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Transparent for whom? Dissemination of information on Ghana's petroleum and mining revenue management

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Abstract

This article examines how Ghanaians access information about national and local issues in general and, in particular, how and to what extent they receive information about national and local natural resource revenue management. It also studies how the likelihood of having heard about resource revenue governance depends on individual, household, and geographical characteristics. The article uses descriptive and multivariate analysis based on a unique survey of over 3500 participants from 2016. The study finds that less than 10% of respondents knew how natural resource revenues (NRR) are managed locally, even in areas with mining activity or petroleum production; less than one-third had heard about NRR management in Ghana. Common citizens, those in remote rural areas, and those with limited English skills were least likely to have heard about NRR management, compared to elected duty bearers, traditional authorities, and other opinion leaders. Generally, people have few reliable information sources.

Keywords

Developing countries, Ghana, information seeking behavior, information sources, media, mining, natural resource revenues, petroleum, survey, transparency

1. Introduction

In many developing countries, revenues from high-value natural resources such as petroleum, diamonds, and certain types of timber are an integral part of the national economy (Lujala and Rustad 2012). Despite abundant natural resources, however, these countries are often characterized by the ‘resource curse’: slow economic growth, weak political institutions, and even violent conflict (van der Ploeg 2011). On the assumption that the resource curse stems, at least in part, from resource revenue mismanagement, since the 1990s the international community has attempted to improve natural resource governance by promoting transparency (Haufler 2010). Transparency has commonly become a prerequisite for obtaining investment, debt relief, and loans, as well as aid from donors, multinational financing institutions, and extractive industry companies (David-Barrett and Okamura 2016, Sturesson and Zobel 2015, Kasekende, Abuka, and Sarr 2016, Shaxson 2009).

The extractive sector management literature generally views transparency as key to better resource governance: once citizens gain information about the management of valuable natural resources and their revenues, they will use it to form or amend their views, to debate natural resource governance related issues, and, when desirable, as a basis for voicing concerns and requesting improved accountability in resource governance (Gillies and Heuty 2011, Fox 2015, Epremian, Lujala, and Bruch 2016, Lujala and Epremian 2017). Better governance, in turn, should increase the revenues available for public spending on education, health care, infrastructure, and other sectors that promote economic and social development.

It is crucial to have a clear understanding of how national and local information is disseminated, in order to make sure that the transparency process takes place and to select and design information channels that actually reach citizens. This article addresses these issues and makes a unique contribution to the extractive sector transparency literature by providing results from a survey of over 3500 citizens conducted in 2016 in Ghana – a resource-rich, developing

country actively engaged in increasing transparency in its natural resource revenue management. The study examines how Ghanaians access information about national and local issues in general, and how and to what extent they receive information about national and local natural resource revenue management. Further, by using multivariate analysis it assesses which factors increase the likelihood of citizens receiving information about national and local resource revenue governance, respectively.

The overall results suggests that although Ghanaians have very strong feelings of entitlement – over 90% of the survey respondents completely agree with the statement that they have a right to benefit from natural resource revenues and a similar share states the government of Ghana has an obligation to publish information about such revenues – they are faced with poor diffusion of understandable information. In other words, transparency exists, but only nominally, because most people are not actually getting information on natural resource revenue management. Furthermore, the results show that increased information about natural resource revenues is most likely to reach those who are already in a better position in their community, and whose level of education and welfare is higher.

The results indicate the factors that can inhibit information diffusion, and thus provide policy relevant conclusions that can be useful in designing more effective information transmission programs. The results suggest that a possible overarching strategy to reach citizens and local leaders could be to combine the use of mass media (radio and TV) to arouse general interest, with more targeted information channels to provide more detailed and relevant information as well as knowledge of how to act on the provided information.

The article proceeds as follows. Section 2 presents an overview of the transparency policies in Ghana's petroleum and mining revenue governance. Section 3 provides a conceptual framework for factors that may affect the likelihood of an individual being informed about

natural resource revenue management. Section 4 presents the data and methods and Section 5 the results. Section 6 concludes with some potential policy implications.

2. Transparency in Ghana's petroleum and mining revenue governance

Ghana earns substantial revenues from the extractive sector: around 60% of its export revenues come from gold mining and petroleum exploitation (IMF 2017). The government of Ghana has engaged in several transparency processes within the high-value natural resource management, of which the participation in the Extractive Industry Transparency Initiative (EITI) and the establishment of the independent Public Interest and Accountability Committee (PIAC, for petroleum revenues) under the Petroleum Revenue Management Act (PRMA) are the most prominent.

Ghana joined the EITI – which is a worldwide initiative to increase transparency within the extractive industry – in 2003 and was validated as fully compliant in October 2010.¹ Through its annual EITI Report, the Ghana EITI (GHEITI) publishes free information on revenue flows originating from extractive industry companies; production volumes; leaseholders; and disbursements of revenues to sub-national units such as districts and traditional authorities.² GHEITI also organizes workshops for communities affected by extractive companies and for state officials, mining companies, civil society organizations, community leaders, and media. The first GHEITI Annual Report was published in 2008. GHEITI also regularly publishes other reports, documents, and news items on mining and petroleum extraction that are available on its webpages.

¹ For a more detailed account of how the EITI came into existence, how it functions, and what its objectives are, see for example, Rustad, Le Billon, and Lujala (2017), Kasekende, Abuka, and Sarr (2016), Haufler (2010).

² The annual EITI Report is the core EITI product. It contains the data on the country's extractives industries in accordance with the EITI Standard (see <https://eiti.org/document/guidance-note-on-publishing-eiti-data>).

Following the discovery of offshore petroleum reserves in 2007 and the start of production in 2010, the Government of Ghana passed the PRMA in 2011. The Act provides the framework to collect and allocate petroleum revenues, with the aim of responsible, transparent, and accountable revenue management that benefits all citizens, including future generations (PRMA 2011). Among other things, the Act requires the Minister of Finance to make public the records of petroleum receipts, the production volume, and oil and gas prices in the official Ghana Gazette, two national newspapers, and the Ministry's own webpage on a quarterly basis, as well as to submit the information to the Parliament directly (Article 8).

Further, the Act stipulated the establishment of PIAC, which is responsible for ensuring compliance with the Act (Articles 51-57).³ PIAC is mandated to publish semi-annual and annual reports and make them accessible through two daily newspapers and its own webpage, and to present these to parliament as well as to hold meetings for the general public.⁴ PIAC's engagement with citizens is aimed at increasing knowledge and awareness of petroleum revenue management, and monitoring and improving citizen's capability and willingness to hold the government accountable in managing and spending petroleum revenues.

Thus, the information about *national* resource revenue management (NRRM) is publicly available through the Internet and newspapers. Information about petroleum revenues is also directly available to the members of parliament, who should convey the information to the District Assembly (DA) in their local constituency, of which they are also members. In turn, the DA members, including the MPs, are expected to transmit information to the Unit

³ PIAC consists of 13 members exclusively drawn from civil society organizations (such as organized professional bodies, think tanks, pressure groups, and traditional institutions) to ensure competence and public legitimacy and to provide an active public voice.

⁴ Prior to conducting the survey used in this article, PIAC had published 9 reports and held six public meetings. The goal of the meetings is to inform about management of petroleum revenues and to offer a platform for citizenry contributions and input. The six meetings were held at regional capitals and were attended by various institutional and community representatives. Since then, PIAC has held over 60 public meetings in different district capitals.

Committees (UC), which constitute the lowest-level administrative units in the Ghanaian political system; to traditional authorities; and to common citizens in their electoral area.

Local authorities manage revenues that originate from local extraction, and also have a say regarding what projects petroleum revenues are spent on in their region.⁵ There are, however, few formal requirements and channels to make information about the *local* resource revenue management (LRRM) public.⁶

Despite the strong emphasis by the Government of Ghana on making revenue-related information public, little research has so far been conducted on the actual diffusion of information on natural resource revenues. One study that focused on one rural village on Ghana's oil coast, found that the inhabitants there had little access to petroleum revenue-related information, and that no one had heard about GHEITI or PIAC (Ofori and Lujala 2015). The study also indicated that the villagers had limited access to information sources in general. The present article fills this knowledge gap.

3. Characteristics of informed citizens

The quantitative literature on information seeking behavior in developing countries has examined determinants linked to the likelihood of being informed about national and local issues in general, and about specific topics such as health, agriculture, and disaster-related issues (Bernal and Vásquez 2016, Sommerfeldt 2015). Although the factors included in the analyses vary from study to study, depending on the aim of the study and data limitations, most include variables that describe the respondent and their household, and some also include variables for the place where the respondent lives.

⁵ A substantial part of the petroleum revenues is disbursed through the Annual Budget Fund Amount (ABFA) projects that seek to address development needs of specific areas and districts that are identified at the local level. Note that it is not possible to directly request ABFA funding, but only to suggest eligible projects.

⁶ Local authorities and other bodies receive revenue from mining through various mechanisms, such as mineral royalties, concession ground rents, and community development trust funds established by some mining companies.

In this article, we conceptualize the potential factors that may affect the likelihood of being informed along three dimensions: individual, household, and geography. This is useful in order to identify and understand the potential barriers to information diffusion, as these may operate at different levels and thus may require different approaches to be overcome.

Table 1 outlines the different characteristics of each dimension that are likely to be relevant within the resource revenue information context. *Individual characteristics* can be divided into personal, and social and role-related (Wilson 1997). The personal characteristics include factors such as gender (women in general tend to be less informed on various issues than men (Katungi, Svetlana, and Smale 2008, Bernal and Vásquez 2016); ethnicity (minority groups tend to be less informed, (Bernal and Vásquez 2016); and age (information needs may decrease with age, (Wang et al. 2013, Bernal and Vásquez 2016). Further, previous research has shown that education level is a strong predictor of information seeking behavior – less educated people tend to be less informed (Bernal and Vásquez 2016, Wang et al. 2013, Dutta 2009). In Ghana, most information on resource revenue management is available only in written sources and in English; English language skills are thus potentially an important determinant for information access (Ofori and Lujala 2015). Finally, we expect that people who travel are more likely to be exposed to information that is not available in their own area.

When it comes to social and role-related variables, it is likely that respondents with their main occupation in mining have both a motive to seek and an opportunity to get more information about revenue management. Further, previous research has shown that household heads tend to have higher information levels (Bernal and Vásquez 2016). As revenues in Ghana are partially managed by local leaders, who have a more direct link to national level administration through regular meetings with elected representatives in the DA and the national parliament, we would expect local leaders to be more informed when it comes to natural resource revenue management. We also expect that those individuals who are more politically engaged would have higher information levels.

Household characteristics potentially relevant for determining a respondent's information level about natural resource revenue management include household size, since more household members potentially means more sources of information (Bernal and Vásquez 2016). Poor households may have less time to seek information in general, may prioritize other types of information than those related to natural resource revenue management, or have worse access to information sources (Bernal and Vásquez 2016, Wang et al. 2013, Ofori and Lujala 2015). Finally, we expect that respondents from a household in which someone engages in mining are more likely to have information about revenue management.

The final set of variables that can affect the likelihood of being informed about resource revenue management relates to the *geographical environment* of the respondent's place of residence. The existing literature has established a strong divide between urban and rural dwellers: people living in urban areas tend to be better informed and use more varied information sources than those living in rural areas (Bernal and Vásquez 2016, Dutta 2009, Garcia-Cosavalente, Wood, and Obregon 2010). Further, it is possible that relatively remote rural areas are less informed as the news sources may be limited (Ofori and Lujala 2015, Adolwa et al. 2012). Finally, we expect people to be more informed in areas where an extractive company is operating.

4. Data and methods

The data used in this analysis come from a survey conducted in Ghana in June-August 2016.⁷ The purpose of the survey was to study people's level of knowledge of and perceptions and attitudes towards a number of petroleum and mining revenue management related issues, and to study how people inform themselves about such matters. The survey sample consists of 3526

⁷ The survey is part of a field experiment conducted in Ghana from June 2016-September 2017. More information on the field experiment and sampling can be found in the Supplementary Appendix.

adult (18 and over) respondents. The respondents were interviewed face-to-face by enumerators. A combination of blocking and clustering was used in the sampling: first, 120 of Ghana's 216 districts were selected, including all districts close to offshore petroleum production areas and districts with mining operations. Then, five electoral areas were randomly chosen from each district. Local leaders in each electoral area (DA and UC members, traditional authorities, and other opinion leaders such as journalists) were oversampled with respect to the overall population. Two common citizens in each electoral area were randomly selected. Due to limited involvement of women in local and national politics in Ghana, women are underrepresented among the decision makers, but they make up 50% of the common citizens' sample.

Information sources. The first set of questions about information sources asked the respondents to rank the two most important media sources for national and local news, respectively. The answer alternatives included radio, television, Internet (websites), social media (such as Facebook or Twitter), messages received by cell phone, newspaper, billboard or poster, information center, and information van⁸. The respondents could also indicate if they did not use any of these sources or if they used other sources than what was listed.⁹ Further, the respondents were asked to rank the two most important personal sources for national and local news. The answer alternatives included District Assembly (DA) member, Unit Committee (UC) member, chief, another local leader, family member, friend, work colleague, other villager or neighbor, and meetings organized by local leaders, community groups, or other

⁸ An information center is usually a one-room facility in a rural community providing information to the inhabitants. In most cases, the information center is affiliated to FM stations and broadcasts the FM stations' major news bulletins. Information vans are mobile public vehicles equipped with public address system (i.e. with microphones, amplifiers, and loudspeakers) and DVD players and projectors for showing films and documentaries. The vans move from one community to another to provide information (usually of public interest) to the citizens. These vans are generally owned by the Information Services Division (ISD) of the Ministry of Information.

⁹ The exact questions and answer alternatives are included in the Supplementary Appendix, Section 2. In Figures 1, 2, and 3 some of the answer alternatives have been combined to render the figures simpler, but the fully disaggregated data is provided in the Supplementary Appendix.

organizations. Again, the respondents could state if they did not use these as information sources and indicate other sources.

All respondents were asked whether they had in the past year received or heard any information from any source about how revenues from oil, gas, or mining had been handled in Ghana (*national natural resource revenue management, NRRM*). Those who answered positively to this question (in total 1074, or 31%) were then asked which two media and two personal sources were the most important information sources, respectively. The answer alternatives were the same as above. The survey also asked whether the respondent had in the past year received or heard any information about how revenues from oil, gas, or mining had been handled in their own area (*local natural resource revenue management, LRRM*). The 235 respondents (7% of the total) who had received such information were then asked to rank the two most important media and personal sources.¹⁰

Another set of questions regarding information sources mapped respondents' trust in the different information sources: all respondents were asked to indicate the two media and two personal sources they trusted most and least. Finally, the informants were asked about how they would prefer to get information on petroleum and mining revenues and what would be the best channels to contribute to natural resource revenue management.

The data on information sources is summarized and analyzed by using descriptive statistics and graphs.

Determinants of informed citizens. The multivariate analysis on characteristics of citizens who had received information on natural resource revenue management uses two dependent variables: NRRM and LRRM. These are coded as dummies where a positive response takes the value of 1 and negative the value of 0. As the dependent variables are binary, we use probit regression to analyze the determinants of informed citizens. We include sampling weights to

¹⁰ The rates for NRRM and LRRM in mining and oil districts were 33% and 10%, respectively.

correct for the oversampling of elected leaders, males, and higher income households, and include information about the sampling design in our multivariate analysis.¹¹ Standard errors are estimated using Taylor linearized variance estimation and STATA 14.2 was used in all regression analyses. Table 2 shows the summary statistics for the data used in the multivariate analysis.

The independent variables used in the multivariate analysis are grouped into individual, household, and geographical categories (see Table 1). The individual variables include the respondent's age in years, gender, ethnicity (a dummy for those who belong to the Akan majority group), level of education (9-point scale from no schooling to completed tertiary level), and English language skills (3-point scale from not being able to neither read nor write in English to being able to both read and write). Further, we include a dummy for household heads, for those with main occupation in mining, and for those who had recently travelled to Accra. To measure respondents' general political engagement, we use a 6-point scale on how often the respondent discusses political matters and public affairs (from 'never' to 'all the time'). Finally, we include a dummy for common citizens (as opposed to those with a leadership role).

The variables that describe the household include the number of adults in the household, whether a household member is involved in mining (dummy), a self-assessment of a household's living conditions (5-point Likert scale), and whether the household owns a radio (dummy) or TV (dummy). The effect of the physical environment is assessed by including a dummy if an extractive company is located in the area (self-reported), distance to regional capital (in kilometers, calculated based on the geographic coordinates of the interview location), and a dummy for urban areas.

¹¹ The details on the estimation design are included in the Supplementary Appendix, Section 2. Anonymized replication data file and detailed replication instructions will be made available upon publication of the article.

5. Findings

Information sources

Figure 1 shows the main information sources for national and local news in general and for resource revenue related issues. The graphs are shown separately for the common citizens and the different types of leaders. Panel A shows that radio and TV are by far the most important media information sources for what happens in Ghana in general: almost 90% of respondents list radio among the two most important sources, and over 70% mention television. Internet webpages come as the distant third, with a quarter of the DA members listing the Internet as one of the two main information sources. The pattern for media sources for local matters is different (Panel B). Although radio retains its place as the most commonly used information source, local information centers emerge as the next most important information source, followed by cell phones for the politicians (UC and AM members) and traditional authorities, and TV for the common citizens and opinion leaders. In addition, it is noteworthy that the proportion listing no or only one main media source increases considerably.

The information sources for NRRM are radio and TV, although the proportion listing only one source increases (Panel C). Two key results emerge for media sources for LRRM: TV is listed as the second most important source, and the proportion of having no or only one source strongly increases. In fact, almost all DA members now report that they only have one main media source for such information (radio or TV).

Figure 2 shows the main personal information sources for national and local news and for NRRM and LRRM. A striking proportion of the respondents list no or only one source for NRRM, local leaders and family or friends being the main sources for information. Panel A shows that leaders state that DA members are the most important personal information source

for what happens in Ghana, followed by family members and friends. Common citizens report friends and family members as the most used source while local leaders, in particular DA members, come in the second place. For LRRM (Panel B), the common citizens often have only one or no sources of information, though the situation is a bit more varied for the local leaders: the latter no longer rely on friends and family to the same extent as for the national news, but list other local leaders as the most important sources. DA members also report using other villagers as an important source.¹²

People trust radio and TV the most (Figure 3, Panels A and C) and distrust social media, Internet, and the information they get through cell phones. Many list no or only one media source they distrust, however. Trust in local decision makers is high, although it is lowest among the common citizens (Panel B). Only few report local leaders among the most distrusted personal information sources (Panel D). Respondents tend to be more skeptical towards information from family, friends, and other villagers. Again, most respondents report no or only one distrusted personal source.

As there may be differences between genders and young and older people, we examined those groups separately.¹³ To obtain general information, young (under 30-year-olds) respondents were less likely to report radio as one of the two main media information source than the over-30's, although the radio is still the most often listed source. Young people more often use the Internet and social media, and less often report a local leader (any type) as a main information source for both general and revenue-specific information; family and friends are considerably more important sources for the young than for the older. Interestingly, the young more often say that they have no or only one personal source for natural resource information. The young trust the Internet more, but put less trust in social media or the information they get

¹² In general, the DA members' responses closely reflect the results in Fiankor and Akussah (2012, p. 38) who studied DA members' information behavior in Ghana.

¹³ Supplementary Appendix, Section 2, includes tables in which the information sources are reported by gender and age, respectively.

via cell phones. The young also less often list a local leader as a trusted personal information source, and put more trust in the information that comes from friends.

When it comes to gender, there are small differences for the media information sources. Women are less likely to report a DA member or chief as an information source, and are more likely to rely on family and other villagers for information. They are also substantially more likely to report no or only one personal information source for LRRM. Women are less likely to distrust cell phone and social media, and more likely to list family as a trusted information source.

Three key points emerge from the analysis. First, radio in general, and TV for national issues, are the key media to reach people, and also the most trusted.¹⁴ Internet and newspapers are rarely listed as the most important sources, and there is some skepticism with regard to their trustworthiness; few list public meetings as main sources. On the face of it, it seems that the main information channels for PIAC and GHEITI (i.e. Internet, newspapers, and meetings) do not reflect what would be the most effective ways to reach people. However, community meetings are often given as a preferred information source for resource revenue management (see below).

Second, ICT technologies and social media, often promoted as convenient and cheap ways of reaching people, may be problematic, as people do not list them among the most important sources¹⁵, and tend to distrust these sources more than others.

Third, there are few information sources for LRRM beyond radio and television, especially for the common citizens. As people receive local information through information centers, these could potentially be used for information dissemination for LRRM as well. When asked about how they would prefer to get information, 55% of respondents state community

¹⁴ The fact that radio is the preferred information source in developing countries has also been documented in other research (Msoffe and Ngulube 2017).

¹⁵ A similar tendency has been observed in other studies (Msoffe and Ngulube 2017, Elly and Silayo 2013).

information meetings as one of the preferred sources,¹⁶ suggesting that while they have not been a frequent source of information in the past, they could potentially become more important. Further, as DA members are a main information source for other leaders, DA members could be targeted as gatekeepers for information dissemination, for example through MPs (who are part of their constituency's DA). Currently, there is limited potential for information trickle-down to common citizens, as less than a quarter of common citizens report relying on a local leader as an important information source. At the same time, people generally tend to trust local leaders as information sources. Thus, one approach to reach the common citizens could be to sensitize DA members and other local leaders to share more information with the local people during meetings with citizens. However, it is important to keep in mind that reliance on local leaders as sources of information may exclude the young, who would need to be targeted through a different channel.

Informed citizens

Tables 2-3 show the odds ratios for probit regressions, where values larger than 1 indicate an increase in the respondents' likelihood of having heard about resource revenue management, and values less than 1 indicate a decreased likelihood. The odds ratios provide an intuitive interpretation for discrete variables. For example, in Model 4 (Table 3), the odds ratio of 1.141 for English language skills is interpreted as follows: one unit increase in the variable, e.g., going from no reading and writing skills to being able to read in English, increases the chance of having heard about NRRM by about 14%.

Table 3 reports the results for NRRM and Table 4 for LRRM. Due to the large number of factors that potentially can affect the likelihood of having heard about natural resource revenue management, the variables were added to the estimation model in a stepwise fashion. In the

¹⁶ Almost 70% list radio, 35% TV, and 20% information van.

preliminary phase, the variables were first included for each category – individual, household, and geographic – separately.¹⁷ Models 1, 2, and 3 (Tables 2 and 3) include the variables that were (close to) significant in the preliminary estimations in each category, and Model 4 includes all variables simultaneously.

The results show that of the personal characteristics, only English language skills and mobility (i.e., travel to Accra during the previous 12 months) are related to having heard about NRRM. Of the social and role-related aspects, being a common citizen significantly reduces the likelihood of having heard about NRRM, while those who report that they frequently discuss political issues have more often heard about NRRM. There is also indication that those with main occupation in mining are more likely to have heard about NRRM, but the result is not significant at the conventional level. Of the household characteristics, better living conditions and radio ownership positively predict reporting having heard about NRRM. Of the geographical factors, presence of a mining company in the area substantially increases the likelihood of having heard about NRRM, and there is some evidence that the population living in relatively remote areas is less and the urban one more informed.

The above analysis did not find evidence that age, gender, belonging to another ethnic group than Akan, or education level are associated with being informed about NRRM when we control for the other covariates.¹⁸ TV ownership, household size, or having a household member involved in mining were also not linked to being informed.¹⁹

As Table 4 shows, a smaller number of factors are related to LRRM. Of the personal characteristics, older people and common citizens tend to have less often heard about local

¹⁷ These results are reported in Supplementary Appendix.

¹⁸ It should be noted that while women tend to be less informed, it is explained by their lower education level and language skills – males with similar education level and language skills tend to be equally badly informed. Note also that English skills trumps the effect of the education level on being informed, and if education alone is included of the two variables, it is highly significant.

¹⁹ As a robustness check, we added each excluded variable in Model 4 one-by-one. None of these variables were significant and in no model did they affect the other variables in a substantial manner. These results are included in the Supplementary Appendix.

revenue management. English language skills again seem to be related to being informed. Clearly, respondents in households in which a member is involved in mining, or those with an extractive company in the area, are more likely to have heard of LRRM. There is also again some indication that in the relatively remote areas people are less likely to be informed.

Four main points emerge from the analysis. First, people who themselves engage in mining, have a family member who engages in mining, or live in an area with a mining company are more likely to have received national and local natural resource revenue information. Second, common citizens generally are less likely to be informed about these issues. Third, people in the most remote areas have less often heard about resource revenue management. Further, we find evidence for the combined effect of education and language barriers: those who cannot read in English are substantially less likely to be informed about resource revenue management.

The above results stand in stark contrast with the fact that over 90% of respondents completely agree with the statement that they have a right to benefit from the revenues that Ghana receives from petroleum extraction and mining. Similarly, over 90% completely agree with the statement that the government of Ghana has an obligation to publish information about the revenues, while at the same time over 80% report that lack of access to information is the main reason limiting their knowledge of resource revenue management.

Overall, the results suggests that Ghanaians have very strong feelings of entitlement, but are faced with poor diffusion of understandable information. Transparency exists, but only nominally, because most people are not actually getting information on natural resource revenue management. Furthermore, the information is most likely to reach those who are already in a better position in their community, and whose level of education and welfare is higher.

6. Concluding remarks

A challenge for reaching people and informing them about natural resource revenue management – in Ghana and beyond – is that most do not actively seek out this kind of information: transparency needs to go beyond the mere availability of information and involve more active dissemination. This is in contrast to, for example, information-seeking for health and education-related issues that are of more immediate, personal interest. Although Ghanaians do express a strong interest to learn more about resource revenue management, this alone has not translated into a willingness to spend time and effort to educate themselves about the issues; nor has it meant that they have a clear idea of the benefit such information could have for them, or of the type of action they could take.

Thus, the first step in making transparency ‘work’ would be to reach a greater share of the population, for example with a general campaign in the mass media such as radio or TV – the two most-used and generally trusted sources of information. Such a campaign would be aimed at raising awareness of and stimulating interest in the issues. It could also be done more indirectly, when people seek other information, for example at meetings with local leaders or at local information centers.

The next step would be to incentivize individuals to more actively seek information, and to act on that information when they are dissatisfied with resource revenue management. To achieve this, it is important to provide relevant information, in the right amount, and in an appropriate format; to provide examples of how individual actions can be effective; and to give practical ideas and tools for making this information useful. Community based channels and personal communication may be more appropriate, as these have the advantage of providing interaction and immediate feedback. This approach is also supported by other results from the survey: when asked about their views on the most effective ways for citizens to contribute to

natural resource management, the respondents listed contacting DA members and traditional leaders, as well as participating in meetings with local leaders.

A possible overarching strategy to reach citizens and local leaders could thus be to combine the use of mass media (radio and TV) to arouse general interest, with more targeted information channels to provide local information and knowledge of how to act on it.

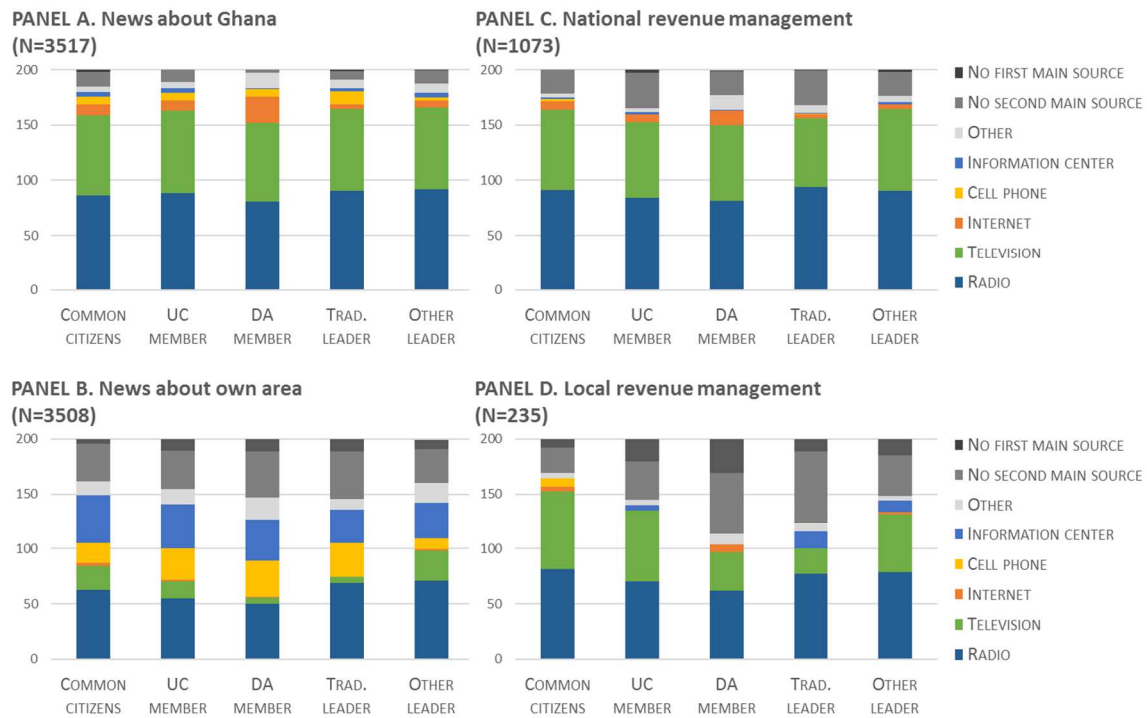
A more fundamental question, of course, is whether all segments of the population should be targeted. Based on the survey results, DA members are crucial information nodes that are most likely to receive and disseminate information, and perhaps also well-placed to gather feedback from their local constituencies. It may not be cost-effective to try to reach the common citizens without the intrinsic motivators of personal experience in mining or nearby extraction areas.

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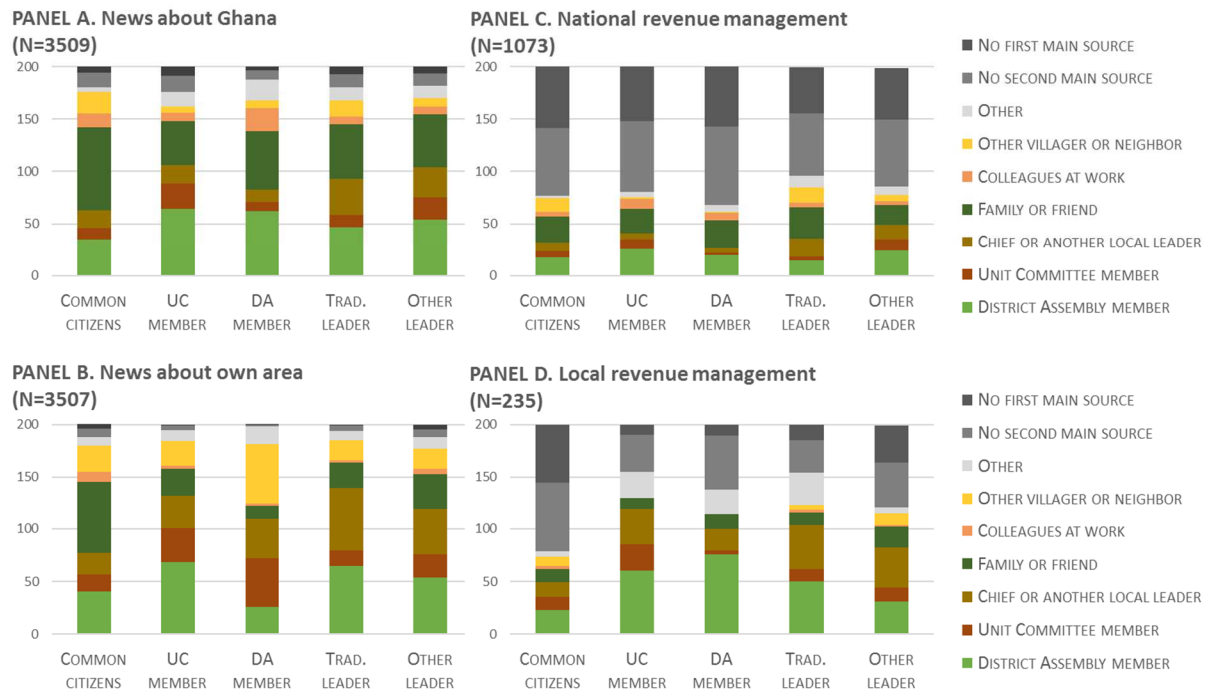
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Figures



Notes: As all respondents could list two main information sources, the percent shares add up to 200%. UC: Unit Committee; DA: District Assembly. Original data with further breakdown can be found in Supplementary Appendix.

Figure 1. Main media information sources for what happens in Ghana (Panel A) and in the respondent's own area (Panel B) in general, and for information about how natural resource revenues are handled in Ghana (NRRM, Panel C) and in the respondent's own area (LRRM, Panel D).

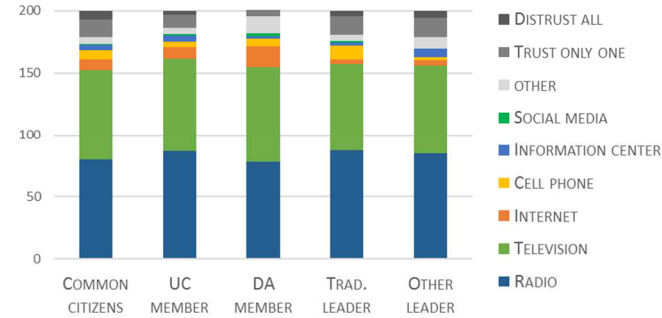


Notes: As all respondents could list two main information sources, the percent shares add up to 200%. UC: Unit Committee; DA: District Assembly. Original data with further breakdown can be found in Supplementary Appendix.

Figure 2. Main personal information sources for what happens in Ghana (Panel A) and in the respondent's own area (Panel B) in general, and for information about how natural resource revenues are handled in Ghana (NRRM, Panel C) and in the respondent's own area (LRRM, Panel D).

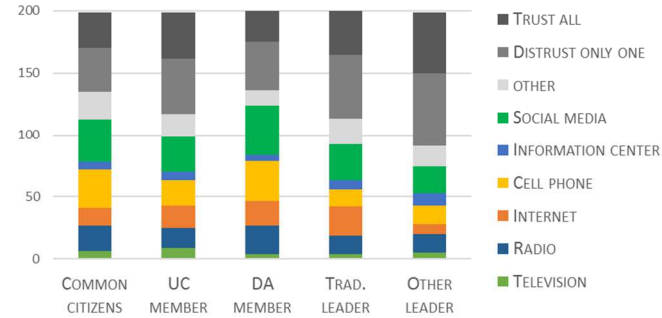
PANEL A. Trusted media

N= 3487



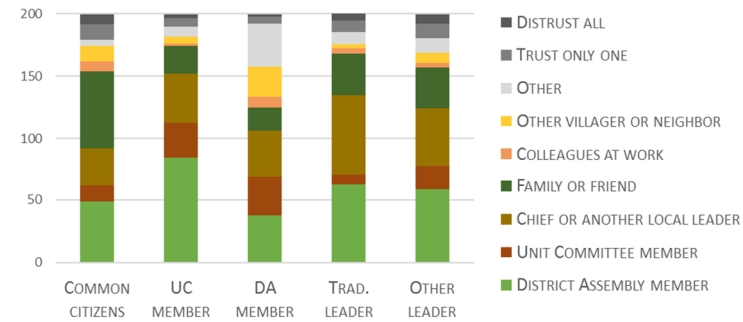
PANEL C. Distrusted media

N=3331



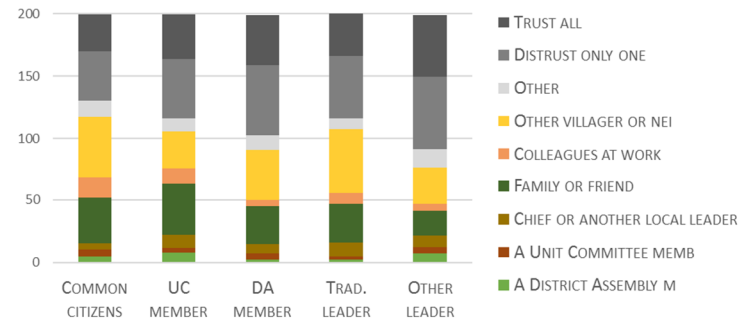
PANEL B. Trusted people

N=3474



PANEL D. Distrusted people

N=3329



Notes: As all respondents could list two main information sources, the percent shares add up to 200%. UC: Unit Committee; DA: District Assembly. Original data with further breakdown can be found in Supplementary Appendix.

Figure 3. Most and least trusted media (Panels A and C) and personal (Panels B and D) information sources in percent.

Tables

Table 1. Determinants of access to natural resource revenue information

Individual	Household	Geographic location
<i>Personal aspects</i>	<ul style="list-style-type: none">• Household size• Living conditions• Access to media• Engagement in mining	<ul style="list-style-type: none">• Remoteness• Urban vs. rural• Presence of an extractive company
<i>Social and role related aspects</i>		
<ul style="list-style-type: none">• Occupation• Position in household• Position in the community• Political engagement		

Table 2. Summary statistics and variable definition

	Variable	Obs	Mean	Min	Max	Definition	
Dependent variables	Natural revenue management	3492	0.31	0	1	Dummy: 1 if respondent had in the past year received or heard any information from any source about how revenues from oil, gas, or mining had been handled in Ghana	
	Local revenue management	3487	0.07	0	1	Dummy: 1 if respondent had in the past year received or heard any information from any source about how revenues from oil, gas, or mining had been handled in own area	
Individual characteristics	Personal	Age	3466	46	18	110	Age in years
		Gender	3518	0.22	0	1	Dummy: 1 if respondent is female
		Ethnic majority	3526	0.58	0	1	Dummy: 1 if respondent is Akan
		Education	3513	4.57	0	8	Scale from 0 to 8. 0: None (13%); 1: Incomplete primary school (4%); 2: Completed primary school (2%); 3: Incomplete junior high school (5%); Complete junior (32%); Incomplete secondary/technical school: (2%); Completed secondary/technical school (18%) Incomplete tertiary (2%); Completed tertiary (22%)
	English skills	3513	1.48	0	2	Scale from 0 to 2. 0: Cannot read or write English; 1: Can read English; 2: Can read and write English	
	Social and role related aspects	Household head	3526	0.71	0	1	Dummy: 1 if respondent is household head
		Occupation mining	3526	0.01	0	1	Dummy: 1 if respondent's main occupation is mining
		Common citizen	3526	0.34	0	1	Dummy: 1 if respondent does not have any leader position
		DA	3526	0.16	0	1	Dummy: 1 if respondent is District Assembly member
		UC	3526	0.17	0	1	Dummy: 1 if respondent is Unit Committee member
Chief		3526	0.11	0	1	Dummy: 1 if respondent is traditional leader	
	Opinion leader	3526	0.22	0	1	Dummy: 1 if respondent is opinion leader (a teacher, religious leader, youth leader etc.)	
	Interest in politics	3495	2.39	0	5	How often the respondent discusses political matters and public affairs with friends, family, or colleagues. 6-point scale: Never, Rarely, Sometimes, Often, Very often, All the time	
	Travel to Accra	3515	0.72	0	1	Dummy: 1 if respondent has travelled to Accra during the past six months	
Household characteristics	HH size	3469	4.91	0	30	Number of adults living permanently in the household	
	HH involved in mining	3507	0.06	0	1	Dummy: 1 if someone in the household currently engages in mining	
	HH living conditions	3505	1.99	0	4	Respondent's self-assessment of households' present living conditions. 5-point Likert scale from very bad to very good	
	HH TV	3517	0.85	0	1	Dummy: 1 if household owns TV	
	HH Radio	3516	0.93	0	1	Dummy: 1 if household owns radio	
Geographic characteristics	Presence of mining company	3469	0.18	0	1	Dummy: 1 if respondent indicates that a mining or oil company operate in or nearby area	
	Distance to regional capital	3499	56	1	166	Dummy: Distance in kilometers to the closest regional capital. Measured as direct line (geodesic) from the interview spot (latitude and longitude coordinates).	
	Urban area	3526	0.46	0	1	Dummy: 1 if the district is considered as urban area	

Table 3. Characteristics of informed citizens, national resource revenue management

	(1)	(2)	(3)	(4)
English skills	1.193*** (4.58) [0.000]			1.141*** (3.18) [0.002]
Occupation mining	1.936** (2.04) [0.043]			1.558 (1.44) [0.152]
Common citizen	0.676*** (-6.22) [0.000]			0.675*** (-6.17) [0.000]
Interest in politics	1.059*** (2.80) [0.006]			1.037* (1.68) [0.096]
Travel to Accra	1.295*** (3.46) [0.001]			1.242*** (2.72) [0.007]
HH living conditions		1.107*** (3.71) [0.000]		1.059* (1.97) [0.052]
HH TV		1.260** (2.60) [0.011]		1.041 (0.40) [0.692]
HH Radio		1.639*** (3.79) [0.000]		1.420** (2.43) [0.017]
Presence of mining company			1.405*** (4.68) [0.000]	1.334*** (3.63) [0.000]
Distance to regional capital			0.998** (-2.36) [0.020]	0.999 (-1.41) [0.163]
Urban area			1.180*** (2.84) [0.005]	1.093 (1.41) [0.161]
Number of districts	120	120	120	120
Observations	3,462	3,478	3,425	3,384

Table shows results for probit regressions, coefficients are shown in odds ratios. Robust t-values are in parentheses and p-values are in square brackets. Estimations use two-stage clustering (districts and electoral area). Models 1, 2, and 3 are derived from preliminary estimations, which are included in Supplementary Appendix.

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

Table 4. Characteristics of informed citizens, local resource revenue management

	(1)	(2)	(3)	(4)
Age	0.994*			0.994*
	(-1.90)			(-1.84)
	[0.060]			[0.068]
English skills	1.098*			1.053
	(1.83)			(1.00)
	[0.070]			[0.320]
Occupation mining	2.641**			1.634
	(2.42)			(1.12)
	[0.017]			[0.266]
Common citizen	0.777***			0.787**
	(-2.84)			(-2.56)
	[0.005]			[0.012]
HH involved in mining		1.696***		1.431**
		(3.92)		(2.24)
		[0.000]		[0.027]
HH living conditions		1.062*		1.033
		(1.67)		(0.91)
		[0.097]		[0.364]
HH Radio		1.532*		1.392
		(1.96)		(1.47)
		[0.052]		[0.143]
Presence of mining company			1.563***	1.414***
			(4.50)	(3.40)
			[0.000]	[0.001]
Distance to regional capital			0.998**	0.998
			(-2.00)	(-1.63)
			[0.048]	[0.107]
Number of districts	120	120	120	120
Observations	3,432	3,462	3,422	3,353

Table shows results for probit regressions, coefficients are shown in odds ratio. Robust t-values are in parentheses and p-values are in square brackets. Estimations use two-stage clustering (districts and electoral area). Models 1, 2, and 3 are based on preliminary estimations, which are included in Supplementary Appendix.

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

SUPPLEMENTARY APPENDIX

Transparent for whom? Dissemination of information on Ghana's petroleum and mining revenue management

This version
February 2018

This Appendix includes background statistics for the tables and figures included in the article 'Transparent for whom? Dissemination of information on Ghana's petroleum and mining revenue management' by Authors (2018). It also provides additional results for the analysis included in the article. Further, the Appendix provides more details on the sampling strategy used in the survey that the article draws on, how the sampling was taken into account in the analysis, and how the observations in the dataset were weighted in the analysis. The dataset and detailed replication instructions will be made publicly available upon publication of the article.

Table of Contents

1. Ghana field experiment	31
2. Information sources	31
General information: Media sources	31
General information: People and meetings	32
Revenue information: Media sources	33
Revenue information: People and meetings	34
Information sources by age and by gender	35
Trust and distrust: Media sources	39
Trust and distrust: Personal sources	40
Trust and distrust by age and gender	41
3. Survey sampling and weights	43
4. Multivariate analysis: Informed citizens' profiles	44
Summary statistics and variable definition	44
Additional results	45
Individual characteristics	46
Household characteristics	48
Geographic characteristics	48
Full model: Removed variables one-by-one	49

1. Ghana field experiment

The survey used in the article is the baseline survey for a field experiment conducted in Ghana from June 2016-September 2017. The field experiment itself is part of a larger project – Examining transparency and accountability within the oil and gas sector: Impact evaluation of key provisions in Ghana’s Petroleum Revenue Management Act – funded by 3ie (Grant number TW8:1002ie). The field experiment has been jointly funded by 3ie, the Research Council of XXX (Grant number XXX), DfiD-funded Ghana Oil and Gas for Inclusive Growth (GOGIG) (Grant number 008/03/08/16), and University of XXX. GOGIG funded the interventions conducted by PIAC. The field experiment seeks to evaluate the impact of Ghana’s transparency and accountability initiative PIAC, targeting both leaders and citizens. Besides including the questions to be followed up in the endline survey and background variables, the baseline survey included questions on citizens’ and leaders’ attitudes and perception towards petroleum and mining revenue governance in Ghana, as well as questions on how people access information.

2. Information sources

General information: Media sources

The respondents were asked the following questions:

- Which of these *media* are the most important one for you when you inform yourself about what happens *in Ghana*? Please rank two
- Which of these *media* are the most important one for you when you inform yourself about what happens *in your area*? Please rank two

The answer alternatives to these questions are included in Table SA 1.

Table SA 1. Main media information sources in percent (%) for all participants combined

(column All) and separately for the different categories of the respondents

	News about Ghana						News about own area					
	Com. cit.	UC mem.	DA mem.	Trad. leader	Other leader	All	Com. cit.	UC mem.	DA mem.	Trad. leader	Other leader	All
No first main source	2	0	0	2	1	1	4	11	11	11	8	8
No second main source	13	11	3	8	12	10	34	34	42	43	30	36
Radio	86	88	81	91	92	87	63	55	50	69	71	62
Television	72	75	71	73	74	73	21	16	5	6	27	17
Internet (websites)	10	9	24	4	6	10	3	1	1	0	2	2
Social media	2	2	5	1	1	2	1	1	1	1	1	1
Cell phone	7	7	7	12	3	7	18	29	32	31	9	22
Newspaper	2	4	9	6	6	5	1	1	2	0	2	1
Billboard or poster	0	0	0	0	1	0	3	3	7	4	9	5
Information center	4	4	1	3	4	3	44	40	38	30	33	39
Information van	1	0	0	0	1	1	5	6	6	4	6	5
other	0	0	0	0	0	0	2	3	4	1	1	2
Total (%)	200	200	200	200	200	200	200	200	200	200	200	200
Number of respondents	1210	603	557	385	762	3517	1206	603	557	383	759	3508

Notes: As all respondents could list two main sources, the percent shares add up to 200%.

Com. cit. = common citizen; UC mem. = Unit Committee member; DA mem. = District Assembly member; Trad. Leader = Traditional leader

General information: People and meetings

The respondents were asked the following questions:

- Which of these *people or meetings* are the most important one for you when you inform yourself about what happens *in Ghana*? Please rank two
- Which of these *people or meetings* are the most important one for you when you inform yourself about what happens *in your area*? Please rank two

The answer alternatives are included in Table SA 2.

Table SA 2. Main personal information sources in percent (%) for all participants combined (column All) and separately for the different categories of the respondents

	News about Ghana						News about own area					
	Com. cit.	UC mem	DA mem	Trad. leader	Other leader	All	Com. cit.	UC mem	DA mem	Trad. leader	Other leader	All
No first main source	6	8	4	7	6	6	4	1	0	1	4	3
No second main source	14	16	9	13	12	13	8	4	2	5	7	6
A District Assembly member	35	65	62	47	54	50	41	69	26	65	54	49
A Unit Committee member	11	24	9	11	22	15	16	32	46	15	22	25
A Chief	11	13	4	16	17	12	14	23	16	32	26	20
Another local leader	6	5	8	19	12	9	7	8	22	28	19	14
A family member	33	10	6	28	15	20	31	6	3	13	11	16
A friend	46	32	49	24	35	39	38	20	10	12	22	24
Colleagues at work	14	8	22	7	7	12	9	2	2	2	5	5
Other villager or neighbor	21	5	7	15	8	13	25	24	57	18	19	28
Meetings org. by local leaders	1	2	7	4	7	4	4	3	10	5	6	5
Meetings org. by a community group	1	6	4	4	3	1	2	6	4	2	3	2
Meetings org. by another organization	0	4	6	1	1	3	0	0	1	0	1	2
other	2	2	3	4	1	2	1	1	2	3	1	1
Total (%)	200	200	200	200	200	199	200	200	200	200	200	199
	120					350	120					350
Number of respondents	9	603	557	385	755	9	6	603	557	384	757	7

Notes: As all respondents could list two main sources, the percent shares add up to 200%.

Com. cit. = common citizen; UC mem. = Unit Committee member; DA mem. = District Assembly member; Trad. Leader = Traditional leader

Revenue information: Media sources

The respondents were asked the following questions:

- Which of *media* are the most important one for you when it comes to getting to know how revenues from oil, gas, and mining are handled *in Ghana*? Please rank two.
- Which of *media* are the most important one for you when it comes to getting to know how revenues from oil, gas, and mining are handled *in your area*? Please rank two.

The answer alternatives are included in Table SA 3.

Table SA 3. Main media information sources in percent (%) for all participants combined (column All) and separately for the different categories of the respondents

	National revenue information						Local revenue information in own area					
	Com. cit.	UC mem.	DA mem.	Trad. leader	Other leader	All	Com. cit.	UC mem.	DA mem.	Trad. leader	Other leader	All
No first main source	0	2	1	1	2	1	8	20	31	12	15	15
No second main source	22	32	22	31	21	25	23	35	55	65	37	38
Radio	91	84	82	94	90	88	82	70	62	77	79	77
Television	73	68	68	62	74	70	71	65	34	23	53	53
Internet (websites)	7	7	13	3	4	7	5	0	7	0	2	3
Social media	0	1	1	1	0	1	0	0	0	0	0	0
Cell phone	2	0	0	1	0	1	8	0	0	0	0	2
Newspaper	2	3	10	6	4	5	2	5	7	0	3	3
Billboard or poster	0	0	0	0	0	0	0	0	0	0	0	0
Information center	2	2	0	1	2	1	0	5	0	15	11	6
Information van	0	0	0	0	0	0	2	0	3	4	0	1
other	0	0	2	0	1	1	2	0	0	4	1	1
Total (%)	200	200	200	200	200	200	200	200	200	200	200	200
Number of respondents	234	167	245	170	257	3	65	20	29	26	95	235

Notes: As all respondents could list two main sources, the percent shares add up to 200%.

Com. cit. = common citizen; UC mem. = Unit Committee member; DA mem. = District Assembly member; Trad. Leader = Traditional leader

Revenue information: People and meetings

The respondents were asked the following questions:

- Which of these *people or meetings* are the most important one for you when it comes to getting to know how revenues from oil, gas, and mining are handled *in Ghana*? Please rank two.
- Which of these *people or meetings* are the most important one for you when it comes to getting to know how revenues from oil, gas, and mining are handled *in your area*? Please rank two.

The answer alternatives are included in Table SA 4.

Table SA 4. Main personal information sources in percent (%) for all participants combined (column All) and separately for the different categories of the respondents

	National revenue information						Local revenue information					
	Com . cit.	UC mem	DA mem	Trad. leade r	Other leade r	All	Com . cit.	UC mem	DA mem	Trad. leade r	Other leade r	All
No first main source	59	52	57	44	49	53	55	10	10	15	35	33
No second main source	65	68	75	60	64	66	66	35	52	31	43	48
A District Assembly member	18	26	20	14	24	20	23	60	76	50	31	39
A Unit Committee member	6	10	2	4	11	6	12	25	3	12	13	13
A Chief	6	2	1	5	7	4	11	5	10	31	22	17
Another local leader	4	3	3	12	7	6	3	30	10	12	16	13
A family member	6	5	2	7	2	4	0	0	0	4	5	3
A friend	19	19	25	22	17	20	12	10	14	8	14	13
Colleagues at work	4	10	7	5	3	6	3	0	0	4	1	2
Other villager or neighbor	13	2	1	15	6	7	9	0	0	4	11	7
Meetings org. by local leaders	0	0	1	5	2	2	0	0	3	8	3	3
Meetings org. by a community group	1	2	0	4	1	1	2	10	7	12	2	4
Meetings org. by another organization	0	3	4	2	3	3	0	15	7	8	1	3
other	1	0	0	1	2	1	3	0	7	4	0	2
Total (%)	200	200	200	200	200	200	200	200	200	200	200	200
Number of respondents	234	167	245	169	252	106	65	20	29	26	91	23

Notes: As all respondents could list two main sources, the percent shares add up to 200%.

Com. cit. = common citizen; UC mem. = Unit Committee member; DA mem. = District Assembly member; Trad. Leader = Traditional leader

Information sources by age and by gender
Table SA 5 and

Table SA 6 show the main media and personal information sources for the under 30-years old and those over and Table SA 8 for men and women

Table SA 5. Main media information sources in percent (%) for those over and under 30-years

	News about Ghana		News about own area		National revenue information		Local revenue information	
	30+	< 30	30+	< 30	30+	< 30	30+	< 30
No first main source	1	1	8	6	1	1	15	14
No second main source	10	11	35	36	25	17	41	26
Radio	89	76	63	56	89	83	77	74
Television	74	70	16	24	69	75	50	74
Internet (websites)	8	26	1	6	6	17	2	9
Social media	1	6	1	3	1	2	0	0
Cell phone	7	6	23	19	1	2	2	3
Newspaper	5	3	1	2	5	2	4	0
Billboard or poster	0	0	5	4	0	0	1	0
Information center	4	1	40	36	2	1	8	0
Information van	1	0	6	5	0	0	2	0
other	0	0	2	3	1	1	1	0
Total (%)	200	200	200	200	200	200	200	200
Number of respondents	2,959	504	2,952	504	937	126	200	35

Notes: As all respondents could list two main sources, the percent shares add up to 200%.

Table SA 6. Main personal information sources in percent (%) for those over and under 30-years

	News about Ghana		News about own area		National revenue information		Local revenue information	
	30+	< 30	30+	< 30	30+	< 30	30+	< 30
No first main source	6	6	3	3	51	63	30	54
No second main source	13	15	6	8	65	74	45	69
A District Assembly member	49	35	48	37	20	15	35	20
A Unit Committee member	16	11	26	19	7	6	13	9
A Chief	13	6	22	12	5	1	19	3
Another local leader	10	2	16	7	6	2	13	9
A family member	19	27	14	26	4	3	3	0
A friend	36	58	21	43	20	20	13	11
Colleagues at work	12	13	5	9	6	4	2	0
Other villager or neighbor	11	20	28	28	7	10	7	11
Meetings org. by local leaders	4	2	6	4	2	1	3	0
Meetings org. by a community group	3	2	3	3	2	2	7	6
Meetings org. by another organization	2	1	0	0	3	0	1	3
Other	5	3	4	2	3	1	9	6
Total (%)	200	200	200	200	200	200	200	200
Number of respondents	2,953	504	2,951	504	931	126	196	35

Notes: As all respondents could list two main sources, the percent shares add up to 200%.

Table SA 7. Main media information sources in percent (%) for men and women

	News about Ghana		News about own area		National revenue information		Local revenue information	
	Men	Women	Men	Women	Men	Women	Men	Women
No first main source	0	3	9	5	1	0	17	5
No second main source	9	17	36	34	24	27	41	25
Radio	88	87	60	68	88	90	74	88
Television	73	72	15	27	70	70	50	68
Internet (websites)	12	5	2	2	8	5	3	3
Social media	2	1	1	1	1	0	0	0
Cell phone	7	6	24	14	1	2	1	8
Newspaper	6	1	1	1	6	0	4	0
Billboard or poster	0	0	5	4	0	0	0	3
Information center	3	6	39	38	1	4	7	3
Information van	0	2	5	6	0	1	2	0
other	0	0	3	1	1	1	1	0
Total (%)	200	200	200	200	200	200	200	200
Number of respondents	2,744	770	2,741	766	916	157	195	40

Notes: As all respondents could list two main sources, the percent shares add up to 200%.

Table SA 8. Main personal information sources in percent (%) for men and women

	News about Ghana		News about own area		National revenue information		Local revenue information	
	Men	Women	Men	Women	Men	Women	Men	Women
No first main source	6	5	2	5	52	58	29	53
No second main source	14	9	6	7	67	63	46	60
A District Assembly member	50	36	49	38	20	15	34	28
A Unit Committee member	16	14	26	20	7	4	13	10
A Chief	12	10	22	13	4	5	19	8
Another local leader	9	9	15	10	6	5	13	10
A family member	15	40	10	35	4	7	3	0
A friend	40	38	23	30	20	22	12	15
Colleagues at work	13	8	5	6	6	3	2	3
Other villager or neighbor	9	24	28	30	6	15	6	13
Meetings org. by local leaders	4	3	6	2	2	1	3	0
Meetings org. by a community group	3	3	4	3	2	1	7	3
Meetings org. by another organization	3	1	0	0	3	0	2	0
Other	5	2	4	1	3	0	10	0
Total (%)	200	200	200	200	200	200	200	200
Number of respondents	2,739	769	2,741	765	910	157	191	40

Notes: As all respondents could list two main sources, the percent shares add up to 200%.

Trust and distrust: Media sources

The respondents were asked the following questions:

- Please rank the two media you trust the most.
- Please rank the two media you trust the least.

The answer alternatives are included in Table SA 9.

Table SA 9. Most and least trusted media in percent (%) for all participants combined (column All) and separately for the different categories of the respondents.

	Trusted media						Distrusted media						
	Com . cit.	UC mem	DA mem	Trad. leader	Other leader	All	Com . cit.	UC mem	DA mem	Trad. leader	Other leader	All	
Distrust all	7	3	1	4	5	4	Trust all	29	37	24	35	49	34
Trust only one	14	10	5	15	16	12	Distrust only one	35	44	40	52	59	44
Radio	80	86	78	87	85	83	Radio	20	16	23	15	15	18
Television	72	75	77	70	71	73	Television	6	9	4	4	5	6
Internet (websites)	9	9	17	4	5	9	Internet (websites)	15	18	20	24	8	16
Social media	1	1	2	1	0	1	Social media	34	29	40	29	21	31
Cell phone	7	5	6	11	2	6	Cell phone	30	20	32	14	15	24
Newspaper	3	4	11	4	6	5	Newspaper	10	7	8	10	7	8
Billboard or poster Information center	0	0	1	0	1	0	Billboard or poster Information center	8	6	4	8	5	7
Information van	4	5	2	3	6	4	Information van	6	7	5	7	10	7
other	2	1	1	1	1	1	other	4	4	1	2	4	3
	0	0	0	0	1	0		0	0	0	0	0	0
Total (%)	200	200	200	200	200	200	Total (%)	199	199	200	200	198	199
Number of respondents	1195	598	554	383	757	348	Number of respondents	1136	558	554	376	707	333
						7							1

Notes: As all respondents could list two main sources, the percent shares add up to 200%.

Com. cit. = common citizen; UC mem. = Unit Committee member; DA mem. = District Assembly member; Trad. Leader = Traditional leader

Trust and distrust: Personal sources

The respondents were asked the following questions:

- Please rank the two people or meetings you trust the most.
- Please rank the two people or meetings you trust the least.

The answer alternatives are included in Table SA 10.

Table SA 10. Most and least trusted people in percent (%) for all participants combined (column All) and separately for the different categories of the respondents.

	Trusted persons						Distrusted persons						
	Com. cit.	UC mem.	DA mem.	Trad. leader	Other leader	All	Com. cit.	UC mem.	DA mem.	Trad. leader	Other leader	All	
Distrust all	8	3	2	5	8	6	Trust all	30	36	40	34	49	37
Trust only one	12	7	6	9	12	10	Distrust only one	39	47	57	50	58	49
A District Assembly member	49	85	38	63	59	57	A District Assembly member	5	8	3	2	7	5
A Unit Committee member	13	28	32	8	19	19	A Unit Committee member	5	4	5	2	5	5
A Chief Another local leader	24	33	22	43	33	29	A Chief Another local leader	2	3	4	0	5	3
A family member	6	6	15	21	14	11	A family member	4	7	3	11	5	5
A friend	36	9	8	21	20	22	A friend	4	6	2	4	2	4
Colleagues at work	26	13	10	12	13	17	Colleagues at work	32	34	28	27	18	28
Other villager or neighbor	8	2	8	4	4	6	Other villager or neighbor	16	13	5	9	6	11
Meetings org. by local leaders	12	6	24	3	8	11	Meetings org. by local leaders	49	30	41	51	29	41
Meetings org. by a community group	3	2	8	3	6	4	Meetings org. by a community group	4	4	3	2	3	3
Meetings org. by another organization	2	4	4	3	3	3	Meetings org. by another organization	3	4	2	3	2	3
other	1	1	3	1	1	1	other	3	2	2	2	3	2
other	0	1	19	3	1	4	other	4	1	5	2	8	4
Total (%)	200	200	200	200	200	200	Total (%)	200	200	199	200	199	200
Number of respondents	1194	594	556	382	748	3474	Number of respondents	1124	566	552	375	712	3329

Notes: As all respondents could list two main sources, the percent shares add up to 200%.

Com. cit. = common citizen; UC mem. = Unit Committee member; DA mem. = District Assembly member; Trad. Leader = Traditional leader

Trust and distrust by age and gender

Table SA 11. Most and least trusted media in percent (%) for under 30-years old and those

who are older

	Trusted media		Distrusted media			Trusted persons		Distrusted persons	
	30+	< 30	30+	< 30		30+	< 30	30+	< 30
Trust none	4	4			Trust none	6	7		
Trust all			35	29	Trust all			37	39
Trust only one	12	11			Trust only one	10	11		
Distrust only one			46	37	Distrust only one			49	52
Radio	84	74	19	15	A District Assembly member	59	46	5	7
Television	74	72	6	5	A Unit Committee member	20	15	4	5
Internet (websites)	7	22	16	13	A Chief	31	20	3	3
Social media	1	3	30	43	Another local leader	12	5	5	4
Cell phone	6	6	22	36	A family member	20	32	4	3
Newspaper	6	5	9	5	A friend	14	32	27	31
Billboard or poster	0	1	7	7	Colleagues at work	5	9	11	9
Information center	5	2	7	7	Other villager or neighbor	10	16	41	38
Information van	1	1	3	3	Meetings org. by local leaders	4	3	3	3
other	0	0	0	0	Meetings org. by a community group	3	2	3	3
Total (%)	200	200	200	200	Meetings org. by another organization	1	0	2	2
Number of respondents	2,929	502	2,799	486	Other	4	2	5	2
					Total (%)	200	200	200	200
					Number of respondents	2922	500	2,805	475

Notes: As all respondents could list two main sources, the percent shares add up to 200%.

Table SA 12. Most and least trusted people in percent (%) for men and women

	Trusted media		Distrusted media			Trusted persons		Distrusted persons	
	Men	Women	Men	Women		Men	Women	Men	Women
Trust none	3	11			Trust none	5	9		
Trust all			32	42	Trust all			39	33
Trust only one	10	20			Trust only one	9	12		
Distrust only one			44	47	Distrust only one			51	42
Radio	84	78	17	25	A District Assembly member	59	47	5	6
Television	75	67	5	10	A Unit Committee member	20	17	4	6
Internet (websites)	10	4	16	16	A Chief	32	20	3	2
Social media	1	1	34	22	Another local leader	12	8	5	5
Cell phone	6	6	27	12	A family member	17	39	4	5
Newspaper	6	3	8	10	A friend	16	18	27	32
Billboard or poster	0	1	7	4	Colleagues at work	6	6	10	12
Information center	4	7	7	7	Other villager or neighbor	10	15	40	44
Information van	1	2	3	5	Meetings org. by local leaders	5	3	3	4
other	0	0	0	0	Meetings org. by a community group	3	3	3	4
Total (%)	200	200	200	200	Meetings org. by another organization	1	1	2	3
Number of respondents	2,725	755	2,620	710	Other	4	2	5	2
					Total (%)	200	200	200	200
					Number of respondents	2718	755	2,616	712

Notes: As all respondents could list two main sources, the percent shares add up to 200%.

3. Survey sampling and weights

The survey was conducted in 120 districts of the 216 districts in Ghana. All oil (6) and mining districts (25) were included²⁰ and the remaining 89 districts were selected randomly among the remaining districts. In each district, five Electoral Areas were selected randomly using the Electoral Commission's list of Electoral Areas as the sample frame.

One District Assembly (DA) member per electoral area was selected from a list obtained from the District Administration. The selected DA was contacted and an appointment made to meet in her electoral area; in addition, each DA was asked to suggest one Unit Committee (UC) member; one chief or other prime member of the traditional authority such as a Queen Mother; and one other opinion leader (e.g., a journalist or teacher) in her electoral area. Lastly, two ordinary citizens (1 male and 1 female) were randomly selected in each electoral area. The sampling structure therefore targeted 30 respondents per selected district, with an average 26 respondents per district included in the survey. As Table SA 13 shows, the most difficult to reach were the traditional leaders. In most cases, when a representative for the traditional authority could not be interviewed, an additional opinion leader was interviewed instead.

We include sampling weights and information about the sampling design – the two-stage clustering and stratification in the first stage – in our analysis. The *sampling weight* was constructed to take into account the oversampling of DA and UC members compared to the overall population (using estimates of the number of elected representatives and 2010 census data); the undersampling of women (using 2010 census data); and the difference in ownership of radios, TVs and mobile phones – as proxies for household income – of our sample wrt the overall population (using data from the Afrobarometer round 6, 2014). In the first stage, we sampled districts and thus we use districts as our *primary sample unit*. The districts were drawn from three strata: oil districts, mining districts, and all the other districts with stratum sizes of 6, 25, and 185, respectively. The remaining primary sample units were sampled randomly within the 'no oil/no mining stratum' but all oil and mining districts were included in the survey. We take into account this *stratification* in the analysis: the variance estimates are calculated using the three strata and the total stratum sizes with the finite population correction.²¹ Our survey design included *second level clustering* on the electoral area. As each district includes a different number of electoral areas, we adjust the variance estimates by including the total number of electoral areas in finite population correction.

Taylor linearized variance estimation was used as the method for variance estimation. STATA 14.2 was used in all analyses.²²

²⁰ The list of mining districts was obtained from the Ghana Minerals Commission.

²¹ Finite population correction accounts for the reduction in variance that occurs when sampling without replacement from a finite population.

²² Anonymized replication data file and detailed replication instructions will be made publicly available upon publication of the article.

4. Multivariate analysis: Informed citizens' profiles

Summary statistics and variable definition

Table SA 13. Summary statistics and variable definition

	Variable	Obs	Mean	Min	Max	Definition	
Dependent variables	Natural revenue management	3492	0.31	0	1	Dummy: 1 if respondent had in the past year received or heard any information from any source about how revenues from oil, gas, or mining had been handled in Ghana	
	Local revenue management	3487	0.07	0	1	Dummy: 1 if respondent had in the past year received or heard any information from any source about how revenues from oil, gas, or mining had been handled in own area	
Individual characteristics	Personal	Age	3466	46	18	110	Age in years
		Gender	3518	0.22	0	1	Dummy: 1 if respondent is female
		Ethnic majority	3526	0.58	0	1	Dummy: 1 if respondent is Akan
		Education	3513	4.57	0	8	Scale from 0 to 8. 0: None (13%); 1: Incomplete primary school (4%); 2: Completed primary school (2%); 3: Incomplete junior high school (5%); Complete junior (32%); Incomplete secondary/technical school: (2%); Completed secondary/technical school (18%) Incomplete tertiary (2%); Completed tertiary (22%)
		English skills	3513	1.48	0	2	Scale from 0 to 2. 0: Cannot read or write English; 1: Can read English; 2: Can read and write English
	Social and role related aspects	Household head	3526	0.71	0	1	Dummy: 1 if respondent is household head
		Occupation mining	3526	0.01	0	1	Dummy: 1 if respondent's main occupation is mining
		Common citizen	3526	0.34	0	1	Dummy: 1 if respondent does not have any leader position
		DA	3526	0.16	0	1	Dummy: 1 if respondent is District Assembly member
		UC	3526	0.17	0	1	Dummy: 1 if respondent is Unit Committee member
	Chief	3526	0.11	0	1	Dummy: 1 if respondent is traditional leader	
	Opinion leader	3526	0.22	0	1	Dummy: 1 if respondent is opinion leader (a teacher, religious leader, youth leader etc.)	
	Interest in politics	3495	2.39	0	5	How often the respondent discusses political matters and public affairs with friends, family or colleagues. 6-point scale: Never, Rarely, Sometimes, Often, Very often, All the time	
	Travel to Accra	3515	0.72	0	1	Dummy: 1 if respondent has travelled to Accra during the past six months	
Household characteristics	HH size	3469	4.91	0	30	Number of adults living permanently in the household	
	HH involved in mining	3507	0.06	0	1	Dummy: 1 if someone in the household currently engages in mining	
	HH living conditions	3505	1.99	0	4	Respondent's self-assessment of households' present living conditions. 5-point Likert scale from very bad to very good	
	HH TV	3517	0.85	0	1	Dummy: 1 if household owns TV	
	HH Radio	3516	0.93	0	1	Dummy: 1 if household owns radio	
Geographic characteristics	Presence of mining company	3469	0.18	0	1	Dummy: 1 if respondent indicates that a mining or oil company operate in or nearby area	
	Distance to regional capital	3499	56	1	166	Dummy: Distance in kilometers to the closest regional capital. Measured as direct line (geodesic) from the interview spot (latitude and longitude coordinates).	
	Urban area	3526	0.46	0	1	Dummy: 1 if the district is considered as urban area	

Additional results

Tables SA 14-18 show additional results for Tables 2 and 3 presented in the article. The dependent variables are the same as in the article: *National resource revenue management* (NRRM) and *Local nature resource revenue management* (LRRM). The results are first shown for individual (Table SA 14), household (Table SA 15), and geographic characteristics (Table SA 16) separately. After that, additional robustness checks are provided for the full model estimations (

Table SA 17 and Table SA 18).

Individual characteristics

Table SA 14 shows the results when only the individual characteristics are include in the estimation model. Models 1 and 5 include the personal aspects, and Models 2 and 6 the social and role related aspects. Models 3 and 7 include personal and social variables that were significant or nearly significant in one of the previous models and Models 4 and 8 include the variables that were significant or nearly significant in Model 3 or 7, respectively. Model 4 is the same as Model 1 in Table 2 in the article and Model 8 same as Model 1 in Table 3 in the article.

Table SA 14. Individual characteristics of informed citizens

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	National resource revenue management				Local resource revenue management			
Age	1.002 (0.78)				0.995 (-1.52)		0.994* (-1.95)	0.994* (-1.90)
	0.438				0.131		0.053	0.060
Gender	0.778*** (-3.94)		1.034 (0.39)		0.858 (-1.38)		0.988 (-0.15)	
	0.000		0.699		0.171		0.883	
Ethnic majority	1.009 (0.14)				1.084 (0.84)			
	0.891				0.401			
Education	1.010 (0.57)				0.972 (-1.26)			
	0.569				0.211			
English skills	1.181*** (3.11)		1.197*** (4.60)	1.193*** (4.58)	1.163** (2.21)		1.096* (1.82)	1.098* (1.83)
	0.002		0.000	0.000	0.029		0.072	0.070
Travel to Accra	1.267*** (3.23)		1.287*** (3.39)	1.295*** (3.46)		1.009 (0.09)		
	0.002		0.001	0.001		0.930		
Occupation mining		1.825** (2.01)	1.909** (2.01)	1.936** (2.04)		2.754** (2.61)	2.633** (2.38)	2.641** (2.42)
		0.047	0.047	0.043		0.010	0.019	0.017
Common citizen		0.676*** (-5.56)	0.703*** (-4.90)	0.676*** (-6.22)		0.814** (-2.45)	0.782*** (-2.66)	0.777*** (-2.84)
		0.000	0.000	0.000		0.016	0.009	0.005
Interest in politics		1.075*** (3.59)	1.058*** (2.72)	1.059*** (2.80)		1.014 (0.52)		
		0.000	0.008	0.006		0.604		
Household head		1.121 (1.57)	1.107 (1.09)		1.002 (0.02)			
		0.120	0.276		0.987			
Observations	3,431	3,469	3,462	3,462	3,428	3,461	3,432	3,432

Table shows results for probit regressions, coefficients are shown in odds ratio. Robust t-values are in parentheses and p-values are given under t-values. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Household characteristics

Table SA 15 shows the results when only the household characteristics are include in the estimation model. Models 1 and 3 include all variables and Models 2 and 4 those that were significant or nearly significant in Model 1 and Model 3, respectively. Model 2 is the same as Model 2 in Table 2 in the article and Model 4 the Model 2 in Table 3 in the article.

Table SA 15. Household characteristics of informed citizens

	(1)	(2)	(3)	(4)
	National resource revenue management		Local resource revenue management	
HH size	1.003 (0.35)		1.000 (0.01)	
	0.726		0.990	
HH involved in mining	1.125 (1.04)		1.687*** (3.85)	1.696*** (3.92)
	0.302		0.000	0.000
HH living conditions	1.100*** (3.44)	1.107*** (3.71)	1.055 (1.43)	1.062* (1.67)
	0.001	0.000	0.155	0.097
HH TV	1.261** (2.61)	1.260** (2.60)	1.098 (0.71)	
	0.010	0.011	0.478	
HH Radio	1.614*** (3.65)	1.639*** (3.79)	1.481* (1.81)	1.532* (1.96)
	0.000	0.000	0.073	0.052
Observations	3,420	3,467	3,415	3,462

*Table shows results for probit regressions, coefficients are shown in odds ratio. Robust t-values are in parentheses and p-values are given under t-values. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$*

Geographical characteristics

Table SA 16 shows the results when only the household characteristics are included in the estimation model. Models 1 and 2 include all variables and Model 3 those that were significant Model 2. Model 1 is the same as Model 3 in Table 2 in the article, and Model 3 is the same as Model 3 in Table 3 in the article.

Table SA 16. Geographical characteristics of informed citizens

	National resource revenue management	Local resource revenue	
Presence of mining company	1.405*** (4.68)	1.569*** (4.55)	1.563*** (4.50)
	0.000	0.000	0.000
Distance to regional capital	0.998** (-2.36)	0.997** (-2.12)	0.998** (-2.00)
	0.020	0.036	0.048
Urban area	1.180*** (2.84)	0.916 (-0.96)	
	0.005	0.341	
Observations	3,425	3,422	3,422

*Table shows results for probit regressions, coefficients are shown in odds ratio. Robust t-values are in parentheses and p-values are given under t-values. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$*

Full model: variables added one-by-one

Table SA 17 shows the results for *National resource revenue management* when the variables that were removed in the stepwise selection process are included in the estimation model one-by-one. Model 1 replicates the base model for NRRM (Model 4) in Table 2 in the article. Table SA 18 shows the same for *Local resource revenue management* (base model is Model 4 in Table 3 in the article).

Table SA 17. Characteristics of informed citizens. National resource revenue management. Robustness analysis

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
English skills	1.141*** (3.18) 0.002	1.131*** (2.87) 0.005	1.140*** (3.10) 0.002	1.141*** (3.16) 0.002	1.154** (2.55) 0.012	1.140*** (3.15) 0.002	1.136*** (2.98) 0.003	1.139*** (3.13) 0.002
Occupation mining	1.558 (1.44) 0.152	1.533 (1.41) 0.162	1.556 (1.43) 0.154	1.558 (1.45) 0.151	1.559 (1.44) 0.152	1.537 (1.39) 0.166	1.553 (1.44) 0.153	1.625 (1.54) 0.127
Common citizen	0.675*** (-6.17) 0.000	0.657*** (-5.56) 0.000	0.678*** (-5.51) 0.000	0.675*** (-6.17) 0.000	0.675*** (-6.16) 0.000	0.704*** (-4.85) 0.000	0.674*** (-6.22) 0.000	0.673*** (-6.21) 0.000
Interest in politics	1.037* (1.68) 0.096	1.036* (1.67) 0.098	1.036* (1.67) 0.098	1.037* (1.71) 0.090	1.037* (1.69) 0.094	1.034 (1.58) 0.118	1.036 (1.63) 0.105	1.036* (1.66) 0.099
Travel to Accra	1.242*** (2.72) 0.007	1.236*** (2.68) 0.008	1.241*** (2.71) 0.008	1.241*** (2.72) 0.007	1.244*** (2.73) 0.007	1.233*** (2.64) 0.010	1.254*** (2.81) 0.006	1.247*** (2.76) 0.007
HH living conditions	1.059* (1.97) 0.052	1.063** (2.07) 0.041	1.059* (1.97) 0.051	1.060* (1.96) 0.052	1.060** (2.00) 0.047	1.061** (2.03) 0.044	1.058* (1.91) 0.058	1.057* (1.91) 0.059
HH TV	1.041 (0.40) 0.692	1.011 (0.11) 0.916	1.041 (0.40) 0.691	1.038 (0.36) 0.717	1.044 (0.42) 0.676	1.048 (0.46) 0.647	1.038 (0.36) 0.719	1.038 (0.37) 0.712
HH Radio	1.420** (2.43) 0.017	1.432** (2.47) 0.015	1.420** (2.43) 0.017	1.420** (2.43) 0.016	1.418** (2.42) 0.017	1.414** (2.40) 0.018	1.411** (2.37) 0.019	1.419** (2.42) 0.017
Presence of mining company	1.334*** (3.63) 0.000	1.306*** (3.37) 0.001	1.333*** (3.57) 0.001	1.327*** (3.43) 0.001	1.333*** (3.61) 0.000	1.328*** (3.56) 0.001	1.320*** (3.46) 0.001	1.346*** (3.60) 0.000
Distance to regional capital	0.999 (-1.41) 0.163	0.998 (-1.49) 0.139	0.999 (-1.41) 0.162	0.999 (-1.38) 0.170	0.999 (-1.41) 0.161	0.999 (-1.40) 0.165	0.999 (-1.29) 0.200	0.999 (-1.31) 0.192
Urban area	1.093 (1.41) 0.161	1.095 (1.43) 0.155	1.092 (1.41) 0.162	1.093 (1.41) 0.160	1.093 (1.41) 0.161	1.093 (1.41) 0.161	1.096 (1.45) 0.149	1.101 (1.53) 0.128
Age		0.998 (-1.04) 0.299						
Gender			0.992 (-0.12) 0.901					
Ethnic majority				1.018 (0.25) 0.800				
Education					0.995 (-0.29) 0.776			
Household head						1.080 (1.02) 0.310		
HH size							0.996 (-0.45) 0.652	
HH involved in mining								0.930 (-0.55) 0.582
Observations	3,384	3,343	3,384	3,384	3,380	3,384	3,350	3,374

Table shows results for probit regressions, coefficients are shown in odds ratio. Robust t-values are in parentheses and p-values are given under t-values. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table SA 18. Characteristics of informed citizens. Local resource revenue management. Robustness analysis

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Age	0.994*	0.994*	0.994*	0.993**	0.995	0.994*	0.994*	0.994*	0.994*	0.994*
	(-1.84)	(-1.84)	(-1.83)	(-2.10)	(-1.52)	(-1.88)	(-1.84)	(-1.86)	(-1.87)	(-1.85)
	0.068	0.068	0.070	0.038	0.130	0.062	0.068	0.065	0.063	0.066
English skills	1.053	1.057	1.053	1.119	1.058	1.057	1.065	1.044	1.057	1.057
	(1.00)	(1.07)	(0.99)	(1.57)	(1.07)	(1.06)	(1.22)	(0.83)	(1.06)	(1.06)
	0.320	0.286	0.326	0.120	0.287	0.293	0.226	0.411	0.292	0.291
Occupation	1.634	1.641	1.634	1.626	1.680	1.651	1.620	1.647	1.622	1.692
mining	(1.12)	(1.13)	(1.12)	(1.12)	(1.17)	(1.14)	(1.08)	(1.14)	(1.12)	(1.19)
	0.266	0.260	0.266	0.266	0.242	0.257	0.283	0.258	0.265	0.237
Common	0.787**	0.776***	0.787**	0.774***	0.759***	0.776***	0.780***	0.795**	0.786**	0.788**
citizen	(-2.56)	(-2.65)	(-2.54)	(-2.75)	(-2.82)	(-2.68)	(-2.68)	(-2.54)	(-2.59)	(-2.54)
	0.012	0.009	0.012	0.007	0.006	0.009	0.008	0.012	0.011	0.012
HH involved in	1.431**	1.432**	1.432**	1.431**	1.432**	1.428**	1.448**	1.440**	1.436**	1.427**
mining	(2.24)	(2.25)	(2.24)	(2.23)	(2.24)	(2.21)	(2.31)	(2.25)	(2.27)	(2.23)
	0.027	0.026	0.027	0.027	0.027	0.029	0.023	0.026	0.025	0.028
HH living	1.033	1.033	1.033	1.036	1.032	1.034	1.042	1.034	1.034	1.035
conditions	(0.91)	(0.91)	(0.92)	(0.98)	(0.89)	(0.93)	(1.16)	(0.94)	(0.93)	(0.99)
	0.364	0.363	0.361	0.330	0.377	0.352	0.248	0.347	0.354	0.323
HH radio	1.392	1.393	1.392	1.395	1.398	1.409	1.416	1.389	1.402	1.412
	(1.47)	(1.48)	(1.47)	(1.48)	(1.50)	(1.56)	(1.57)	(1.46)	(1.53)	(1.55)
	0.143	0.142	0.143	0.143	0.137	0.122	0.119	0.146	0.128	0.123
Presence of	1.414***	1.418***	1.413***	1.414***	1.421***	1.420***	1.416***	1.390***	1.417***	1.416***
mining	(3.40)	(3.41)	(3.22)	(3.37)	(3.45)	(3.44)	(3.41)	(3.17)	(3.41)	(3.41)
	0.001	0.001	0.002	0.001	0.001	0.001	0.001	0.002	0.001	0.001
Distance to	0.998	0.998	0.998	0.998*	0.998	0.998	0.998*	0.998	0.998	0.998*
regional	(-1.63)	(-1.63)	(-1.60)	(-1.66)	(-1.63)	(-1.63)	(-1.90)	(-1.60)	(-1.63)	(-1.80)
	0.107	0.107	0.113	0.099	0.105	0.106	0.060	0.112	0.105	0.074
Gender		1.028								
		(0.32)								
		0.751								
Ethnic majority			1.003							
			(0.02)							
			0.981							
Education				0.970						
				(-1.27)						
				0.205						
Household					0.918					
head					(-0.84)					
					0.402					
Interest in						0.978				
politics						(-0.84)				
						0.404				
Travel to Accra							0.866			
							(-1.35)			
							0.180			
HH size								1.004		
								(0.33)		
								0.744		
HH TV									0.968	
									(-0.24)	
									0.810	
Urban area										0.879
										(-1.34)
										0.183
Observations	3,353	3,353	3,353	3,349	3,353	3,331	3,352	3,320	3,353	3,353

Table shows results for probit regressions, coefficients are shown in odds ratio. Robust t-values are in parentheses and p-values are given under t-values. *** p<0.01, ** p<0.05, * p<0.1