondents to take a photo of the physical postcard and send it to the research team via a social media app (WhatsApp), which is very widely used in the country. In total, we received 101 postcards (13% of the respondents). This is substantially lower than the return rates of the similar postcard activities in Africa of 43% in Batista and Vicente (2011), 37% in Collier and Vicente (2014) and 88% in Armand et al. (2020).

5. Data and methodology

5.1 Data description

Summary statistics and survey questions are provided in Appendix Table 1. By design, roughly half of our respondents is female. Our respondent is 43 years old on average; 72% of respondents live in the countryside while slightly more than 10% of the respondents live in city wards (Kelurahan) (semi-urban areas being the final category). Roughly half our respondents are household heads. About 6% have completed no formal schooling while 25% have completed elementary school, 26% middle school and 34% high school or vocational high school. Nearly all (95%) can both read and write Indonesian. Farming is the most common occupation (31%),[27] followed by self-employment (24%) and wage job (12%). 25% are housewives. Housewives together with students (2%), retired (1%), and unemployed (4%) form our excluded occupation group in the analysis. 28% of our respondents held a leadership position in their community, most often as community group leader or administrator (19%). 8% of the respondents report that a member of the household engages in oil extraction.

Our mobile assets index combines the following six dummy variables: ownership of a smartphone, bicycle, tv, moped, other motorized vehicle, and fridge. Our property asset index combines three dummy variables: ownership of the house the household occupies, ownership of land, and whether the dwelling can be classified as large.[28] Almost 90% of the respondents own the house they live in and over 80% own land.

[27] This includes fishers (1 respondent), artisanal and small-scale miners (4 respondents), and forestry (2 respondents).
[28] Large dwellings are classified as those which have more rooms than the mean number of rooms plus one standard deviation.

90% noted that the video provided them with new information, and almost all agreed that the information provided was useful for them (95%). Tests for balance across the control group and treatment arms are provided in Appendix Table 2. There are few significant differences between treatment arms, suggesting that treatment randomization was successful.

5.2 Empirical methodology

To test our hypotheses that information provision increases people's demand for accountability and can be further enhanced by the provision of a positive example on how people can promote better resource revenue governance or negative examples of mismanagement, we estimate the following equation using Ordinary Least Squares (OLS) regression with standard errors clustered at the hamlet level:

$$y_i = \alpha + \beta_{T1} T1_i + \beta_{T2} T2_i + \beta_{T3} T3_i + X_i\gamma + Y_h\delta + FE_s + \varepsilon_i, \qquad (1)$$

where y_i is the outcome for individual *i*. T1, T2 and T3 are our main coefficients of interest: they take the value of one if individual *i* is in the respective treatment group and zero otherwise. We also estimate an alternative model that aggregates the three treatments T1-T3 into a dummy for "any treatment". Vectors *X* and *Y* capture individual *i* and household *h* covariates, respectively; we present results both with and without these additional variables, which – given successful randomization of treatment assignment – serve to render the estimation of the treatment effects more precise. *FE* denotes subdistrict *s* fixed effects (always included), and ε is the error term.[29] All analyses were conducted using STATA 18 and replication data and instructions will be made available upon the publication of the paper.

6. Estimation results

6.1 Main results

Our main results are presented in Table 1. For each outcome variable, the table includes a specification with a combined treatment measure (*any treatment*) taking the value of 1 if the respondent saw any of the three treatment videos, a specification with the three treatments included

[29] Robustness analyses were also performed using (ordered) logit estimations with very similar findings; results are provided in Online Appendix OA4 for all main estimations, except for *Donation* (which we consider a continuous variable).

Table 1. Main results: treatment effects on survey and experimental outcomes

	Right to benefit			Right to influence			Request information			Future action			Donation: yes or no			Donation amount			Postcard		
VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)
Any treatment	0.069			0.150**			-0.000			-0.022			0.005			1,392.525			-0.014		
	(0.065)			(0.060)			(0.079)			(0.057)			(0.027)			(1,407.484)			(0.026)		
T1 Information		0.073	0.068		0.153**	0.157**		0.028	0.019		0.016	0.004		0.064**	0.057*		2,982.076	2,227.594		-0.031	-0.033
		(0.083)	(0.082)		(0.071)	(0.068)		(0.096)	(0.093)		(0.078)	(0.079)		(0.032)	(0.032)		(1,877.092)	(1,774.038)		(0.033)	(0.033)
T2 Mismanagement		0.013	-0.008		0.115*	0.097		-0.058	-0.059		-0.086	-0.106		-0.018	-0.034		928.414	9.825		-0.005	-0.003
		(0.079)	(0.083)		(0.069)	(0.068)		(0.082)	(0.082)		(0.074)	(0.075)		(0.034)	(0.033)		(1,636.690)	(1,608.090)		(0.032)	(0.032)
T3 Role model		0.129*	0.112*		0.186**	0.181**		0.035	0.050		0.012	-0.001		-0.028	-0.035		329.171	-541.174		-0.007	-0.010
		(0.070)	(0.067)		(0.081)	(0.077)		(0.108)	(0.106)		(0.079)	(0.076)		(0.035)	(0.036)		(1,715.996)	(1,738.608)		(0.031)	(0.030)
Age			0.002			-0.007***			-0.009***			-0.006**			-0.002			49.868			-0.001
			(0.003)			(0.003)			(0.003)			(0.003)			(0.001)			(64.127)			(0.001)
Gender (Female = 1)			0.097			0.030			-0.085			-0.113			0.019			-4,605.991**			-0.043
			(0.072)			(0.084)			(0.111)			(0.071)			(0.036)			(1,796.597)			(0.038)
Household head			0.101			0.212**			0.082			0.191**			-0.049			-2,179.822			0.011
			(0.079)			(0.087)			(0.096)			(0.090)			(0.033)			(1,667.078)			(0.035)
Urban			-0.155			0.174			0.263			0.063			0.008			-1,813.194			0.097
			(0.104)			(0.126)			(0.168)			(0.158)			(0.052)			(4,310.486)			(0.075)
Education primary			0.131			-0.017			0.062			0.034			0.189**			8,043.524***			-0.019
			(0.115)			(0.130)			(0.157)			(0.141)			(0.087)			(2,254.932)			(0.063)
Education lower secondary			0.287**			0.052			0.112			0.169			0.204**			10,646.444***			-0.009
			(0.114)			(0.132)			(0.167)			(0.133)			(0.092)			(2,524.306)			(0.068)
Education upper secondary or more			0.339***			0.057			0.155			0.227*			0.209**			13,144.975***			0.014
			(0.118)			(0.132)			(0.157)			(0.136)			(0.095)			(2,674.593)			(0.067)
Community leader			0.094			0.010			0.128*			0.097			0.012			-2,050.667			-0.030
			(0.062)			(0.059)			(0.072)			(0.072)			(0.028)			(1,250.322)			(0.030)
Mining			0.070			-0.097			0.018			0.021			-0.069			5.142			-0.052
			(0.070)			(0.089)			(0.119)			(0.098)			(0.053)			(2,959.819)			(0.043)
Occupation farming			-0.024			-0.111			-0.072			-0.145			0.069*			-589.429			-0.056
			(0.074)			(0.082)			(0.110)			(0.095)			(0.040)			(2,098.162)			(0.040)
Occupation wage labour			0.039			0.037			0.019			0.059			0.050			-1,546.617			-0.134***
			(0.095)			(0.082)			(0.108)			(0.100)			(0.031)			(2,679.994)			(0.043)
Occupation self-employment			-0.127			-0.197**			-0.112			-0.229***			-0.010			-3,117.636*			-0.061*
			(0.089)			(0.084)			(0.089)			(0.076)			(0.036)			(1,841.942)			(0.031)
Mobile assets index			0.003			0.053*			0.004			-0.002			0.026*			843.880			0.000
			(0.030)			(0.029)			(0.046)			(0.033)			(0.015)			(701.481)			(0.015)
Property index			-0.020			0.047			0.019			0.013			0.014			1,189.421			0.019
			(0.048)			(0.036)			(0.054)			(0.053)			(0.020)			(963.533)			(0.027)
Observations	785	785	783	777	777	776	767	767	765	775	775	773	807	807	804	803	803	800	807	807	804
R-squared	0.032	0.036	0.070	0.031	0.033	0.084	0.024	0.026	0.068	0.032	0.034	0.093	0.063	0.072	0.129	0.058	0.061	0.112	0.034	0.035	0.057
Wald tests: p-values																					
T1 vs. T2		0.448	0.335		0.574	0.378		0.355	0.406		0.310	0.265		0.009	0.002		0.208	0.145		0.380	0.347
T1 vs. T3		0.397	0.478		0.658	0.737		0.943	0.753		0.964	0.951		0.006	0.006		0.138	0.113		0.481	0.498
T2 vs. T3		0.128	0.119		0.361	0.259		0.304	0.239		0.244	0.213		0.803	0.970		0.754	0.763		0.946	0.832

Note: Table shows coefficients for OLS regressions with (hamlet-)clustered standard errors in parentheses. All specifications include subdistrict dummies.
*** p<0.01, ** p<0.05, * p<0.1

Table 2. Mechanisms

PANEL A	Satisfaction with oil & gas management			Change in satisfaction			Video provided new information			Video provided useful information		
VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Any treatment	-0.131*			-0.160**			0.233***			0.160***		
	(0.069)			(0.077)			(0.050)			(0.054)		
T1 Information		-0.060	-0.044		-0.129	-0.130		0.248***	0.238***		0.193***	0.182***
		(0.080)	(0.078)		(0.093)	(0.094)		(0.058)	(0.061)		(0.063)	(0.061)
T2 Mismanagement		-0.277***	-0.269***		-0.212**	-0.211**		0.192***	0.183***		0.136**	0.127**
		(0.095)	(0.090)		(0.094)	(0.097)		(0.063)	(0.060)		(0.062)	(0.062)
T3 Role model		-0.049	-0.052		-0.133	-0.131		0.263***	0.258***		0.152**	0.136**
		(0.081)	(0.086)		(0.097)	(0.101)		(0.080)	(0.079)		(0.062)	(0.061)
Observations	757	757	755	672	672	671	791	791	788	796	796	793
R-squared	0.029	0.040	0.087	0.018	0.020	0.042	0.045	0.046	0.057	0.044	0.045	0.080
Wald tests: p-values												
T1 vs. T2		0.013	0.007		0.382	0.371		0.429	0.428		0.277	0.306
T1 vs. T3		0.907	0.932		0.961	0.994		0.841	0.787		0.473	0.437
T2 vs. T3		0.027	0.036		0.450	0.448		0.427	0.379		0.748	0.866
PANEL B	**Requesting better management of oil & gas revenues is a worthwhile action**			**Corruption seen as a problem**			**Personal responsibility to improve management of oil & gas revenues**			**No matter what you do, nothing will change in the oil & gas revenue management**		
VARIABLES												
Any treatment	0.076			0.095			0.140**			-0.170**		
	(0.051)			(0.065)			(0.067)			(0.071)		
T1 Information		0.109*	0.101*		0.056	0.048		0.250***	0.246***		-0.196**	-0.184**
		(0.061)	(0.057)		(0.082)	(0.081)		(0.084)	(0.087)		(0.080)	(0.080)
T2 Mismanagement		0.108*	0.107*		0.149**	0.117*		0.057	0.038		-0.185**	-0.211**
		(0.058)	(0.058)		(0.071)	(0.068)		(0.082)	(0.083)		(0.085)	(0.086)
T3 Role model		0.004	-0.017		0.076	0.068		0.123	0.113		-0.127	-0.135
		(0.066)	(0.064)		(0.072)	(0.069)		(0.083)	(0.083)		(0.094)	(0.094)
Observations	761	761	759	795	795	792	761	761	759	754	754	751
R-squared	0.025	0.030	0.074	0.028	0.031	0.081	0.054	0.061	0.075	0.046	0.047	0.069
Wald tests: p-values												
T1 vs. T2		0.984	0.924		0.198	0.341		0.028	0.013		0.898	0.735
T1 vs. T3		0.106	0.068		0.780	0.774		0.111	0.070		0.420	0.551
T2 vs. T3		0.093	0.064		0.228	0.404		0.463	0.377		0.519	0.388
Controls: yes/no	no	no	yes	no	no	yes	no	no	yes	no	no	yes

Note: Table shows coefficients for OLS regressions with (hamlet-)clustered standard errors in parentheses. All specifications include subdistrict dummies.
*** p<0.01, ** p<0.05, * p<0.1

separately, and a specification with the full set of covariates. All specifications include subdistrict dummies and a constant (not shown).

The results for our main outcomes do not show strong evidence for all of our hypotheses. We see a significant and positive impact of the combined treatment variable only on the right to influence what happens with NRR in the district (Column 4): receiving any information treatment increases the likelihood that the respondent agrees to the statement by 0.15 points on the Likert scale. Our information-only treatment T1 has the strongest and most robust average effects: we see that it significantly increases the respondent's sense of their right to influence NRR management in their district by over 0.15 points (Columns 5-6). We note that T1 is the only treatment to impact one of our incentive-compatible outcomes: it significantly increases the propensity to donate by around 6 percent (columns 14-15) though not the amount donated (which is positive but narrowly misses conventional significance levels). No treatment had an effect on the likelihood of sending a (virtual) postcard (columns 19-21) or on stated future action (columns 7-12).

Like T1, T3 affected some of our main outcomes, suggesting that there is some value tor giving additional positive motivation. T3 was the only treatment to increase the respondent's sense of the right to benefit from oil and gas revenues, by 0.11-0.13 points (columns 2-3). T3 also increased the sense of the right to influence oil and gas revenue management in the district by over 0.18 points (columns 5-6); note that although the magnitude of the treatment effect of T3 is larger than that of T1, the difference is not statistically significant, as shown in the Wald statistics at the bottom of the table. In sum, the positive role model narrative is effective at changing attitudes towards citizen rights on NRR management, but not intended or real actions. The negative mismanagement narrative instead has no significant impact on any outcome.

Our covariates reveal that older people on average feel less entitled to influence decision-making regarding resource revenues (column 6), are less likely in future to request information (column 9) or take action (column 12), and are less likely to donate (column 15). Household heads instead feel more entitled to influence resource revenue management (column 6), are more likely to say they will take action (column 12), and slightly less likely to send a postcard (column 21). Female respondents donate substantially less money to FITRA (4'600 rupiah on average), but gender seems to play no role for our other outcomes. Those with higher education levels have a stronger sense of the right to benefit from NRR (column 3) and donate on average a lot more (column 18). Community leaders have a slightly

weaker sense of the right to benefit from NRR (column 3) and are slightly less likely to say they will request information (column 9). Respondents who earn a regular wage are substantially less likely to send a postcard (column 21). Self-employed seem to think more negatively about their right to benefit (column 3) and to influence decision-making (column 6), are less likely to say they will take future action (column 12), donate less (column 21) and are less likely to send a postcard (column 21). Finally, those scoring higher on the mobile assets index have a slightly stronger sense of their right to influence NRR management (column 6) and higher likelihood to donate (column 15); the property index score instead has no measurable effect on our outcomes.

In sum, we find that the pure information treatment (T1) shows the strongest impact both on attitudes and a cost-inducing measure of behavioral change regarding local NRR management. The additional positive role model narrative (T3) strengthens the sense of the right to benefit from NRR and to influence local NRR management but has no impact on planned or actual behavior.[30] The negative mismanagement narrative (T2) instead has no impact on our main outcomes; in that sense, we can say that positive messaging is more effective than negative. We will now examine the possible intervening mechanisms, before looking at heterogenous effects.

6.2 Mechanism analysis

Our survey questionnaire included a number of post-treatment questions designed to look into the mechanisms behind our treatment results. As outlined in Section 4 above, we hypothesize that our information treatments can affect our outcomes through two avenues: first, by influencing respondents' perception of the salience of local NRR management in terms of a better understanding of their rights and responsibilities. Second, by influencing their perception of the payoff of demanding better NRR management in terms of more accurate estimates of cost, benefit, and probability of success of an action. We analyze intervening mechanisms in turn, with the main results summarized in Table 2; the full list of mechanisms examined is in Appendix Table 2.

Salience perceptions. The salience of the issue can only be influenced if our information treatments were relevant and useful. The mechanism analysis in Table 2, Panel A shows that all treatments T1-T3 significantly increased awareness of the issue through an information channel, with no significant

[30] This is very similar to the findings of Brunnschweiler et al. (2022) for their treatment using two leaders to motivate demand for accountability on NRR management in Ghana.

difference in impact sizes: respondents were significantly more likely to agree that the information was both new (by 0.18-0.26 points on average, columns 7-9) and useful (by 0.12-0.19 points, columns 10-12). However, respondents' views on the importance of knowing how NRR are managed in their district is not significantly affected by our treatments: agreement to this statement was quite high before (mean of 3.77 points) and increased by nearly a third of a point overall after treatment, though the mismanagement narrative of T2 showed a marginally significant negative effect with otherwise no significant impacts (results not shown).

Payoff perceptions. The main outcomes discussion above showed that the pure information treatment T1 had the strongest impact. Our mechanism analysis shows that this happened not only through changing views on the salience of NRR management, as discussed above, but also on the payoffs from taking action. The information treatment significantly increased a respondent's agreement that demanding better oil and gas revenue management is a worthwhile action (by 0.11 points, Panel B columns 1-3) and that it is their personal responsibility to improve oil and gas revenue management (by 0.25 points on average, Panel B columns 7-9). We also see that T1 reduced respondents' agreement that any personal action is futile (by 0.18-0.2 points, Panel B columns 10-12). We can say that the perception of the payoff of action therefore increased, and the effects on the mechanisms overall suggest that T1 was not a weak treatment.

We next turn to the treatment T3 that added a positive role model story to the main information treatment; this was also found to have had an impact on several main outcomes. Aside from the increased salience effect common to all three treatments (Panel A), T3 does not appear to have significantly activated other mechanisms. Though T3 does not seem to have been a weak treatment, it did not affect the perception that others would support action to demand better oil and gas revenue management (i.e. alleviate a collective action problem) or give inspiration for feasible action to promote better revenue use (results not shown), two channels through which we expected the positive example to have an impact.

Finally, we examine what mechanisms our treatment T2 with the negative example after the main information part affected. Interestingly, although we found no impact on our main outcomes, T2 shifted respondents' answers for several mechanisms. The addition of the negative mismanagement and corruption narrative is the only treatment to have significantly affected the levels of satisfaction with current NRR management, and the change in satisfaction from pre-treatment levels (Panel A columns 1-

6):[31] these significantly decrease by nearly 0.3 points and over 0.2 points, respectively. T2 increased respondents' agreement that it is worth respondent's time and effort to request better NRR management by 0.11 points (Panel B columns 1-3), and it is the only treatment to affect the perception that corruption is a problem in Indonesia, increasing it by 0.12-0.15 points (Panel B columns 4-6). Interestingly, the increased sense of grievance that is evidenced here is not accompanied by a sense of futility: the mismanagement and corruption narrative in T2 also decreased agreement that there is no use in doing anything by 0.19-0.21 points (Panel B columns 10-12). Overall, this suggests that T2 was not a weak treatment and that it activated feelings of dissatisfaction with the status quo and the sense that it is worth doing something about oil and gas revenue (mis-) management; yet we do not see this linked to any significant impact on our main outcomes.

Comparing treatments, they all provide new and useful information, but they activate different feelings and perceptions in our respondents. Overall, similarly to our main outcomes, we find that the pure information treatment T1 has the most significant effect on our mechanisms. Treatment effects of T3 are generally larger than those of T2, suggesting that the negative messaging reinforces the view that corruption is too pervasive, and that frustration or anger constitute a weaker incentive to act than a positive example. At the same time however, the sense of grievance that emerges from the mechanism analysis does not seem to trigger any loss aversion, as T2 is our only treatment that shows no impact on any outcome.

6.3 Heterogeneity analysis

Different subgroups of respondents could react differently to our treatments, so we identify a range of variables in our pre-treatment survey that allow us to investigate heterogenous treatment effects. We discuss the main heterogenous effects by topic below and present the results in Appendix Table 3.[32]

Views on the extractive sector. First, we consider respondents' attitudes toward the extractive industries as some people are likely to be more aware of NRR issues and have stronger ex-ante opinions. We look

[31] The agreement question to the statement "Our governments at different levels are doing a good job in managing the oil and gas sector." is repeated from the pre-treatment survey. Use of such diff-in-diff questions in information provision experiments is described in Haaland et al. (2023); see Brunnschweiler et al. (2022) for an application in a similar context.

[32] We identified 24 possible heterogenous effects worth investigating in our pre-analysis plan (see Appendix Table 2). We discuss only the most important findings here and show results for these 10 variables in Appendix Table 3; all other heterogenous effects results are available upon request. For easier interpretation, we transform disagree-agree and distrust-trust variables into dummies (agree and strongly agree=1; some trust and great deal of trust =1). The control group is therefore respondents who do not agree (trust) to the respective heterogeneous-effect question and were not treated.

at two different variables: respondents who view the mining sector as a challenge in their district agree more strongly that they have a right to influence how oil and gas revenues are managed if they have been treated with any treatment, with the positive-example treatment T3 showing the strongest effect. Those treated with T3 are also more likely to say they will request information, and those treated with the pure-information treatment T1 or the role model treatment T3 on average donate more money (18,500 and 10,800 rupiah more than the control group, respectively). We also look at how those who think that oil and gas production has a positive impact on local communities respond to our treatments. We see that the mismanagement treatment T2 has the biggest differential effect: respondents who initially held positive views of the oil and gas sector and watched the T2 video were less likely to agree they have a right to influence how oil and gas revenues are managed and donate around 7,400 rupiah less on average, which suggests that they see no great need for changing the status quo.

Views on leaders and institutional quality. We next investigate how respondents' views on political leaders and corruption may interact with our treatments. We find that respondents with greater trust in national leaders donate on average 6,700 rupiah less if treated with the information video (T1), likely believing that leaders in Jakarta can be trusted to adhere to current NRR management rules. Those respondents who agreed that "district leaders have a right to obtain a share of public revenues as a compensation for their service" are on average around 22% more likely to donate to the corruption-fighting NGO if they received T1 (which seems counterintuitive unless the new information on NRR amounts and distribution rules changed their minds on local leaders' rights), and 24-26% less likely to send the postcard to show support for more transparent NRR management if treated with T1 or T3 (which is in line with ex-ante views but contradicts the immediate post-treatment donation behavior). Those who initially said they think that district leaders spend public revenues in the best possible way are 18.4% more likely to donate to FITRA if shown video T2; again, this may indicate that our mismanagement and corruption narrative changed previous opinions.

Aspirations. People's personal (economic) aspirations could affect how they respond to our treatments that provide information on the size of NRR and potential payoffs from action. We find that respondents who are generally satisfied with their current economic situation are nearly 18.5% more likely to donate to FITRA on average when shown the positive-example treatment video T3. Those who are willing to work hard to improve their economic situation react a lot to the pure information treatment T1: they agree more strongly that they have the right to benefit from NRR and to influence how NRR are managed (by

a substantial 0.67 and 1.1 points, respectively); they are more likely to agree that they will take future action for better NRR management (by over 1 point); but they (marginally significantly) donate on average 15,500 rupiah less. Those willing to work hard to improve their situation also show some sign of responding to the positive role model narrative of T3, being 40% more likely to send the postcard, though this effect is only marginally significant.

Prosociality and accountability. General prosociality and accountability preferences could also influence our treatment effects. We asked two questions on prosocial behavior (see Falk et al. 2018) and found that those who were willing to help someone from their local community were 22.5% percent less likely to send the postcard to show support for better NRR management when they had seen the role model video T3, while those willing to help a stranger donated significantly less on average when treated with the pure information video T1 or the mismanagement video T2 (6,330 and 7,000 rupiah less on average, respectively). Finally, we tried to gauge the respondent's attitude towards individual accountability by presenting them with a scenario: if a mistake was made at work concerning two workers, would they prefer to attribute accountability to the culpable worker by fining her a large amount, or would they prefer to equally distribute the accountability and fine both workers a much smaller amount? We find that respondents who prefer equal accountability agree more strongly (by over 0.3 points) that they have a right to influence revenue management when shown the role model video (T3), yet are 14% less likely to send the postcard to support more transparency (though this is only marginally significant).

Overall, we see that pre-existing attitudes and beliefs of people make them react differently to treatments, particularly to our pure information treatment T1, followed by the role model narrative in T3 and the mismanagement narrative in T2. Attitudes towards the extractives sector play the biggest role, followed by views on local leaders' rights and behavior, and respondents' satisfaction with their own economic situation.

7. Conclusions

In this paper, we explore how individuals' engagement in local natural resource revenue (NRR) management can be enhanced and encouraged. We focus on Indonesia, which is a large gold and petroleum producer, among other natural resources, and a member of the EITI We run a survey

experiment with over 800 participants and three information treatments in a petroleum-producing district, combining survey-based measures with cost-inducing behavioral outcomes. The control group was shown only a placebo video with general information on Indonesia. The first treatment video T1 adds to this a video segment with information on Indonesia's NRR governance framework to see whether respondents who realize how much NRR their district receives and how sub-district NRR transfers are designed are more likely to demand accountability (*information only*). The second treatment video T2 also provides examples of how revenues from natural resource revenues have been mismanaged or misused (*information + negative example*). The third treatment video T3 instead describes how citizens have used natural resource revenues for local community development (*information + positive example*).

Our experiment shows that the pure information treatment (T1) has the strongest impact both on attitudes and donations. The additional positive example narrative (T3) strengthens the sense of the right to benefit from and to influence local NRR management but has no impact on planned or actual behavior, while the negative mismanagement narrative (T2) has no impact on our main outcomes. The mechanism analysis reveals that our treatments activate different feelings and perceptions in our respondents. All three treatments strongly increase salience of NRR governance by providing new and useful information. Beyond that, the pure information treatment was most successful at influencing views on the payoffs of taking action for better NRR management, while the mismanagement narrative in T2 increased the sense of grievance – though without any effect on the main outcomes. The positive role model treatment T3 did not activate any other channel. The heterogeneity analysis shows that pre-existing attitudes towards the extractives sector play the biggest role for our treatment effects, followed by views on local leaders' rights and behavior, and respondents' satisfaction with their own economic situation.

The governance of natural resource wealth is a key factor in promoting strong institutions and economic development in resource-rich countries, and the international community promotes transparency and accountability as a means of improving NRR management. The theoretical literature sees citizens as a fundamental part of successful transparency and accountability initiatives for better natural resource revenue (NRR) management. In practice however, even where governments have committed to good NRR management, for example by joining the Extractive Industries Transparency Initiative (EITI), citizens often have low levels of knowledge regarding NRR rules and regulations, their citizen rights, or how to make use of them to achieve better local development outcomes. Our findings suggest that the provision of context-specific and easily understood information on local NRR governance can go a long

way towards strengthening the crucial citizen-debate link in the transparency chain. Governments of resource-rich countries should depart from the widespread practice of publishing lengthy and often very technical national-level NRR governance reports and at least supplement these with sub-national analyses in a more accessible format. Further motivation for citizens to demand accountability through examples of successful citizen actions could enhance the effect of information provision alone, while telling people of instances of NRR mismanagement and corruption risks decreasing their satisfaction with the status quo while discouraging them from acting.

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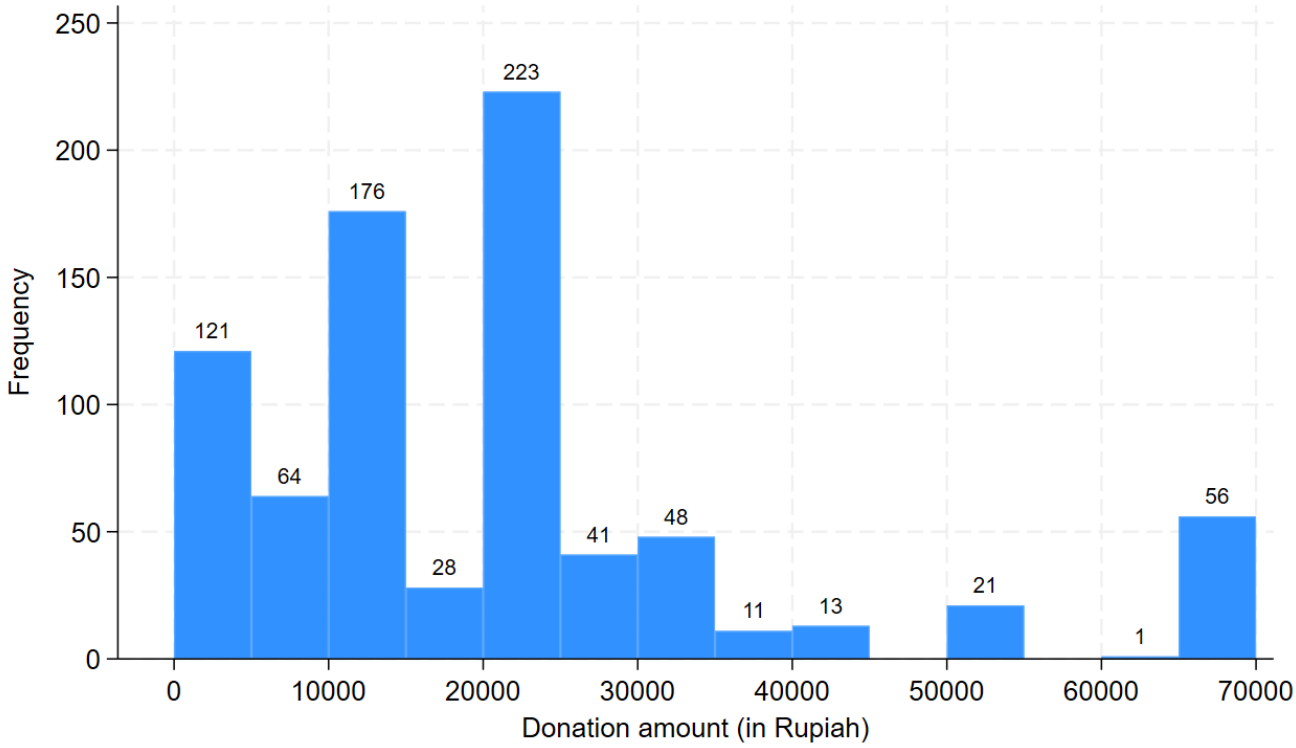
Appendix 1: Additional figures



Appendix Figure 1: Donations received across all respondents (in Indonesian rupiah).

Appendix 2: Additional tables

Appendix Table 1. Summary statistics with questions and coding.

Variable	Obs.	Mean	Std. Dev.	Min	Max	Question (incl. variable coding)
Outcome variables						
Right to benefit	785	4.03	0.70	2	5	To what extent do you agree with the following statement? You and people like you have the right to benefit from revenues generated by oil and gas production in your district (1 - disagree very strongly, 2 - disagree, 3 - neither agree nor disagree, 4 - agree, 5 - agree very strongly)
Right to influence	777	3.89	0.72	2	5	To what extent do you agree with the following statement? You and people like you have the right to influence how revenues generated by oil and gas production are spent in your district (1 - disagree very strongly, 2 - disagree, 3 - neither agree nor disagree, 4 - agree, 5 - agree very strongly)
Request information	767	3.64	0.87	1	5	To what extent do you agree with the following statement? In the future, you will request information on how revenues generated by oil and gas production are spent in your district (1 - disagree very strongly, 2 - disagree, 3 - neither agree nor disagree, 4 - agree, 5 - agree very strongly)
Future action	775	3.72	0.84	1	5	To what extent do you agree with the following statement? In the future, you will take action to promote better management of revenues generated by oil and gas production in your district (1 - disagree very strongly, 2 - disagree, 3 - neither agree nor disagree, 4 - agree, 5 - agree very strongly)
Donation: yes or no	807	0.85	0.36	0	1	Dummy: 1 if respondent has donated any amount
Donation amount in Rupiah	803	19117.06	17778.25	0	70000	Donated amount received (in Indonesian Rupiah)
Postcard received: yes or no	807	0.13	0.33	0	1	Dummy: 1 if postcast has been received
Control variables						
Age	807	42.82	13.20	18	80	How old are you?
Gender (Female = 1)	807	0.50	0.50	0	1	Dummy: 1 if respondent is female
Household head	807	0.49	0.50	0	1	Dummy: 1 if the respondent is the household head
Urban	807	0.10	0.30	0	1	Dummy: 1 if located in an urban area (Kelurahan only)
Education primary	807	0.25	0.43	0	1	Dummy: 1 if the highest level of education is primary school
Education lower secondary	807	0.26	0.44	0	1	Dummy: 1 if the highest level of education is middle school / lower secondary
Education upper secondary or more	807	0.43	0.50	0	1	Dummy: 1 if the highest level of education is high school / upper secondary or more
Community leader	807	0.27	0.45	0	1	Dummy: 1 if the respondent holds any community leadership role
Mining	805	0.08	0.27	0	1	Dummy: 1 if the respondent or a household member is involved in mining

Occupation farming	807	0.31	0.46	0	1	Dummy: 1 if the respondent works in farming, fishing, forestry or small-scale mining
Occupation wage labour	807	0.12	0.33	0	1	Dummy: 1 if the respondent has a wage labour position
Occupation self-employment	807	0.24	0.43	0	1	Dummy: 1 if the respondent is self-employed
Mobile assets index	807	4.59	0.99	1	6	Sum of six dummy variables (1 if owned): smartphone, bicycle, tv, moped, motor vehicle, fridge
Property index	806	1.81	0.59	0	3	Sum of three dummy variables (1 if owned): land, house, large dwelling
Mechanism variables						
Satisfaction after treatment	757	3.53	0.84	1	5	To what extent do you agree with the following statement? Our governments at different levels are doing a good job in managing the oil and gas sector (1 - disagree very strongly, 2 - disagree, 3 - neither agree nor disagree, 4 - agree, 5 - agree very strongly)
Chnge in satisfaction	672	0.01	0.87	-3	3	Change in satisfaction before to after treatment
Importance of issue after treatment	776	3.77	0.85	1	5	To what extent do you agree with the following statement? It is important for you to know how revenues from oil and gas production are managed in your district (1 - disagree very strongly, 2 - disagree, 3 - neither agree nor disagree, 4 - agree, 5 - agree very strongly)
Change in importance	711	0.31	1.05	-3	3	Change in importance before to after treatment
Revenues	608	4.07	1.09	1	5	Think of the revenues that may come to your district from oil and gas production. After seeing the video, do you believe that your district receives: 1 A lot less revenues than you had previously thought, 2 Less revenues than you had previously thought, 3 About the amount you had previously thought, 4 More revenues than you had previously thought, 5 A lot more revenues than you had previously thought
Action worthwhile	761	3.96	0.63	2	5	To what extent do you agree with the following statement? It is worth your time and effort to demand better management of revenues coming from oil and gas production (1 - disagree very strongly, 2 - disagree, 3 - neither agree nor disagree, 4 - agree, 5 - agree very strongly)
New info	791	3.94	0.75	2	5	To what extent do you agree with the following statement? The video you saw provided you with information that was NEW for you (1 - disagree very strongly, 2 - disagree, 3 - neither agree nor disagree, 4 - agree, 5 - agree very strongly)
Useful info	796	4.12	0.55	1	5	To what extent do you agree with the following statement? The video you saw provided you with information that was USEFUL for you (1 - disagree very strongly, 2 - disagree, 3 - neither agree nor disagree, 4 - agree, 5 - agree very strongly)
Take up	807	0.08	0.27	0	1	Dummy: 1 if question "According to your knowledge, how many districts in your province receive revenues from oil or gas production?" correctly answered

Leader behaviour 1	743	3.33	1.02	1	5	To what extent do you agree with the following statement? Most of the time, leaders in your district do not consider what would be best for you and your fellow citizens when they make decisions that concern you (1 - disagree very strongly, 2 - disagree, 3 - neither agree nor disagree, 4 - agree, 5 - agree very strongly)
Leader behaviour 2	795	4.34	0.65	1	5	To what extent do you agree with the following statement? In Indonesia, corruption is still a problem (1 - disagree very strongly, 2 - disagree, 3 - neither agree nor disagree, 4 - agree, 5 - agree very strongly)
Change in perception of corruption	784	0.02	0.64	-3	4	Change in perception of corruption before to after treatment
Leader behaviour 3	791	4.04	0.81	1	5	To what extent do you agree with the following statement? If you find out that leaders in your district have managed revenues from oil and gas production badly, it makes you feel angry and upset (1 - disagree very strongly, 2 - disagree, 3 - neither agree nor disagree, 4 - agree, 5 - agree very strongly)
Responsibility	761	3.58	0.88	1	5	To what extent do you agree with the following statement? It is the responsibility of you and people like you to improve the way revenues from oil and gas production are managed in your district (1 - disagree very strongly, 2 - disagree, 3 - neither agree nor disagree, 4 - agree, 5 - agree very strongly)
Common support	766	3.80	0.79	1	5	To what extent do you agree with the following statement? You are confident that if you asked for better use of revenues from oil and gas production, others would support you (1 - disagree very strongly, 2 - disagree, 3 - neither agree nor disagree, 4 - agree, 5 - agree very strongly)
Feasibility	747	3.48	0.93	1	5	To what extent do you agree with the following statement? There are actions that you could take to promote better use of revenues from oil and gas production in your district (1 - disagree very strongly, 2 - disagree, 3 - neither agree nor disagree, 4 - agree, 5 - agree very strongly)
No use	754	3.44	0.91	1	5	To what extent do you agree with the following statement? Whatever you do, it will not make a difference to how the extractive sector revenues are managed in your district (1 - disagree very strongly, 2 - disagree, 3 - neither agree nor disagree, 4 - agree, 5 - agree very strongly)
Mismanagement	724	3.70	0.90	1	5	To what extent do you agree with the following statement? Mismanagement of revenues from oil and gas production is a big problem in your district (1 - disagree very strongly, 2 - disagree, 3 - neither agree nor disagree, 4 - agree, 5 - agree very strongly)
Heterogeneous effects variables						*For the HE analysis, all disagree-agree (1-5) and distrust-trust (1-5) questions were dummy coded (agree/strongly agree = 1; some trust/great deal of trust = 1)*
Risk	751	5.48	3.02	0	10	In general, how willing or unwilling you are to take risks. (0 completely unwilling - 10 very willing)

Mining as a challenge	807	0.05	0.22	0	1	Dummy: 1 if mining is seen as a challenge in the district
Accountabiltiy	662	1.50	0.50	1	2	Imagine two people doing the same job in a factory. One day one of the people damages the machine they are working at. If you were the factory manager and you had to give a fine to the worker, which of the following two options would you choose? (1 You give a fine of 150'000 Rupiah to the worker who broke the machine, and no fine to the other worker. In total they are fined 150'000 Rupiah. 2 You fine both workers 15'000 Rupiah, both the person who broke the machine and the other worker. In total they are fined 30'000 Rupiah.)
Trust	801	3.40	0.91	1	5	To what extent do you agree with the following statement? You see yourself as someone who generally trusts other people (1 never, 2 rarely, 3 sometimes, 4 often, 5 very often)
Trust in local government	799	3.66	0.98	1	5	How much do you trust the village/ward government? (1 great deal of distrust, 2 some distrust, 3 neither trust nor distrust, 4 some trust, 5 great deal of trust)
Trust in district government	795	3.49	0.92	1	5	How much do you trust the district government? (1 great deal of distrust, 2 some distrust, 3 neither trust nor distrust, 4 some trust, 5 great deal of trust)
Trust in national government	793	3.33	0.99	1	5	How much do you trust the national government? (1 great deal of distrust, 2 some distrust, 3 neither trust nor distrust, 4 some trust, 5 great deal of trust)
Responsiveness	785	3.93	0.77	1	5	To what extent do you agree with the following statement? When communities ask accountability from their leaders things change (1 - disagree very strongly, 2 - disagree, 3 - neither agree nor disagree, 4 - agree, 5 - agree very strongly)
Satisfaction poverty	800	3.66	0.91	1	5	To what extent do you agree with the following statement? Our governments at different levels are doing a good job in improving the living standards of the poor (1 - disagree very strongly, 2 - disagree, 3 - neither agree nor disagree, 4 - agree, 5 - agree very strongly)
Voted president	805	0.92	0.27	0	1	Dummy: 1 if respondent voted in last presidential election
Voted district	803	0.89	0.31	0	1	Dummy: 1 if respondent voted in last district election
Voted village/ward	742	0.90	0.30	0	1	Dummy: 1 if respondent voted in last village election
Interest in politics	802	2.07	1.15	1	5	How often do you discuss political matters and public affairs with friends, family or colleagues? (1 never, 2 rarely, 3 sometimes, 4 often, 5 very often)
Fear of reprisals	772	3.12	1.01	1	5	To what extent do you agree with the following statement? You would be afraid of potential negative consequences if you tried to change the way how various things are handled in your district (1 - disagree very strongly, 2 - disagree, 3 - neither agree nor disagree, 4 - agree, 5 - agree very strongly)

Aspiration 1	805	3.62	0.96	1	5	To what extent do you agree with the following statement? You are satisfied with your and your household's current economic situation (1 - disagree very strongly, 2 - disagree, 3 - neither agree nor disagree, 4 - agree, 5 - agree very strongly)
Aspiration 2	805	4.41	0.57	2	5	To what extent do you agree with the following statement? You are willing to work hard to improve the economic situation of yourself and your household (1 - disagree very strongly, 2 - disagree, 3 - neither agree nor disagree, 4 - agree, 5 - agree very strongly)
Altruism 2	806	4.00	0.65	2	5	To what extent do you agree with the following statement? You are willing to undergo personal cost, in time or money, to help someone from your local community (1 - disagree very strongly, 2 - disagree, 3 - neither agree nor disagree, 4 - agree, 5 - agree very strongly)
Altruism 3	804	3.19	0.97	1	5	To what extent do you agree with the following statement? You are willing to undergo personal cost, in time or money, to help a stranger (1 - disagree very strongly, 2 - disagree, 3 - neither agree nor disagree, 4 - agree, 5 - agree very strongly)
Locus of control	793	3.22	0.96	1	5	To what extent do you agree with the following statement? You often have little control over the things that happen in your life (1 - disagree very strongly, 2 - disagree, 3 - neither agree nor disagree, 4 - agree, 5 - agree very strongly)
Positive impact of extractive industry	739	3.50	0.92	1	5	To what extent do you agree with the following statement? Overall, oil and gas production have a positive impact on local communities in Indonesia (1 - disagree very strongly, 2 - disagree, 3 - neither agree nor disagree, 4 - agree, 5 - agree very strongly)
Corruption 1	746	3.16	0.96	1	5	To what extent do you agree with the following statement? I believe that district politicians and officials in Indonesia spent state revenues in the best possible way (1 - disagree very strongly, 2 - disagree, 3 - neither agree nor disagree, 4 - agree, 5 - agree very strongly)
Corruption 2	755	2.38	0.97	1	5	To what extent do you agree with the following statement? I believe that district politicians and officials have a right, in addition to their salary, to obtain a part of public revenues for their personal use as compensation for their service (1 - disagree very strongly, 2 - disagree, 3 - neither agree nor disagree, 4 - agree, 5 - agree very strongly)
Corruption 3	791	4.31	0.75	1	5	To what extent do you agree with the following statement? In Indonesia, corruption is still a problem (1 - disagree very strongly, 2 - disagree, 3 - neither agree nor disagree, 4 - agree, 5 - agree very strongly)

Appendix Table 2. Balance tests across control (C) and treatment groups (T1, T2, T3) groups

		Means				p-values						
		Control	**T1**	**T2**	**T3**	**C vs. T1**	**C vs. T2**	**C vs. T3**	**T1 vs. T2**	**T1 vs. T3**	**T2 vs. T3**	**All**
Age	mean	42.566	42.251	42.808	43.658	0.811	0.85	0.425	0.661	0.299	0.52	0.761
	se	0.941	0.921	0.872	0.992	.	.	.	.	.	.	.
Gender (Female = 1)	mean	0.505	0.482	0.509	0.495	0.653	0.931	0.841	0.585	0.805	0.771	0.951
	se	0.036	0.036	0.034	0.036	.	.	.	.	.	.	.
Household head	mean	0.465	0.467	0.514	0.51	0.957	0.318	0.367	0.344	0.395	0.939	0.631
	se	0.036	0.035	0.034	0.036	.	.	.	.	.	.	.
Urban dummy	mean	0.116	0.121	0.075	0.102	0.891	0.155	0.654	0.119	0.559	0.334	0.354
	se	0.023	0.023	0.018	0.022	.	.	.	.	.	.	.
Education primary	mean	0.242	0.241	0.266	0.26	0.977	0.578	0.685	0.558	0.664	0.888	0.915
	se	0.031	0.03	0.03	0.031	.	.	.	.	.	.	.
Education lower secondary	mean	0.298	0.206	0.276	0.25	0.035	0.619	0.287	0.098	0.299	0.556	0.164
	se	0.033	0.029	0.031	0.031	.	.	.	.	.	.	.
Education upper sec. or more	mean	0.374	0.492	0.407	0.439	**0.017**	0.496	0.19	**0.08**	0.286	0.511	0.1
	se	0.034	0.036	0.034	0.036	.	.	.	.	.	.	.
Community leader	mean	0.263	0.251	0.322	0.255	0.796	0.183	0.865	0.11	0.93	0.133	0.346
	se	0.031	0.031	0.032	0.031	.	.	.	.	.	.	.
Mining	mean	0.086	0.085	0.07	0.087	0.976	0.552	0.988	0.572	0.963	0.542	0.905
	se	0.02	0.02	0.018	0.02	.	.	.	.	.	.	.
Occupation farming	mean	0.293	0.302	0.346	0.316	0.852	0.251	0.615	0.337	0.751	0.527	0.677
	se	0.032	0.033	0.033	0.033	.	.	.	.	.	.	.
Occupation wage labour	mean	0.121	0.136	0.112	0.112	0.668	0.775	0.782	0.47	0.481	0.998	0.881
	se	0.023	0.024	0.022	0.023	.	.	.	.	.	.	.
Occupation self-employment	mean	0.258	0.271	0.224	0.219	0.756	0.432	0.375	0.27	0.231	0.905	0.557
	se	0.031	0.032	0.029	0.03	.	.	.	.	.	.	.
Mobile assets index	mean	4.571	4.538	4.687	4.541	0.754	0.205	0.764	0.132	0.977	0.117	0.309
	se	0.07	0.079	0.06	0.071	.	.	.	.	.	.	.
Property index		1.737	1.764	1.897	1.821	0.661	**0.006**	0.149	**0.027**	0.341	0.18	0.032
		0.041	0.044	0.041	0.04	.	.	.	.	.	.	.
N	_	**198**	**199**	**214**	**196**							

Notes: Table shows means and standard errors of main variables by treatment arm in first four columns. Final columns show p-values for difference tests from pairwise t-tests and from F-test for all treatment arms, with p-values below 0.10 highlighted in bold.

Appendix Table 3. Heterogeneous effects analysis. For this analysis, all disagree-agree (1-5) and distrust-trust (1-5) questions were dummy coded (agree/strongly agree = 1; some trust/great deal of trust = 1). All heterogeneous effects were described in the pre-analysis plan.

	Right to benefit		Right to influence		Request information		Future action		Donation: yes or no		Donation amount		Postcard	
VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Mining seen as a challenge														
Any treatment	0.052		0.108*		-0.012		-0.042		-0.004		-54.868		-0.021	
	-0.064		-0.059		-0.079		-0.06		-0.029		-1,421.28		-0.028	
T1 Info		0.089		0.128*		0.029		0.022		0.063*		1,355.738		-0.033
		-0.073		-0.068		-0.097		-0.082		-0.034		-1,798.88		-0.035
T2 Mismanagement		-0.017		0.071		-0.060		-0.115		-0.032		-496.824		-0.010
		-0.087		-0.071		-0.084		-0.078		-0.034		-1,612.38		-0.035
T3 Role model		0.093		0.126		-0.001		-0.026		-0.041		-1,020.032		-0.020
		-0.067		-0.077		-0.106		-0.08		-0.038		-1,830.34		-0.032
Mining challenge	-0.139	-0.150	-0.591*	-0.593**	-0.151	-0.159	-0.062	-0.072	0.112**	0.111**	-9,647.994***	-9,524.693***	0.048	0.047
	-0.38	-0.381	-0.299	-0.298	-0.251	-0.253	-0.246	-0.247	-0.044	-0.045	-3,118.12	-3,086.88	-0.131	-0.131
Interaction with any T	0.084		0.759**		0.253		0.108		-0.050		13,261.825***		0.082	
	-0.408		-0.326		-0.283		-0.281		-0.077		-4,336.09		-0.143	
Interaction with T1 Info		-0.341		0.626*		-0.182		-0.324		-0.151		18,539.653**		-0.008
		-0.543		-0.345		-0.305		-0.4		-0.104		-7,127.93		-0.162
Interaction with T2 Mismanagement		0.225		0.548*		0.039		0.199		-0.062		10,852.616**		0.102
		-0.398		-0.323		-0.342		-0.268		-0.114		-5,401.80		-0.186
Interaction with T3 Role model		0.339		1.061***		0.823***		0.415		0.058		10,829.439*		0.144
		-0.384		-0.369		-0.285		-0.287		-0.058		-5,948.02		-0.167
Observations	783	783	776	776	765	765	773	773	804	804	800	800	804	804
Positive impact of oil and gas production and mining on local communities														
Any treatment	0.094		0.253**		0.040		-0.038		-0.019		3,380.626		-0.030	
	(0.118)		(0.113)		(0.118)		(0.118)		(0.049)		(2,133.260)		(0.043)	
T1 Info		0.055		0.189		-0.075		-0.096		0.067		4,181.714*		-0.075
		(0.137)		(0.127)		(0.158)		(0.147)		(0.057)		(2,515.113)		(0.050)
T2 Mismanagement		0.089		0.263*		0.022		-0.064		-0.045		4,484.534*		-0.005
		(0.148)		(0.134)		(0.132)		(0.134)		(0.053)		(2,661.600)		(0.056)
T3 Role model		0.131		0.297**		0.167		0.047		-0.066		1,440.400		-0.016
		(0.130)		(0.133)		(0.153)		(0.150)		(0.062)		(2,569.298)		(0.051)
Positive impact of extractive industries	0.116	0.115	0.249**	0.248**	0.196	0.197	0.137	0.137	0.037	0.036	4,444.662*	4,429.796*	-0.024	-0.024
	(0.116)	(0.117)	(0.115)	(0.116)	(0.139)	(0.139)	(0.119)	(0.119)	(0.052)	(0.052)	(2,330.307)	(2,338.171)	(0.049)	(0.049)
Interaction with any T	-0.057		-0.170		-0.054		0.014		0.026		-4,515.873*		0.023	
	(0.133)		(0.122)		(0.148)		(0.144)		(0.057)		(2,702.092)		(0.054)	
Interaction with T1 Info		0.020		-0.052		0.145		0.161		-0.017		-3,093.326		0.069
		(0.158)		(0.155)		(0.185)		(0.180)		(0.064)		(2,973.930)		(0.060)
Interaction with T2 Mismanagement		-0.157		-0.264*		-0.117		-0.051		0.025		-7,410.963**		0.000
		(0.165)		(0.157)		(0.180)		(0.172)		(0.068)		(3,679.378)		(0.066)
Interaction with T3 Role model		-0.023		-0.179		-0.182		-0.066		0.056		-3,027.712		0.010
		(0.154)		(0.144)		(0.183)		(0.182)		(0.077)		(3,243.428)		(0.069)
Observations	783	783	776	776	765	765	773	773	804	804	800	800	804	804
Trust in national leaders														
Any treatment	0.117		0.134*		-0.051		-0.022		-0.007		1,822.950		0.018	
	(0.102)		(0.074)		(0.097)		(0.078)		(0.037)		(1,910.332)		(0.037)	
T1 Info		0.145		0.109		-0.041		-0.031		0.084**		5,086.147**		-0.001
		(0.124)		(0.088)		(0.117)		(0.102)		(0.040)		(2,352.259)		(0.045)
T2 Mismanagement		0.030		0.110		-0.163		-0.079		-0.038		52.244		0.033
		(0.128)		(0.082)		(0.114)		(0.114)		(0.044)		(2,120.817)		(0.045)
T3 Role model		0.173*		0.182*		0.040		0.044		-0.062		288.415		0.023
		(0.098)		(0.096)		(0.125)		(0.099)		(0.047)		(2,372.442)		(0.039)
Trust in national leaders	0.227*	0.225*	0.011	0.011	-0.063	-0.069	0.124	0.122	0.007	0.007	2,966.960	2,879.897	0.093*	0.094*
	(0.126)	(0.125)	(0.103)	(0.103)	(0.127)	(0.129)	(0.102)	(0.104)	(0.049)	(0.049)	(2,359.010)	(2,360.126)	(0.053)	(0.053)
Interaction with any T	-0.115		0.025		0.119		-0.019		0.006		-2,663.627		-0.067	
	(0.136)		(0.124)		(0.132)		(0.117)		(0.054)		(2,840.101)		(0.065)	
Interaction with T1 Info		-0.156		0.124		0.134		0.108		-0.067		-6,672.249**		-0.064
		(0.164)		(0.156)		(0.168)		(0.154)		(0.066)		(3,164.979)		(0.070)
Interaction with T2 Mismanagement		-0.066		-0.029		0.232		-0.054		0.012		105.806		-0.076
		(0.152)		(0.135)		(0.173)		(0.166)		(0.068)		(3,698.511)		(0.076)
Interaction with T3 Role model		-0.104		0.002		0.005		-0.090		0.076		-1,514.444		-0.062
		(0.154)		(0.160)		(0.158)		(0.152)		(0.065)		(3,666.436)		(0.076)
Observations	783	783	776	776	765	765	773	773	804	804	800	800	804	804
District leaders have a right to obtain a share of public revenues as compensation for their service (Corruption 2)														
Any treatment	0.051		0.172***		0.055		-0.043		-0.032		175.497		0.019	
	(0.058)		(0.060)		(0.075)		(0.059)		(0.031)		(1,399.966)		(0.031)	
T1 Info		0.058		0.186**		0.076		0.009		0.023		2,291.616		0.007
		(0.077)		(0.073)		(0.097)		(0.084)		(0.037)		(1,899.263)		(0.041)
T2 Mismanagement		-0.022		0.106		-0.013		-0.101		-0.051		-318.287		0.019
		(0.080)		(0.073)		(0.086)		(0.084)		(0.038)		(1,707.258)		(0.037)
T3 Role model		0.128*		0.230***		0.112		-0.023		-0.063*		-1,268.627		0.030
		(0.066)		(0.079)		(0.104)		(0.076)		(0.036)		(1,743.656)		(0.035)
Corruption 2	-0.123	-0.125	0.215	0.213	0.449**	0.447**	0.162	0.162	-0.207**	-0.206**	-3,715.825	-3,689.227	0.172*	0.171*
	(0.205)	(0.206)	(0.160)	(0.161)	(0.204)	(0.204)	(0.153)	(0.154)	(0.092)	(0.092)	(3,365.677)	(3,376.456)	(0.095)	(0.095)
Interaction with any T	0.038		-0.198		-0.353		0.010		0.187*		2,713.013		-0.221**	
	(0.211)		(0.170)		(0.227)		(0.185)		(0.112)		(3,837.815)		(0.108)	
Interaction with T1 Info		0.085		-0.207		-0.390		-0.077		0.219**		864.933		-0.238*
		(0.225)		(0.191)		(0.263)		(0.205)		(0.109)		(4,118.343)		(0.121)
Interaction with T2 Mismanagement		0.081		-0.063		-0.261		-0.010		0.108		2,022.739		-0.150
		(0.259)		(0.200)		(0.251)		(0.258)		(0.144)		(4,963.599)		(0.117)
Interaction with T3 Role model		-0.078		-0.321*		-0.409*		0.107		0.190		4,778.737		-0.257**
		(0.223)		(0.184)		(0.240)		(0.207)		(0.134)		(4,902.286)		(0.114)
Observations	783	783	776	776	765	765	773	773	804	804	800	800	804	804
District leaders spend public revenues in best possible way (Corruption 1)														
Any treatment	0.049		0.151*		-0.015		-0.085		-0.052		-487.962		0.009	
	(0.102)		(0.086)		(0.095)		(0.086)		(0.037)		(1,862.264)		(0.033)	
T1 Info		0.102		0.101		0.012		-0.035		0.015		1,427.770		-0.016
		(0.117)		(0.099)		(0.111)		(0.110)		(0.041)		(2,249.691)		(0.042)
T2 Mismanagement		-0.054		0.114		-0.108		-0.200*		-0.116**		-1,742.015		0.016
		(0.121)		(0.095)		(0.117)		(0.115)		(0.045)		(2,333.707)		(0.043)
T3 Role model		0.098		0.254**		0.055		-0.016		-0.061		-1,414.915		0.032
		(0.113)		(0.106)		(0.131)		(0.107)		(0.047)		(2,176.218)		(0.038)
Corruption 1	0.003	-0.001	0.019	0.020	0.113	0.109	0.110	0.106	-0.083	-0.085	-1,365.213	-1,430.546	0.059	0.060
	(0.104)	(0.104)	(0.097)	(0.097)	(0.128)	(0.129)	(0.117)	(0.117)	(0.055)	(0.055)	(2,107.528)	(2,101.190)	(0.050)	(0.050)
Interaction with any T	0.015		-0.015		0.047		0.131		0.105*		2,406.432		-0.053	
	(0.126)		(0.127)		(0.147)		(0.141)		(0.062)		(2,545.774)		(0.054)	
Interaction with T1 Info		-0.093		0.165		0.038		0.123		0.092		1,827.371		-0.033
		(0.144)		(0.142)		(0.179)		(0.167)		(0.065)		(3,101.376)		(0.068)
Interaction with T2 Mismanagement		0.105		-0.036		0.119		0.233		0.184**		3,932.128		-0.041
		(0.139)		(0.134)		(0.184)		(0.194)		(0.079)		(3,662.202)		(0.068)
Interaction with T3 Role model		0.028		-0.161		-0.012		0.042		0.054		1,926.356		-0.093
		(0.157)		(0.168)		(0.187)		(0.168)		(0.078)		(3,014.728)		(0.061)
Observations	783	783	776	776	765	765	773	773	804	804	800	800	804	804

Appendix Table 3 continued.

	Right to benefit		Right to influence		Request information		Future action		Donation: yes or no		Donation amount		Postcard	
VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Satisfaction with current economic situation (Aspiration 1)														
Any treatment	0.096		0.116		-0.061		-0.043		-0.068*		1,302.845		-0.059	
	(0.126)		(0.088)		(0.127)		(0.095)		(0.035)		(2,347.369)		(0.054)	
T1 Info		0.090		0.082		-0.089		-0.024		0.021		3,431.154		-0.073
		(0.137)		(0.123)		(0.142)		(0.116)		(0.044)		(2,923.600)		(0.054)
T2 Mismanagement		0.092		0.086		-0.157		-0.146		-0.056		2,567.019		-0.044
		(0.150)		(0.126)		(0.144)		(0.144)		(0.045)		(3,681.855)		(0.069)
T3 Role model		0.105		0.184		0.069		0.052		-0.160***		-1,844.390		-0.062
		(0.155)		(0.117)		(0.175)		(0.113)		(0.060)		(2,962.686)		(0.069)
Aspiration 1	-0.020	-0.021	-0.061	-0.060	-0.100	-0.101	-0.023	-0.025	-0.111**	-0.111**	1,466.569	1,469.360	-0.033	-0.033
	(0.120)	(0.121)	(0.106)	(0.106)	(0.136)	(0.136)	(0.102)	(0.102)	(0.043)	(0.043)	(2,361.603)	(2,379.172)	(0.056)	(0.056)
Interaction with any T	-0.060		0.039		0.090		0.009		0.092*		-1,084.555		0.064	
	(0.139)		(0.116)		(0.163)		(0.128)		(0.053)		(2,992.706)		(0.057)	
Interaction with T1 Info		-0.031		0.109		0.155		0.041		0.052		-1,728.548		0.058
		(0.145)		(0.150)		(0.203)		(0.160)		(0.066)		(3,505.516)		(0.057)
Interaction with T2 Mismanagement		-0.145		0.016		0.141		0.057		0.033		-3,657.708		0.059
		(0.154)		(0.149)		(0.188)		(0.191)		(0.070)		(4,547.231)		(0.074)
Interaction with T3 Role model		0.009		-0.005		-0.029		-0.076		0.184**		1,992.671		0.076
		(0.196)		(0.161)		(0.202)		(0.156)		(0.072)		(4,231.408)		(0.083)
Observations	783	783	776	776	765	765	773	773	804	804	800	800	804	804
Willingness to work hard to improve own and household's economic situation (Aspiration 2)														
Any treatment	-0.054		-0.581**		-0.493		-0.790*		0.187		10,593.331		-0.347**	
	(0.261)		(0.252)		(0.463)		(0.433)		(0.171)		(6,542.811)		(0.175)	
T1 Info		-0.589**		-0.919***		-0.790		-1.004*		0.352**		17,363.444*		-0.353**
		(0.259)		(0.310)		(0.559)		(0.526)		(0.158)		(9,913.376)		(0.178)
T2 Mismanagement		0.181		-0.456		-0.356		-0.806		0.068		8,678.270		-0.325*
		(0.302)		(0.334)		(0.593)		(0.569)		(0.201)		(9,669.116)		(0.175)
T3 Role model		0.120		-0.273		-0.429		-0.286		0.190		1,339.948		-0.402**
		(0.388)		(0.643)		(0.437)		(0.389)		(0.203)		(5,847.700)		(0.182)
Aspiration 2	-0.377*	-0.393*	-0.323**	-0.336**	-0.188	-0.200	-0.402	-0.418	0.079	0.079	5,575.101	5,716.454	-0.218	-0.216
	(0.211)	(0.212)	(0.140)	(0.140)	(0.431)	(0.436)	(0.400)	(0.406)	(0.143)	(0.141)	(6,021.575)	(6,171.470)	(0.179)	(0.179)
Interaction with any T	0.112		0.742***		0.507		0.774*		-0.197		-10,307.632		0.341*	
	(0.268)		(0.270)		(0.468)		(0.442)		(0.171)		(6,429.468)		(0.180)	
Interaction with T1 Info		0.672**		1.101***		0.828		1.036*		-0.303*		-15,526.468		0.329*
		(0.262)		(0.313)		(0.555)		(0.523)		(0.158)		(9,471.033)		(0.187)
Interaction with T2 Mismanagement		-0.202		0.567		0.307		0.722		-0.105		-8,914.716		0.331*
		(0.302)		(0.355)		(0.605)		(0.577)		(0.206)		(10,012.510)		(0.179)
Interaction with T3 Role model		-0.002		0.466		0.488		0.297		-0.229		-2,010.005		0.400**
		(0.397)		(0.648)		(0.442)		(0.413)		(0.205)		(5,912.661)		(0.184)
Observations	783	783	776	776	765	765	773	773	804	804	800	800	804	804
Willingness to help someone from one's local community (Altruism 2)														
Any treatment	0.074		0.385*		-0.100		-0.090		-0.060		4,843.738		0.084**	
	(0.216)		(0.194)		(0.223)		(0.198)		(0.065)		(3,928.021)		(0.041)	
T1 Info		0.182		0.382*		0.045		0.037		0.050		7,055.643		0.026
		(0.232)		(0.217)		(0.255)		(0.220)		(0.063)		(4,680.696)		(0.045)
T2 Mismanagement		-0.045		0.348		-0.200		-0.169		-0.113		5,094.664		0.049
		(0.282)		(0.241)		(0.262)		(0.262)		(0.095)		(4,783.280)		(0.077)
T3 Role model		0.080		0.425*		-0.165		-0.164		-0.126		2,019.378		0.186**
		(0.245)		(0.230)		(0.237)		(0.235)		(0.089)		(4,858.133)		(0.072)
Altruism 2	0.203	0.199	0.452**	0.451**	0.054	0.050	0.159	0.156	-0.059	-0.060	2,388.132	2,400.426	0.164***	0.164***
	(0.197)	(0.199)	(0.189)	(0.189)	(0.200)	(0.199)	(0.170)	(0.169)	(0.065)	(0.066)	(3,246.008)	(3,242.993)	(0.035)	(0.035)
Interaction with any T	-0.014		-0.266		0.119		0.068		0.062		-4,948.073		-0.110**	
	(0.208)		(0.198)		(0.223)		(0.215)		(0.075)		(3,958.839)		(0.052)	
Interaction with T1 Info		-0.124		-0.243		-0.025		-0.028		0.006		-5,592.440		-0.064
		(0.229)		(0.224)		(0.264)		(0.243)		(0.077)		(4,725.691)		(0.060)
Interaction with T2 Mismanagement		0.051		-0.278		0.168		0.080		0.091		-5,833.419		-0.058
		(0.280)		(0.253)		(0.280)		(0.286)		(0.108)		(5,321.210)		(0.091)
Interaction with T3 Role model		0.042		-0.273		0.246		0.189		0.104		-2,922.451		-0.225***
		(0.247)		(0.233)		(0.217)		(0.240)		(0.099)		(4,794.069)		(0.079)
Observations	783	783	776	776	765	765	773	773	804	804	800	800	804	804
Willingness to help a stranger (Altruism 3)														
Any treatment	0.020		0.120		-0.045		-0.057		-0.034		3,502.772**		-0.021	
	(0.099)		(0.087)		(0.106)		(0.092)		(0.036)		(1,750.691)		(0.037)	
T1 Info		0.040		0.104		-0.010		-0.061		0.053		5,329.825**		-0.016
		(0.112)		(0.105)		(0.122)		(0.122)		(0.040)		(2,152.470)		(0.045)
T2 Mismanagement		-0.002		0.081		-0.143		-0.093		-0.081		3,489.582		-0.021
		(0.124)		(0.106)		(0.131)		(0.104)		(0.052)		(2,476.904)		(0.046)
T3 Role model		0.020		0.175*		0.028		-0.015		-0.073*		1,574.670		-0.024
		(0.101)		(0.097)		(0.134)		(0.106)		(0.042)		(2,178.372)		(0.044)
Altruism 3	0.021	0.018	0.072	0.071	0.020	0.020	0.065	0.063	-0.027	-0.027	4,651.191**	4,629.419**	0.037	0.037
	(0.101)	(0.102)	(0.111)	(0.112)	(0.131)	(0.131)	(0.104)	(0.104)	(0.053)	(0.053)	(2,278.914)	(2,287.329)	(0.043)	(0.043)
Interaction with any T	0.080		0.062		0.104		0.055		0.061		-5,931.203**		0.017	
	(0.118)		(0.133)		(0.161)		(0.135)		(0.060)		(2,665.227)		(0.050)	
Interaction with T1 Info		0.070		0.129		0.071		0.162		0.004		-6,337.202**		-0.031
		(0.122)		(0.138)		(0.183)		(0.171)		(0.063)		(2,976.412)		(0.068)
Interaction with T2 Mismanagement		-0.012		0.043		0.186		-0.020		0.100		-7,001.680*		0.041
		(0.160)		(0.162)		(0.204)		(0.161)		(0.080)		(3,640.786)		(0.059)
Interaction with T3 Role model		0.206		0.023		0.048		0.041		0.081		-4,069.584		0.037
		(0.146)		(0.147)		(0.169)		(0.140)		(0.073)		(3,551.396)		(0.065)
Observations	783	783	776	776	765	765	773	773	804	804	800	800	804	804
Accountability														
Any treatment	0.126		-0.058		-0.122		-0.087		0.033		-396.675		0.044	
	(0.106)		(0.092)		(0.138)		(0.109)		(0.048)		(2,391.276)		(0.038)	
T1 Info		0.132		-0.061		-0.120		-0.101		0.080		1,501.972		-0.013
		(0.124)		(0.100)		(0.180)		(0.143)		(0.057)		(3,197.218)		(0.042)
T2 Mismanagement		0.081		-0.073		-0.149		-0.129		0.024		113.783		0.052
		(0.126)		(0.117)		(0.153)		(0.123)		(0.050)		(2,620.298)		(0.049)
T3 Role model		0.177		-0.036		-0.090		-0.025		0.004		-2,588.571		0.082
		(0.121)		(0.114)		(0.154)		(0.138)		(0.065)		(2,939.476)		(0.056)
Equal accountability	0.223*	0.223*	-0.059	-0.059	-0.059	-0.059	-0.030	-0.029	0.112**	0.113**	-1,203.963	-1,165.779	0.082	0.081
	(0.128)	(0.128)	(0.109)	(0.108)	(0.148)	(0.148)	(0.123)	(0.123)	(0.054)	(0.054)	(2,590.128)	(2,611.093)	(0.055)	(0.055)
Interaction with any T	-0.127		0.218		0.144		0.115		-0.084		1,114.164		-0.092	
	(0.136)		(0.142)		(0.167)		(0.148)		(0.065)		(3,220.037)		(0.061)	
Interaction with T1 Info		-0.151		0.225*		0.154		0.174		-0.067		942.785		-0.036
		(0.144)		(0.128)		(0.224)		(0.190)		(0.075)		(3,938.528)		(0.061)
Interaction with T2 Mismanagement		-0.130		0.129		0.080		0.043		-0.094		-441.034		-0.092
		(0.177)		(0.189)		(0.195)		(0.183)		(0.081)		(3,890.608)		(0.079)
Interaction with T3 Role model		-0.101		0.313*		0.202		0.126		-0.117		2,239.047		-0.140*
		(0.160)		(0.179)		(0.195)		(0.184)		(0.084)		(4,020.425)		(0.080)
Observations	646	646	641	641	640	640	643	643	660	660	657	657	660	660

Note: Table shows coefficients for OLS regressions with (hamlet-)clustered standard errors in parentheses. All specifications include the full set of covariates and subdistrict dummies.
p-values: *** p<0.01, ** p<0.05, * p<0.1

Online Appendix OA1: Video transcripts (English version)

Part 1: Placebo (length 1 min 25 sec)

Our country, Indonesia, is rich in many different ways.

It is the world's largest island country. It extends over 5000 kilometers from east to west and nearly 1800 kilometers from north to south. It consists of over 17 000 islands.

Half of our country is covered by forest. Our fertile land, fed by abundant rains, provides us with food crops and grazing land for livestock. Our sea, rivers, and lakes are sources of fish, seaweed, pearls, and drinking water. And underneath the surface, we have the minerals, like gold, tin, and copper.

270 million people live in Indonesia. It is the world's fourth-most populous country. Jakarta is our capital city. With its 34 million residents, it is among the largest ones in the world.

Our country is an ethnically and linguistically diverse country. We have around 1,300 distinct ethnic groups and over 700 different languages.

Economic and health conditions in our country have improved significantly in the last 20-30 years. But many challenges still remain, such as child malnutrition, high rate of smoking, and infectious diseases.

Indonesian nature and culture are unique. We have a warm, stable tropical climate, a vast archipelago, and a long stretch of beaches. And we have a rich cultural heritage that reflects Indonesia's history and ethnic diversity. These attract tourists from abroad.

Part 2: Information (length 2 min 5 sec)

Indonesia has vast mineral and petroleum resources. Your district hosts large-scale oil and gas extraction.

The companies that extract oil and gas in your district pay a share of their revenues to our central government in Jakarta. In 2019, the central government received 160 trillion rupiahs from the extractive industries in Indonesia. If you used 100'000 rupiah notes to cover a football field, you could cover 2500 such football fields!

The central government transfers some of these revenues to your district government, all other district governments in your province, and your provincial government. This system is the same for all districts in Indonesia.

For each 1000 rupiah the central government receives as oil revenues from your district, it transfers 62 back to your district, 62 to other district governments in the province and 31 to the provincial government. The central government keeps the rest.

In 2019, your district government received 1.9 trillion rupiahs from oil and gas extraction. This is 1.4 million rupiahs per person living in your district (including the children). With that money, each single person – adult and child – could buy 120 kilograms of rice. With this money, your district could hire 45'000 elementary school teachers for one year. Or it could hire 40'000 nurses.

The revenues your district receives from oil and gas extraction should be managed in such a way that they benefit you and the other people in your district. These benefits belong to us all, including our children and their children. It is what our 1945 National Constitution says.

Part 3.1: Mismanagement (length 2 min)

If Indonesia and your district receive so much in natural resource revenues, why are there so many poor people in your district and in the country?

One reason is that the revenues are not spent well. Often the revenues are not spent on education, health and infrastructure projects that would promote development. In one resource-rich district, natural resource revenues that the villages received for health, education and poverty reduction were spent on other things. Sometimes the monies are distributed to villagers who are not listed as official receivers.

Another reason why natural resource revenues do not help poor people is corruption. Corruption is a huge problem in Indonesia. From 2004 to 2019, for example, 119 regents and vice-regents were arrested for corruption in Indonesia. Corruption steals resource revenues that should promote development.

In one resource-rich district, the regent established a team to manage 72 billion rupiahs that the district had received from gas extraction. In reality, no such team existed. And the money went to the regent and his allies' personal use. In one village, the head of village and the village consultative body rented out village treasury land to people outside the village who changed the land into illegal sand mining. The village leaders captured the rent fee for themselves. The corruption meant a loss of public money of up to 3 billion rupiahs during 2013-2017.

Similar instances of corruption have happened in other villages, too.

When resource revenues are wasted or stolen, the common people are left to face the losses resulting from resource extraction, such as environmental damage and worsened livelihoods.

Part 3.2: Role model (length 1 min 33 sec)

In some districts, the community members have requested the village and district government to spend revenues so that they can improve their livelihoods.

In one village in a resource-rich district, the villagers talked about different ways they could improve their livelihoods, diet and local economy. Several ideas were proposed. One of them was a chicken farm.

The villagers thought that a chicken cooperative could produce eggs that they could sell to the villagers and people from other villages. The chicken farm would also provide jobs. The income from selling the eggs would be used so that it would benefit the whole village.

With the help of a local civil society group, the villagers developed the idea: Where would the farm be located, how large should it be, who would take care of the chickens? How should the money from selling the eggs be used?

The villagers proposed the chicken farm to the village head and government. They argued that the village government should build the chicken farm as it would benefit people living in the village.

The village government decided to build the chicken farm. Now the villagers, together with the village government, manage the chicken cooperative. The village plans to build more chicken farms using income from selling eggs. The villagers are very happy with the chicken farm and feel that it has been a really good thing for their village.

This story shows that people like you can make a big difference in how revenues from natural resource extraction are managed in your village and your district.

Part 4: Obfuscation (length 23 sec)

It is important that you are well informed about your country. We have attempted to make the message of this video as clear to you as we can. We hope we have succeeded in this.

We are interested in knowing how we can improve the video. How do you think this video can be made more informative, clear, and interesting? Thank you for your attention.

Online Appendix OA2: Script for the donation exercise (English version). Enumerator instructions are given in brackets.

The interview is not over yet. We have a few questions left that we would like to ask you. Before we proceed, we would like to reward you with 70,000 Rupiah for taking the time to answer our questions. These are yours to keep. The money comes from the Academy of Finland. [Hand over the envelope with the funds]

Now we would like to invite you to participate in an activity involving the money that we gave you. As part of the study protocol, we have selected an Indonesian non-profit organization called Fitra.

FITRA stands for the Indonesian Forum for Budget Transparency (Forum Indonesia untuk Transparansi Anggaran). It is a non-government organization that focuses on state budget transparency in various sectors, including natural resources (minerals and coal). FITRA does activities such as studying budgets at national and subnational level, disseminating findings in public domains, educating people to be able to do budget monitoring, and formulating a national strategy to eradicate corruption.

We would like to know whether you would be interested in donating any amount of the funds we gave you to Fitra. This donation is anonymous and completely voluntary, and you can decline to make a donation. Donations are collected by PolGov UGM.

This is how the donation will work. With me, I have a see-through folder/envelope containing donation envelopes. [Show the folder/envelope]

This box will only be opened by Nanang Indra Kurniawan at the UGM who will make sure that the donations all reach the organization.

We would now like to ask you whether you would like to donate any Rupiah to Fitra. This donation is entirely voluntary. If you would like to donate, please, only use the money in the envelope.

Here is an envelope with just the number of this survey so you will remain anonymous. [Show the envelope] This is only for us to keep track of the interviews.

Using only the notes we have provided, please put in any amount that you would like in the envelope and seal it. Then, please put the envelope directly into the donation box. Please put the envelope in the box even if you decide not to make a donation. [Hand over envelope marked with the ID number to the individual]

I will turn around so I cannot see what you do.

After you put the envelope in the donation box, you can sign this receipt sheet as proof of your donation. [Show the list] The receipt sheet does not contain the number of your survey and will be kept separately from the information in the survey. Your name and donation cannot be linked to your responses in the survey.

Do you have any questions?

I will now turn around. Please go ahead and make your decision, and let me know when you are finished. [Turn around and only turn back when you are told to do so]

Online Appendix OA3. Script for the postcard exercise (English version). Enumerator instructions are given in brackets.

If people in your district are interested in learning more about natural resource governance and promoting better governance, FITRA can help you. Together with UGM, FITRA can make a report on how resource revenues are spent in your district. They will publish results from the report in local media such as a newspaper or radio and make the report available to all via their webpage.

In order to investigate natural resource governance in your district and write a report, FITRA needs to know that there are enough people in this district who would like them to do this.

Here is a card that you can use to show your interest. [Hand out the card]

After this interview, please take a picture of the front side of this card [point to the front side of the card] and send it to the telephone number given on the card as a WhatsApp message. There are no additional charges for your message. Your phone number will not be saved, and your message will be anonymous. Information on the number of messages received will be stored securely at UGM. [If the respondent asks you to send the card, tell politely that you are not allowed to do so]

You would need to send the card by July 1 in order for it to count.

Do you have any questions?

Online Appendix OA4. Main results, ordered logit and logit estimations

	Right to benefit			Right to influence			Request information			Future action			Donation amount			Postcard		
VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
Any treatment	0.156			0.449**			-0.017			-0.020			0.043			-0.133		
	(0.195)			(0.179)			(0.187)			(0.140)			(0.222)			(0.240)		
T1 Information		0.124	0.103		0.422*	0.474**		-0.010	-0.003		0.048	0.034		0.620*	0.628*		-0.306	-0.339
		(0.264)	(0.276)		(0.221)	(0.220)		(0.230)	(0.229)		(0.202)	(0.214)		(0.323)	(0.345)		(0.326)	(0.335)
T2 Mismanagement		0.017	-0.047		0.348*	0.327		-0.119	-0.102		-0.138	-0.165		-0.133	-0.231		-0.050	-0.000
		(0.234)	(0.255)		(0.201)	(0.206)		(0.187)	(0.190)		(0.185)	(0.192)		(0.259)	(0.274)		(0.280)	(0.281)
T3 Role model		0.331	0.285		0.587**	0.613***		0.089	0.136		0.038	0.023		-0.214	-0.304		-0.068	-0.073
		(0.222)	(0.217)		(0.241)	(0.234)		(0.256)	(0.257)		(0.190)	(0.192)		(0.267)	(0.297)		(0.279)	(0.282)
Age			0.007			-0.022**			-0.022***			-0.015**			-0.018			-0.008
			(0.009)			(0.009)			(0.007)			(0.007)			(0.012)			(0.012)
Gender (Female = 1)			0.290			0.183			-0.141			-0.275			0.162			-0.380
			(0.238)			(0.263)			(0.263)			(0.188)			(0.334)			(0.346)
Household head			0.355			0.718***			0.229			0.496**			-0.461			0.113
			(0.246)			(0.261)			(0.227)			(0.221)			(0.305)			(0.307)
Urban			-0.398			0.482			0.550			0.111			0.161			0.840
			(0.347)			(0.399)			(0.437)			(0.411)			(0.546)			(0.762)
Education primary			0.508			0.056			0.161			0.108			1.008**			-0.195
			(0.332)			(0.339)			(0.325)			(0.314)			(0.478)			(0.695)
Education lower secondary			1.091***			0.190			0.240			0.478			1.134**			-0.072
			(0.344)			(0.358)			(0.354)			(0.302)			(0.565)			(0.722)
Education upper secondary or more			1.213***			0.099			0.348			0.604*			1.194**			0.111
			(0.361)			(0.363)			(0.341)			(0.329)			(0.588)			(0.714)
Community leader			0.273			0.036			0.299*			0.230			0.115			-0.313
			(0.205)			(0.187)			(0.175)			(0.186)			(0.247)			(0.309)
Mining			0.216			-0.435*			-0.069			-0.116			-0.657			-0.671
			(0.257)			(0.261)			(0.268)			(0.274)			(0.478)			(0.555)
Occupation farming			-0.043			-0.370			-0.100			-0.310			0.564			-0.490
			(0.230)			(0.251)			(0.263)			(0.242)			(0.361)			(0.390)
Occupation wage labour			0.298			0.276			0.135			0.231			0.586*			-1.336***
			(0.301)			(0.265)			(0.253)			(0.269)			(0.342)			(0.513)
Occupation self-employment			-0.274			-0.497*			-0.218			-0.502***			-0.054			-0.528*
			(0.264)			(0.257)			(0.215)			(0.187)			(0.314)			(0.278)
Mobile assets index			-0.017			0.153*			0.008			-0.031			0.214*			0.013
			(0.096)			(0.089)			(0.114)			(0.091)			(0.116)			(0.158)
Property index			-0.017			0.187			0.057			0.054			0.131			0.163
			(0.161)			(0.117)			(0.137)			(0.139)			(0.201)			(0.248)
Observations	785	785	783	777	777	776	767	767	765	775	775	773	807	807	804	787	787	784
Log likelihood	-683	-682	-666	-705	-704	-686	-801	-801	-783	-791	-791	-768	-325	-320	-296	-290	-289	-280
Wald tests: p-values																		
T1 vs. T2		0.668	0.562		0.735	0.511		0.613	0.651		0.468	0.451		0.010	0.004		0.373	0.266
T1 vs. T3		0.362	0.406		0.473	0.548		0.663	0.546		0.966	0.961		0.006	0.004		0.475	0.434
T2 vs. T3		0.188	0.171		0.291	0.204		0.315	0.266		0.388	0.379		0.771	0.797		0.948	0.799
Estimation		Ordered logit			Ordered logit			Ordered logit			Ordered logit			Logit			Logit	

Note: Table shows coefficients for ordered logit and logit regressions with (hamlet-)clustered standard errors in parentheses. All specifications include subdistrict dummies.

*** p<0.01, ** p<0.05, * p<0.1