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# Tax morale, public goods, and politics: Experimental evidence from Mozambique

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## Abstract

Tax revenue is vital for development, but governments must balance raising revenues with maintaining political support. Partnering with a city government in Mozambique, we experimentally vary the provision of information highlighting the role of municipal tax revenues in 1) local public good provision and 2) local political autonomy. We measure how this information affects property owners' tax morale and political support for the government. Public goods information raises tax morale, especially in areas of low baseline public good provision, but has no effect on voting. The political message increases electoral support generally, but raises tax morale only among co-partisans. These results suggest that communication about the uses of public revenue offers a politically feasible way to increase tax morale.

**Keywords:** Tax morale, public goods, information, political economy, experiments, Mozambique

**JEL Codes:** O12, H00, P00, C93

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# 1 Introduction

Raising tax revenue is vital for development, but efforts by governments in low-income countries to improve tax collection are constrained by low state capacity and political opposition (Besley & Persson, 2013, 2014). The resources necessary for effective enforcement and credible deterrence are, paradoxically, often out of reach for cash-strapped governments (Pomeranz & Vila-Belda, 2019; Besley & Persson, 2009). Even where it is fiscally feasible, ramping up enforcement can provoke political resistance which vulnerable governments prefer to avoid (Bird et al., 2008; Fuest et al., 2024; Foremny & Riedel, 2014). Low-cost, politically feasible revenue interventions are therefore of particular value.

Tax morale — citizens’ willingness to pay taxes voluntarily — represents an important margin for increasing revenues in such contexts. As typically understood, tax morale depends on the reciprocity inherent in the social contract, by which the government uses citizens’ contributions to provide public goods (Luttmer & Singhal, 2014; Locke, 1689).<sup>1</sup> In theory, informing citizens about the quality of public goods could raise tax morale among those who update their beliefs positively (Besley, 2020). Reciprocity also depends on political legitimacy (Levi, 1988). Informing citizens about the necessity of tax revenues for achieving political objectives could raise tax morale among those who share the objectives (Cullen et al., 2021). This may be particularly relevant when political frictions exist between local and central governments (Brollo & Nannicini, 2012).

In this paper, we experimentally study how information about public good provision and/or local political autonomy affects tax morale and political support among property owners in the city of Quelimane, Mozambique. Quelimane is emblematic of the challenges faced by local tax-collecting jurisdictions around the world. Its population is about 500,000, with rapid population growth putting pressure on the public goods under its jurisdiction (roads, sanitation, and drainage). Authority to collect property taxes is decentralized, but the municipality has only a weak capacity for enforcement. This scenario is typical in the continent: over 60% of Africa’s urban population lives in agglomerations of less than a million inhabitants (United Nations, 2018). These governments usually lack the kind of administrative tax data used in studies of larger and better-resourced jurisdictions (Bergeron et al., 2024; Almunia et al., 2024). Africa’s urban population is projected to double by 2050, increasing pressure on governments like Quelimane’s to improve infrastructure and services (Saghir & Santoro, 2018). The politics of fiscal decentralization in Quelimane also resonate in many local jurisdictions worldwide where dependence on federal transfers

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<sup>1</sup>This basic concept of social contract is variously denoted in the literature with the closely-related terms “reciprocity,” “fiscal exchange,” and “benefit-based taxation.”

limits fiscal and political autonomy.

In our experiment, all participants were provided with information about property tax rates and the municipal budget prior to the cross-randomized presentation of two information treatments. The “public goods” treatment presented the idea of the social contract as the reciprocal relationship by which citizens pay taxes in exchange for public services from the state. It also included a list of recent infrastructure built by the municipal government — including roads repaired, drainage ditches dug, and sanitation improvements — with accompanying photos of the works. The “local autonomy” treatment highlighted the municipality’s budget dependence on the central government and the constraints this placed on its political and fiscal autonomy. The message drew on language used in political speeches by the incumbent opposition-party mayor, and included photos of him in speeches and rallies to highlight the partisan nature of the message. In addition to measuring the direct effect of each treatment, we also examine their interaction; real-world governments emit many communications, but few studies examine how different messages might enhance or interfere with each other.

Respondents constituted a representative sample of over 900 property owners in the city. Because the municipality’s existing tax rolls (and administrative data) include only a small number of high-value properties, gathering representative data is necessary for informing efforts to broaden the tax base. We first collected baseline data on respondents’ characteristics, attitudes, and past tax payments and political behavior. Where administrative data are available, they corroborate these survey measures: respondents in the few neighborhoods previously targeted by the tax authority are twice as likely to report having paid property taxes, and three times more likely to report having had their properties assessed. To reduce the risk of experimenter demand effects, we measure tax morale with survey questions as well as a behavioral response outcome: costly contributions to a real-stakes public goods game. We also include a series of questions aimed directly at eliciting experimenter demand effects, finding no effect of any treatment on these measures.

We show that information about public good provision raised tax morale, as measured by both survey responses and real payments in a public goods game (Table 2). In the control condition, 62% of respondents said it was “likely” or “very likely” they would pay the property tax if assessors came to evaluate their property. The public goods message raised this by 8.5 percentage points (14%). In the public goods game, 32% of control group participants chose to contribute a positive amount to the public good by making a mobile money transfer. The public goods treatment raised this by 9.4 percentage points, a 29% increase. This effect was entirely concentrated among respondents with low baseline experience of public

good provision, suggesting the effect is driven by respondents who update based on the information.

The local autonomy treatment had no average effect on tax morale on its own, and it attenuated the positive effect of the public goods treatment when they were combined. In fact, measures of tax morale for respondents who heard both messages were not statistically different from the control group. The exception was for strong partisans of the opposition party which governs the city: among these respondents, the local autonomy message increased contributions, both when presented alone and when combined with the public goods message. Taken together, these results suggest that taxpayers respond positively to information about public good provision, but become disillusioned when the message of government effectiveness is mixed with an overtly political message with which they do not agree.

Turning to political outcomes, we find that the public goods treatment increased satisfaction with government, but only the local autonomy treatment changed voting choices. The public goods message increased respondents' reported satisfaction with both the municipal and national governments, but had no significant effect on people's vote choice in a mock ballot exercise. Meanwhile, the local autonomy message raised the vote share for opposition parties at various levels of government. This suggests that people understood the message, but responded directly through political attitudes rather than tax attitudes.

Our paper contributes to existing work on how information about public service provision influences various aspects of citizens' relationship with the state. The evidence on prompting taxpayers in low-income countries to think in general terms about the social contract is mixed: positive effects on tax compliance in Tanzania (Collin et al., 2021), with null effects in Rwanda and Uganda (Mascagni & Nell, 2022; Cohen, 2024).<sup>2</sup> Our paper shows that providing specific information about recently provided public goods can raise tax morale, offering an important low-cost tool for poor jurisdictions to increase revenues.

We also contribute to the literature showing how public good information affects citizens' political attitudes and perceptions of government. In a study similar to ours, Acemoglu et al. (2020) show using a lab experiment that information about improvements to courts in Pakistan raised people's willingness to use them. Other work documents electoral effects of information about public service quality in Italy, Chile, and Brazil (Kendall et al., 2015; Cox et al., 2024; Dias & Ferraz, 2020).<sup>3</sup> Our paper adds to this broad body of research by examining tax morale and political attitudes within the same context, studying directly how messages about public goods and politics interact with one another on outcomes related

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<sup>2</sup>The literature on general "social contract" information messages in high- and middle-income countries is similarly mixed: positive effects in the UK and Norway (Hallsworth et al., 2017; Bott et al., 2019), null effects in Argentina, Belgium, the United States, and Uruguay (Castro & Scartascini, 2015; De Neve et al., 2021; Blumenthal et al., 2001; Bergolo et al., 2023).

<sup>3</sup>Citizen attitudes can be difficult to move, however: Khan et al. (2021) find no effect of information on past state effectiveness in Pakistan on citizens' support for policy, perceptions of state capacity, or trust in the state.

to each. Despite the natural tension between asking citizens for more taxes and their electoral support (Prichard, 2018), we are not aware of existing studies which examine effects on both outcomes in the same context.<sup>4</sup>

We build on the work relating tax morale to decentralization and fiscal federalism. Local autonomy matters for growth: Enikolopov & Zhuravskaya (2007) find that the outcomes of fiscal decentralization deteriorate when central governments dominate local governments, and Arzaghi & Henderson (2005) show a positive cross-country correlation between growth and fiscal decentralization. Recent empirical work also shows that public services improve when funded by local taxes (Gadenne, 2017; Bianchi et al., 2023). Torgler et al. (2010) find a positive correlation between local autonomy and tax morale specifically, and Güth et al. (2005) find a positive effect of decentralization on tax morale in the lab. Related research underscores that people are happier to pay taxes when they agree with what the revenue is used for (Cullen et al., 2021; Alm et al., 1993; Giacobasso et al., 2024). All of this evidence, however, comes from high- and middle-income countries, where tax revenues as a share of GDP are already relatively high. The belief that appeals to fiscal independence can raise tax morale has been documented among policymakers in the developing world (Luttmer & Singhal, 2014). Our paper provides empirical evidence of this phenomenon, at least among partisans of the local government.

Finally, we add to the body of research on raising revenues in contexts of low state capacity, summarized in a recent review by Okunogbe & Tourek (2024). Effective strategies have included incorporating new technology (Okunogbe & Santoro, 2023), enlisting local chiefs and increasing public oversight in the DRC (Balán et al., 2022; Henn et al., 2024), and leveraging trading networks in Uganda (Almunia et al., 2023). Nearly all existing work on tax compliance in low-income countries involves the revenue authorities of nations or large cities of over a million people (Almunia et al., 2024; Montenbruck, 2023; Balán et al., 2022). However, most Africans (and most of the world) live in smaller cities of under a million people (United Nations, 2018). Because these jurisdictions lack sophisticated property tax data systems, almost no existing economics literature studies them — and the lessons from higher-capacity jurisdictions may not carry over (Allcott, 2015). We show that information on public goods and local autonomy can raise tax morale and political support, offering a low-cost way for capacity-constrained governments to expand revenue collection and broaden the tax base.

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<sup>4</sup>A related body of work examines how public goods themselves affect both tax morale and voting. Various kind of public goods have been shown to increase tax compliance (Carrillo et al., 2017; Blimpo et al., 2018; Kresch et al., 2023; Gonzalez-Navarro & Quintana-Domeque, 2015; Krause, 2020); Brockmeyer et al. (2024)'s null result is an important exception. Similarly, various studies show that public goods and services win votes (Boudot-Reddy & Butler, 2024; Huet-Vaughn, 2023; Leff-Yaffe et al., 2023; Biasi & Sandholtz, 2024), though others find null or negative electoral effects (Goyal, 2023; Garfias et al., 2021; Bueno et al., 2023; Sandholtz, 2023). We show that public goods information alone can be sufficient to affect both tax morale and political attitudes.

## 2 Context

The city of Quelimane in Mozambique is typical of many urban contexts in Africa in various ways. Its population makes it comparable to the sub-million-resident cities home to the majority of urban dwellers in Africa and the world (United Nations, 2018). Like many cities in developing countries, Quelimane is growing rapidly: it has more than tripled in population since 2000, placing stress on public services (United Nations, Department of Economic and Social Affairs, Population Division, 2018). The municipal government's jurisdiction extends over local road construction, sanitation, and drainage systems — a crucial defense against frequent flooding caused by tropical cyclones (Leeffers, 2023).

Politically, Mozambique is classified as an “electoral autocracy,” along with countries representing 43% of the world's population: citizens vote in multi-party elections, but they lack many safeguards to ensure they are free and fair.<sup>5</sup> In practice, this means that the ruling party FRELIMO dominates elections at the national level, but that local elections have been successfully contested by opposition parties in a handful of jurisdictions. At the time of our study, the mayor of Quelimane was from RENAMO (the largest opposition party), having first won the municipal election in 2011.<sup>6</sup>

The vast majority of the city's budget – around 70% – comes from transfers from the central government, creating a dependency with important political ramifications given that the city is governed by an opposition party. Tax revenues make up less than 5% of the city's budget, with property taxes constituting the majority of these. Property owners in Mozambique are subject to a Municipal Property Tax (*Imposto Predial Autárquico* or *IPRA*), equivalent to 0.4% of the assessed value of the property for residential properties and 0.7% for commercial properties.

The municipal government's capacity for enforcement is minimal. In 2020, the most recent full year for which data are available, the Finance Department of the municipality received property tax payments from 515 contributors, for a total of 6.8 million meticaís (USD 105,079). Figure A.1 in the Appendix shows the sources of Quelimane's revenues for 2015-2020.

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<sup>5</sup>This classification comes from the V-Dem (Varieties of Democracy) Institute's “Regimes of the World (RoW)” classification, which includes 4 categories: closed autocracy, electoral autocracy, electoral democracy, liberal democracy (Coppedge et al., 2024). Similarly, Mozambique is rated as “partly free” by Freedom House, and an “Open Anocracy” in the categorization of Polity IV (Freedom House, 2023; Marshall et al., 2023).

<sup>6</sup>The current mayor was first elected in 2011 as a candidate of the MDM, another (smaller) opposition party, but joined RENAMO ahead of the 2018 municipal election cycle.



## 3 Data and Design

### 3.1 Sampling

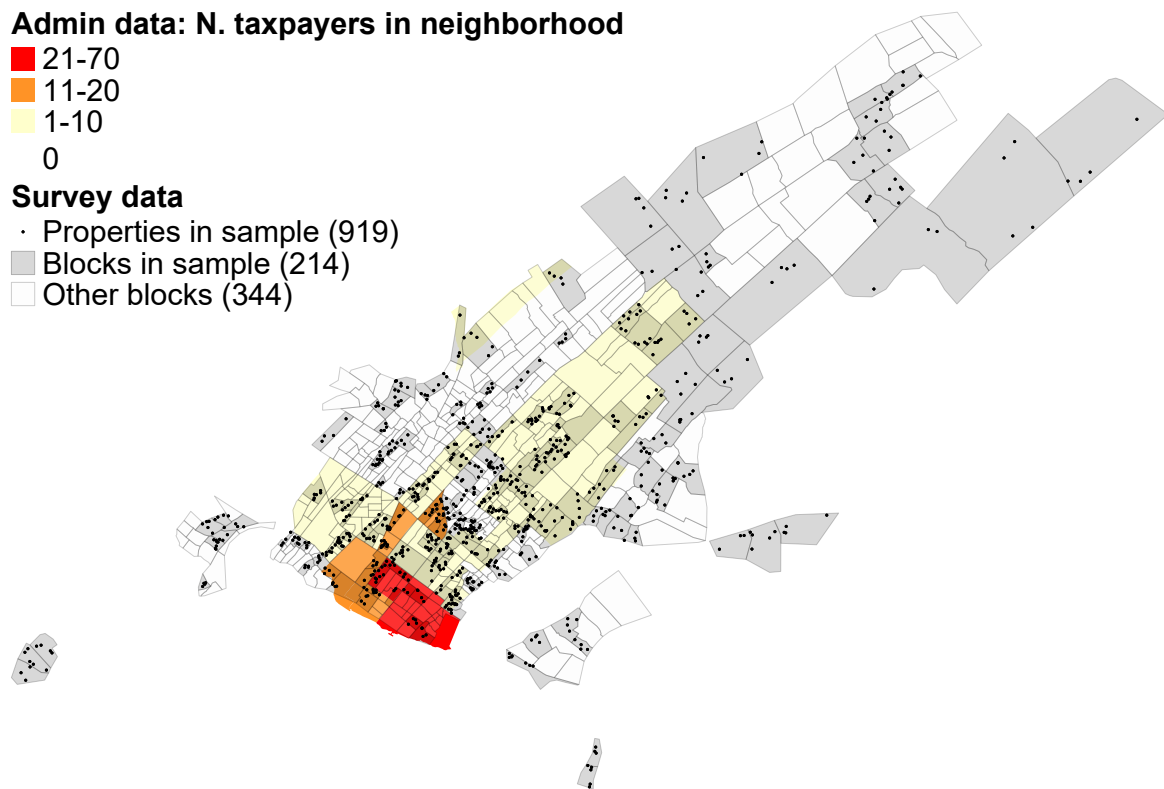
To build evidence on municipal tax morale in Quelimane, we surveyed a representative sample of property owners. The city is divided into 5 Administrative Posts (*Postos Administrativos*), which are further subdivided into 51 neighborhoods (*bairros*), which in turn are further subdivided into 558 blocks (*quarteirões*). We first selected a random sample of blocks from which to sample respondents. We then placed at least four randomly chosen points within each block's boundaries to indicate which properties were to be surveyed. When a point was not on an identifiable property, or on a property where no owner was available to interview, enumerators followed a pre-codified random walk procedure until arriving at a property where an eligible respondent was available to interview. The final analysis sample, representative of the properties in the city, consists of 922 properties in 214 blocks. The sampled respondents were surveyed over the course of about two weeks in November/December of 2022. The survey took about one hour.

### 3.2 Comparing survey and administrative data

Although available administrative data in Quelimane are minimal, they can be used to validate survey responses. In 2020, property taxpayers came from only 22 of the city's 51 neighborhoods, though only 44% of records can be mapped due to incomplete address data. Among these taxed properties, 82% of revenue (and 66% of contributors) came from just five neighborhoods in the downtown area. (By contrast, just 13% of our representative sample reside in these high-tax neighborhoods.) Accordingly, our respondents in these neighborhoods are twice as likely to report having paid IPRA in the last year, and three times as likely to report having had their property assessed by municipality technicians.

Figure 1 maps the sampled blocks and properties, as well as the intensity of tax collection by neighborhood.

Figure 1: Surveyed properties



Black dots show the locations of surveyed properties superimposed on the city of Quelimane, Mozambique. (Three respondents who consented to participate but not to have their location recorded are excluded from the map.) Gray blocks are those randomly selected to have properties sampled; unsampled blocks are white. The 51 neighborhoods in the city are shaded according to the number of identifiable individual contributors they contain in 2020 administrative data from the Department of Finances.

### 3.3 Survey

Our survey provides representative data on property owners, a rare thing in medium-sized jurisdictions like Quelimane. In addition to basic demographic characteristics, the survey measured respondents' beliefs and attitudes about the tax system – for example, whether and when they had been asked to pay property taxes, whether they thought rates were fair, how well they believed the system worked, and how many of their neighbors and fellow residents they thought were paying taxes. We also included a battery of questions about respondents' trust in the government (mostly drawing on standard wording from the Afrobarometer), as well as a set of questions about their experience with and knowledge about public services relating to the social contract. Table 1 presents summary statistics.

These descriptive statistics illuminate some characteristics of the population. Over half (59%) of property owners are women. About 18% are Muslim, compared to 19% for Mozambique as a whole (U.S. Department of State, 2023). About half of respondents were born in Quelimane. Eighty-four percent are literate, and 44% finished secondary school.<sup>7</sup> Employment situations vary widely, with significant minorities in professional occupations, in agriculture, and not working at all. Respondents' reported weekly income averages 31 USD (compared to a weekly GDP per capita of 12 USD in Mozambique as a whole, according to The World Bank (2024)).

The majority of dwellings were built by their current owner (69%), and nearly all are owner-occupied. The average dwelling houses five inhabitants. Only about half have any form of title documentation. Dwelling quality also varies widely: most have metal roofs, but a significant minority (37%) have earthen floors.

Some striking facts about tax collection in the municipality also emerge:

- Tax information is minimal. Only 26% of respondents are familiar with the acronym used by the municipality to denote property tax (*IPRA*). The average resident believes the annual tax rate to be 37 times higher than the actual one (15% of the value of the property, compared to the true rate of 0.4% for residential properties).
- Tax compliance is low. Only 17% of property owners report having paid property tax in the past year. State capacity is a likely bottleneck: only 8% report that their property has ever been evaluated. The average resident believes that about 24% of property owners in the city paid property tax in the last year.
- Tax morale appears relatively high. One measure of this is that the number of people who report paying property tax is more than double that which reports having been assessed. Another is that beliefs about others' compliance are nearly double the actual reported compliance; willingness to pay taxes has been shown to correlate negatively with the number of people free-riding (Güth et al., 2005). Attitudes toward taxation are broadly favorable. Knowledge that the municipality has the authority to collect property taxes is nearly universal, 57% think the government uses tax revenues well, and 68% prefer a higher-tax, higher-service equilibrium. This may be related to widespread acknowledgment of poor public service provision: for each of the three main services

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<sup>7</sup>This is comparable to nationwide rates of lower secondary completion for girls (41%) and boys (44%) (UNESCO Institute for Statistics (UIS), 2024).

Table 1: Summary Statistics

	Mean	SD	N
<b>Demographics:</b>			
Female	0.59	0.49	922
Muslim	0.18	0.39	921
Born in Quelimane	0.46	0.50	922
Literate	0.84	0.37	922
Finished secondary school	0.44	0.50	922
Employment: professional	0.15	0.36	919
Employment: agriculture	0.15	0.36	919
Unemployed	0.19	0.40	919
Weekly income (USD)	30.71	81.82	793
<b>Property:</b>			
Owner lives at property	0.98	0.15	921
Has any property document	0.55	0.50	922
Built by current owner	0.69	0.46	922
Inhabitants of house	5.40	2.26	911
Earthen floor	0.37	0.48	922
Metal roof	0.90	0.30	922
<b>Taxes:</b>			
Muni. has authority to tax property	0.90	0.30	922
Gov. uses tax revenue well	0.57	0.49	922
Prefers higher taxes and better services	0.68	0.47	922
Has heard of muni. property tax	0.26	0.44	922
Property ever assessed	0.08	0.27	922
Paid property tax in last year	0.17	0.37	922
Belief: share of neighbors paying prop. tax last yr	0.32	0.35	694
Belief: share of city property owners paying prop. tax last yr	0.24	0.26	692
Belief: Property tax rate	15.33	24.12	876
<b>Services:</b>			
Belief: Muni. budget (USD/capita/yr)	174.90	1319.28	614
Belief: share of muni. budget from federal transfers	0.33	0.29	626
Gov 'never' collects garbage	0.62	0.49	922
Gov 'never' repairs street	0.55	0.50	922
Gov 'never' repairs drainage ditches	0.55	0.50	922
<b>Politics:</b>			
'Never' discusses politics	0.58	0.49	922
Belief: share of city property owners who voted FRELIMO in 2018	0.32	0.28	763
Voted in 2018 municipal election	0.82	0.39	922
Voted FRELIMO in 2018	0.50	0.50	680
Voted in 2019 national election	0.76	0.43	922
Voted FRELIMO in 2019	0.63	0.48	650

in the municipality’s ambit (garbage collection, street repair, drainage repair), large majorities report that the last time the government provided that service on their street was “never.”

The survey also sheds light on political attitudes. A majority (58%) say they never discuss politics, which may be indicative of the sensitive nature of discussing politics in Mozambique. That said, stated support for the national-level ruling party (FRELIMO) among property owners is strong — perhaps surprisingly, given that the opposition RENAMO party controls the city government. Half of respondents report having voted FRELIMO in the most recent municipal election; nearly two-thirds of respondents report the same when considering the most recent national election. However, the average respondent believes that only about 32% of other property owners voted for FRELIMO in the most recent municipal election

### **3.4 Experimental design**

Survey respondents were randomized at the sampling stage into one of four treatment arms corresponding to messages that would be presented within the context of the survey. This randomization procedure was implemented stratifying at the block level: within each block, each of four sampled properties was allocated a different treatment condition. A quarter of the surveyed respondents/properties received information about Quelimane’s recent achievements in public good provision; a quarter received information about how municipal tax collection increases the municipality’s fiscal and political autonomy; a quarter received both messages; and a quarter received neither. The treatments provided new information to respondents: large majorities in each group reported that they learned something new (62% for the public goods message, and 64% for the local autonomy message). The full text of the messages, in their original Portuguese as well as English translations, can be found in Section B. The experiment pre-registration (ID# AEARCTR-0010628) can be found at <https://www.socialscienceregistry.org/trials/10628>.

#### **3.4.1 Control condition**

All experimental participants received a message providing information about property taxes; for control participants, this is the only message they received. The message described the property tax rate for residential and commercial properties. It clarified that paying the property tax is necessary to sell the property, and mentioned that property taxes contribute to the municipality’s budget, which is about 500 meticaís (USD 7.80) per citizen per year. (The average resident at baseline believed the municipal budget

to be over 20 times higher, at about USD 175 per capita per year.)

### **3.4.2 Public goods condition**

The public goods treatment condition contained a message relating taxes to the social contract: the agreement that citizens pay taxes in exchange for public services from the government. The message mentioned a number of major public works undertaken by the government in the last 10 years (since the current mayor was elected), including paved and resurfaced roads; construction and maintenance of drainage ditches; expansions of garbage collection services; construction of libraries, a school, and a market; and the regularization of property rights.

This treatment also included the showing of photos, through the enumerator's data collection tablet, depicting some of the public goods provided by the municipality: workers installing a traffic light, firefighters standing in front of a new fire engine, a backhoe cleaning out old drainage ditches, and a stretch of new drainage ditches dug alongside a paved road. (See Figure B.1.)

We hypothesize that this information can raise tax morale, especially among respondents for whom the information updates their existing beliefs about public good provision. It can also raise political support for incumbents.

### **3.4.3 Local autonomy condition**

The local autonomy treatment condition provided a political message which highlighted the municipality's need for tax revenue to strengthen its autonomy from the central government. Because Quelimane is one of the few municipalities in Mozambique controlled by the opposition party, the central government can create problems for local public service delivery by withholding transfer funds for political reasons. The message stated that 70% of the municipal budget comes from the central government (the average respondent at baseline believed this figure to be 33%), and that this fiscal dependency can create political dependency, a potential problem for enacting the public policies that best serve the local population. Similar language has been used by the incumbent mayor in political speeches in the city.

The partisan nature of this message was underscored by the four images shown to respondents, which depicted the incumbent mayor engaging in political speeches or his trademark bicycle rallies. (See Figure B.2.)

We hypothesize that this information can raise tax morale for respondents who share the political objectives of the opposition party which governs the municipality (RENAMO). It can also raise political

support for the opposition.

### 3.5 Outcome data

We collected outcome variables at the end of the survey, after the randomized information was provided. In this section we describe our measures of tax morale and political support.<sup>8</sup>

#### 3.5.1 Tax morale measures

Our primary survey measure of tax morale was derived from the respondents' answer to the question "If assessors came to evaluate your property, how likely is it that you would pay your property tax?" The corresponding variable we construct is a binary depiction of likelihood of paying, which takes a value of one if respondents answered they were "Likely" or "Very likely" to pay.

We also invited respondents to play a public goods game with real stakes. This standard game is designed to mimic the structure of tax payment and service provision, gauging respondents' willingness to contribute to a productive endeavor with payoffs to other participants beyond oneself. In our context, players were offered an endowment of 100 meticaís (about USD 1.60) — slightly higher than the median respondent's daily household income. We transferred this amount to players via mobile money before explaining the rules of the game. This ensured that choosing to contribute in the game would have a direct and tangible cost for the player. It also made clear to respondents that the initial endowment they received was not contingent on their choice in the game, reducing the likelihood of experimenter demand effects. Players were then placed in a group with nine other random and unknown survey respondents. Each player chose how much of their 100 meticaís to contribute to a central pot labeled the "public good." The central pot was then doubled by the research team and redistributed equally among the 10 players, regardless of how much each contributed. Our main behavioral game-based measure of tax morale is a binary variable which takes a value of one if respondents contributed a positive amount in the public goods game.

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<sup>8</sup>Our experimental registration pre-specified another outcome variable: a dummy for whether respondents sent a text message to a provided number to request more information or a visit from a tax assessor (see <https://www.socialscienceregistry.org/trials/10628>, registry ID # AEARCTR-0010628). Full details of the script of this behavioral message are given in Appendix A.2. Less than one percent of the sample ended up sending a text message, with no detectable difference across treatment arms. We report these results in Table A.1.

### 3.5.2 Political attitudes and voting measures

Our survey asked respondents not only about which parties and candidates they had voted for in previous elections, but also which parties and candidates they planned to support in upcoming elections. Because questions about electoral choices can be sensitive and not all respondents wish to answer, we supplemented these survey questions with a behavioral measure, previously implemented in [Gràcio & Vicente \(2021\)](#). Enumerators carried a mock “ballot box:” a clear plastic box with a slot in the top, filled with folded mock ballot papers. Near the end of the survey, each respondent was handed a paper mock ballot, and asked to privately tick the box next to the candidate she preferred at the municipal, provincial, and national levels. Respondents were then asked to fold the paper, without the enumerator seeing it, and place it in the slot in the ballot box along with the other mock ballots. This procedure was intended to increase respondents’ willingness to answer truthfully. The mock ballot handed to the respondents carried a mark that allowed enumerators to later open the box and identify the respondent’s mock ballot. This behavioral measure was highly correlated with survey responses on voting preferences, but appears to have captured some extra information indicative of reluctance among respondents to vocalize opposition to the ruling party.<sup>9</sup>

## 3.6 Empirical specification

Equation 1 presents the empirical specification we used to measure the causal effect of the information treatments on outcome variables:

$$Y_{ib} = \alpha_b + \beta_1 PublicGoods_i + \beta_2 LocalAutonomy_i + \beta_3 PublicGoods_i \times LocalAutonomy_i + \varepsilon_{ib} \quad (1)$$

$\alpha_b$  represent fixed effects for the city blocks within which randomization took place,  $PublicGoods_i$  is an indicator for whether respondent  $i$  heard the Public Goods message, and  $LocalAutonomy_i$  is an indicator for whether respondent  $i$  heard the Local Autonomy message.

Balance checks in Table A.2 show that pre-treatment characteristics do not generally differ between treatment and control groups. The number of significant differences we observe between the groups is consistent with what would be expected by random chance: of 105 tests, 5 (4.8%) are significant at the 10% level, and 2 (1.9%) are significant at the 5% level.

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<sup>9</sup>The ballot garnered slightly more responses than the survey question (93% vs. 90%). Among respondents who provided both measures for the national elections, 9% of responses differed across the two measures, and support for the ruling party was slightly lower in the ballot than the survey question (47% to 49%). Among those who declined to give an answer to the survey question, support for the ruling party using the ballot measurement was much lower: 34%.



## 4 Results

### 4.1 Effects on tax morale

Our first result is that information on public good provision raised respondents' tax morale. Table 2 shows estimates of the causal effect of the information treatments on survey responses and public goods game contributions. The public goods message increased the likelihood respondents reported being "likely" or "very likely" to pay the property tax if assessors came to their property. From a control group mean of 61.8%, this message increased the proportion by 8.5 percentage points (pp), or 13.8%.<sup>10</sup> Confirming these positive effects on survey measures, treated respondents were also 9.4 pp more likely to contribute a positive amount in the public goods game – an increase of 29.0% off a base of 32.4%. The effect of this message on the total amount respondents contributed was large and positive (2.3 meticaís from a base of 13.4 in the control group) but not statistically significant.

We also show that the local autonomy message alone had no significant effect on either measure of tax morale. Moreover, it appears to have counteracted the effect of the public goods message: the interaction effect of the two treatments is consistently negative and large. Although this coefficient itself is not statistically significant, the group which received both the public goods and local autonomy messages is statistically indistinguishable from the control group on these tax morale outcome measures.

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<sup>10</sup>Figure A.2 in the appendix shows that the public goods treatment produced a rightward shift in the distribution of responses to this question.

Table 2: Effects of treatment on tax payment intentions and public goods contributions

	Likely to pay property tax	Public goods game: contributed	Public goods game: amount (meticaïs)
Public goods	0.085** (0.041)	0.094** (0.039)	2.311 (2.114)
Local autonomy	0.029 (0.041)	0.025 (0.039)	0.289 (2.110)
Public goods × Local autonomy	-0.090 (0.058)	-0.059 (0.056)	-1.998 (2.985)
N	922	922	922
Mean (control group)	0.618	0.324	13.400
p-val: T1=T2	0.174	0.080	0.335
p-val: T1 + T2 + T1 × T2 = 0	0.571	0.129	0.776

Coefficients from the regression specified in Equation 1, with standard errors shown in parentheses. 'Likely to pay property tax' indicates that the respondent answered 'Very likely' or 'Likely' to the question 'If assessors came to evaluate your property, how likely is it that you would pay your property tax?' 'Public goods game: contributed' indicates that the respondent contributed a positive amount in the public goods game. 'Public goods game amount: meticaïs' denotes the amount of meticaïs the respondent contributed in the public goods game. All regressions include block fixed effects. \* p<0.10, \*\* p<0.05, \*\*\* p<0.01

#### 4.1.1 Heterogeneity by baseline public good provision and partisan affiliation

Because people's reaction to information likely depends on how it interacts with their existing beliefs, we next test whether the information treatments affects respondents heterogeneously along these dimensions.

Citizens with less direct experience of municipal public good provision may be more likely to update based on public good information. Our survey asked respondents about the frequency of provision of the three main public services within the municipality's purview: garbage collection, drainage, and road construction/maintenance.<sup>11</sup> We build dummies for whether respondents answered "never" for each of these variables, then create an index based on the first factor of the correlation matrix of these dummies (pairwise correlations between these variables are quite high, ranging between .42 and .65). We then split the sample into "high" and "low" baseline public good provision at the median of this index. We regress the dummy for contributing in the public goods game on the full set of treatment condition dummies (public goods, local autonomy, or both) — separately for respondents with high and low baseline public goods.

Figure 2a shows that the positive effect of the public good message on tax morale is concentrated among respondents who report low public good provision from their personal experience at baseline.

<sup>11</sup>The wording of the question was "When was the last time someone from the government [collected trash on your street; worked on building or cleaning/repairing the drainage ditches on your street; worked on building or repairing the access roads to your home]?" Options were "One week ago or less," "One month ago," "One year ago," "Several years ago," "Never," "Don't know."

This is consistent with taxpayers updating their priors in response to new information about public good provision.

The local autonomy treatment may be expected to be particularly persuasive for citizens whose own political beliefs predispose them to share the goals of the opposition party which governs the municipality (RENAMO).<sup>12</sup> We identify as “RENAMO partisans” the respondents who report having voted for RENAMO party candidates in both the 2018 municipal elections and the 2019 national elections. We regress the dummy for contributing in the public goods game on the full set of treatment condition indicators — separately for RENAMO partisans and all other respondents.

Figure 2b shows that, among RENAMO partisans, the effect of the public goods message is even larger than for the general population, and that the effect of the local autonomy message is positive and significant as well ( $p < 0.1$ ). Furthermore, the local autonomy message appears not to have diminished the effect of the public goods message as in the overall sample. This is consistent with the local autonomy message being effective for those whose political goals incline them toward greater empowerment of the municipal government.

These results suggest that both information treatments’ effects were concentrated among those whose prior beliefs predisposed them to be affected by the information.

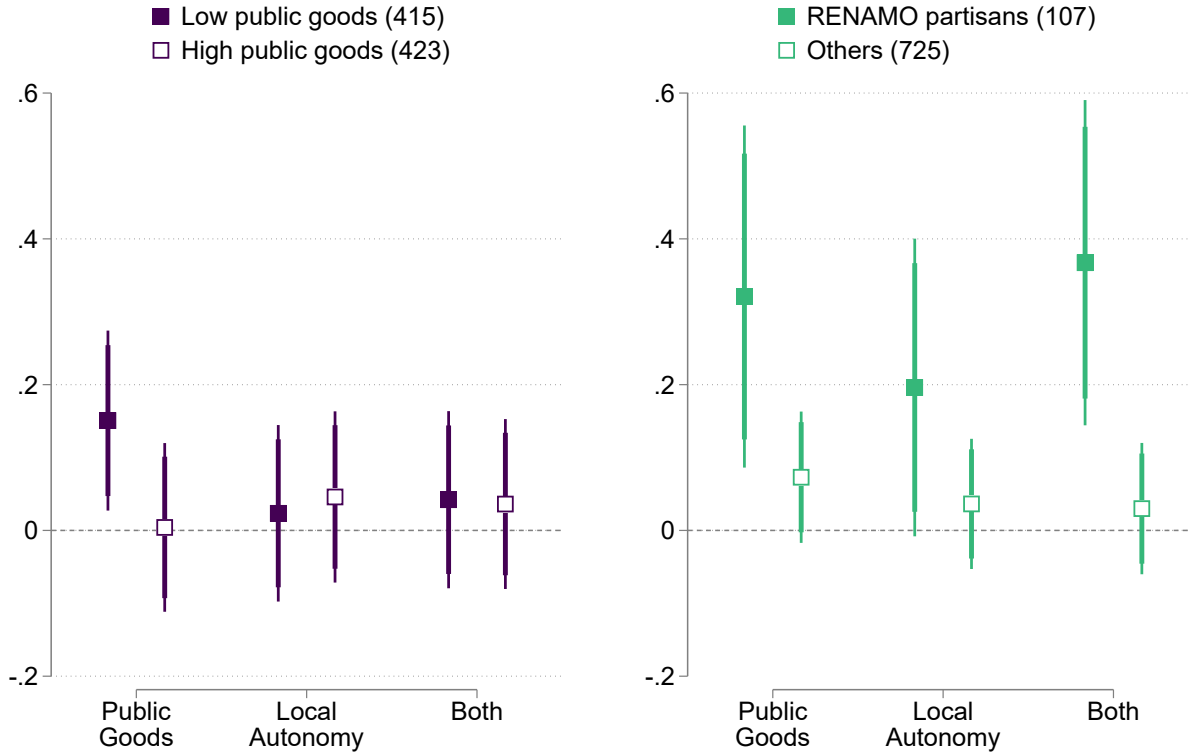
## 4.2 Effects on politics

Table 3 shows the treatment effects on political outcomes. The public goods message raised respondents’ level of satisfaction with both the municipal government of Quelimane and the national government of Mozambique, by 7.7 and 9.9 pp respectively. The fact that the information increased satisfaction with both levels of government is surprising, given that the municipal government which was responsible is controlled by the main opposition party (RENAMO) while the national government is controlled by FRELIMO. This may reflect the ruling party’s adeptness at claiming credit for public goods (Aker et al., 2017; Cruz & Schneider, 2017). It may also indicate confusion about attribution of public goods to the correct level of government, which perhaps helps explain the non-effect of the local autonomy message on tax morale except among core RENAMO supporters. As with the tax morale outcomes, the local autonomy message had no impact on government satisfaction its own, and again negated the positive effect of the public goods message.

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<sup>12</sup>Evidence from the United States suggests that individual citizens’ tax morale increases when a president from their own party is in power (Cullen et al., 2021).

Figure 2: Effects on contribution to public goods (game)



(a) By baseline public good provision

(b) By partisanship

Figure 2a shows coefficients and corresponding confidence intervals of 95% and 90% from regressing an indicator for whether respondents contributed to the public goods game on treatment group dummies, separately for respondents scoring below vs. above the median on an index of baseline public good provision. Figure 2b shows coefficients and corresponding confidence intervals from the same regression, separately by whether respondents report having voted for RENAMO in the 2018 municipal and 2019 national elections, or not. In both panels, dummies are included for “public goods,” “local autonomy,” and “both” rather than plotting the interaction term; this is to facilitate comparing outcomes for each group relative to the control group. City block fixed effects are included in all regressions. The correlation between the above-median baseline public goods dummy and the RENAMO voter dummy is 0.015.

We note however that respondents’ own stated voting intentions as measured through the mock ballots were less responsive to the public goods message than to the local autonomy message. Local autonomy moved them towards RENAMO or MDM (the national-level opposition parties), not FRELIMO. Note that in the control group, as expected, support for the opposition is higher at the municipal level (54%) than in the provincial or national level (47% and 44%, respectively). The local autonomy message increased support for the opposition in both provincial and national governments to the level enjoyed by the municipal government. Support for the ruling party fell commensurately (see Table A.4). While these effects are only significant for the local autonomy message, point estimates are also positive for the public goods message, and not significantly different from the local autonomy coefficients. Table A.3 shows similar results on voting intentions as measured by survey responses.

Table 3: Effects of treatment on political outcomes

	Satisfaction with government		Vote for RENAMO or MDM		
	Municipal	National	Municipal	Provincial	National
Public goods	0.077** (0.038)	0.099** (0.043)	0.029 (0.045)	0.061 (0.046)	0.062 (0.046)
Local autonomy	0.001 (0.038)	-0.003 (0.043)	0.047 (0.045)	0.080* (0.046)	0.112** (0.046)
Public goods × Local autonomy	-0.080 (0.054)	-0.125** (0.061)	-0.045 (0.063)	-0.084 (0.065)	-0.096 (0.064)
N	922	922	863	856	858
Mean (control group)	0.707	0.462	0.543	0.466	0.440
p-val: T1=T2	0.043	0.018	0.697	0.675	0.265
p-val: T1 + T2 + T1 × T2 = 0	0.957	0.515	0.491	0.217	0.088

Coefficients from the regression specified in Equation 1, with standard errors shown in parentheses. ‘Satisfaction with government’ indicates that the respondent answered ‘Very satisfied’ or ‘Satisfied’ to the question ‘In general, are you satisfied with political governance in [the municipality of Quelimane / Mozambique]?’ ‘Vote for RENAMO or MDM’ indicates that the respondent submitted a ballot on which they checked the box next to ‘RENAMO’ or ‘MDM’ for the stated level of government (defined for respondents who submitted any ballot). All regressions include block fixed effects. \* p<0.10, \*\* p<0.05, \*\*\* p<0.01

### 4.3 Testing for experimenter demand effects

To test whether our results are driven by experimenter demand effects, we included questions in the survey which asked respondents directly if they agreed with the hypotheses we were testing. After presenting the treatment information, we asked respondents whether the information provided was likely to motivate themselves or their neighbors to pay property taxes. If respondents’ answers were driven

by their perceptions of experimenter demand, we would expect treatment to have large effects on these questions. In fact, no treatment had any effect on any of these measures (see Table A.5).

## 5 Conclusion

Increasing municipal revenues in the developing world is of vital importance for improving the quality of public goods and services, and ultimately for boosting economic growth. But governments face both resource and political constraints to strengthening enforcement, pointing to the necessity of finding ways to raise voluntary tax compliance (tax morale). This need is especially pressing for smaller jurisdictions which lack sophisticated data collection infrastructure.

In this paper, we show that communication highlighting the local government's existing efforts at providing public goods can engender greater property tax morale among property owners, especially those for whom the information updated beliefs given their own poor experience of public good provision. The public goods communication raises satisfaction with government, and may increase partisan support, though these estimates are noisy. Meanwhile, highlighting local political autonomy increases support for the opposition party but only raises tax morale for strong co-partisans, reversing the gains of the public goods message for everyone else.

These results carry important policy implications for governments seeking to raise revenue without losing political support. Effective communication about the government's public goods successes offers a relatively low-cost way to provide a positive shock to people's perceptions of the social contract. Our results about the heterogeneity of effects by citizens' prior experience of public goods suggest that targeting information to those most likely to update their beliefs could make these interventions even more cost-effective. Ideally, this positive shock could lead to a virtuous cycle, as governments use increased revenues to improve the quality of public goods and services, which in turn further boosts citizens' tax morale. Together, these results hint that incumbent politicians may benefit from separating messages about the social contract and politics: while public goods marketing can be used for boosting tax adherence in times of policy-making, underscoring political autonomy should probably be left to the political campaign periods. Political communication is art.

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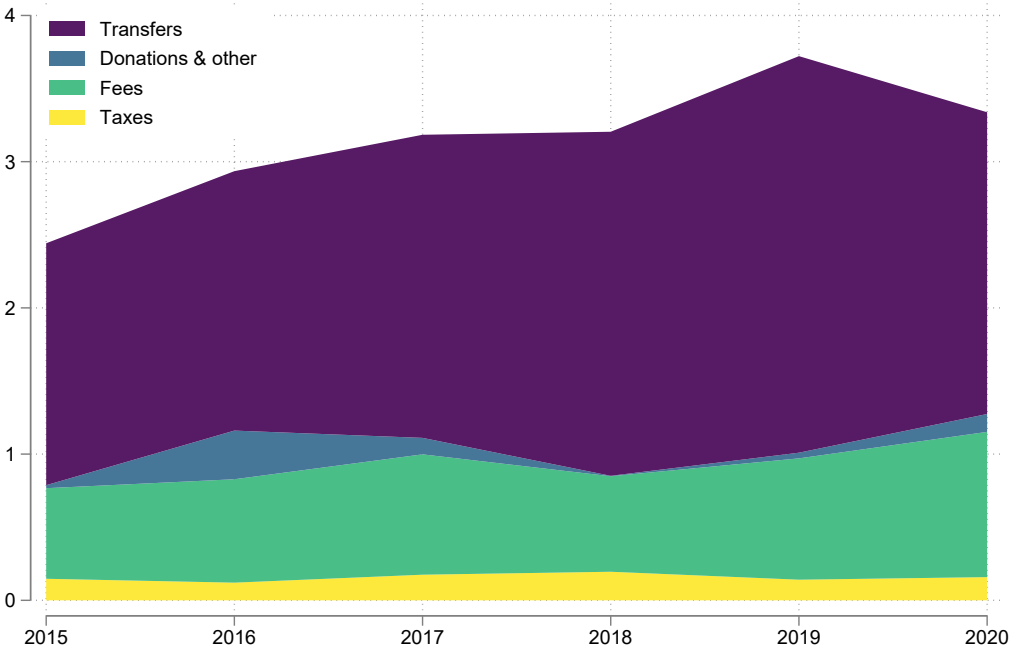
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# A Additional tables and figures

## A.1 Municipal budget composition

Figure A.1: Quelimane’s revenue sources (million USD)



Data from Quelimane Revenues Commission. Exchange Rate: 1 USD = 64.12 MZN (as of December 2022).

## A.2 Outcome: text message requesting information or visits

At the end of the survey, we provided a card with a phone number to which respondents could send a text message if they wanted more information or if they wanted to request a visit from tax collectors. This is the language with which this information was presented:

Portuguese	English
<p>Mais uma vez, agradecemos ao Sr/a por ter dedicado o seu tempo a responder a esse inquérito sobre impostos.</p>	<p>Once again, we thank you for taking the time to respond to this survey on taxes.</p>
<p>Vamos deixar consigo um cartãozinho com um contacto que pode usar para obter mais informações.</p>	<p>We will leave with you a card with a contact number that you can use to obtain more information.</p>
<p>Se o/a Sr/a gostaria de receber mais informações sobre como os impostos são coletados e utilizados em Quelimane, pode enviar a palavra "INFO" para esse número (XX XXX XXXX).</p>	<p>If you would like to receive more information about how taxes are collected and used in Quelimane, you can send the word "INFO" to this number (XX XXX XXXX).</p>
<p>Apesar de nós sermos uma equipa de investigação independente, estamos a conduzir esse inquérito com a autorização do município. Se desejar, nós podemos informar o município de que gostaria de receber uma visita dos técnicos da Comissão de Registo de Fontes de Receita para avaliar a sua propriedade. Se quiser o fazê-lo, basta enviar uma mensagem a dizer "VISITA" para esse número (XX XXX XXXX).</p>	<p>Although we are an independent research team, we are conducting this survey with the municipality's authorization. If you wish, we can inform the municipality that you would like to receive a visit from the Revenue Sources Registration Commission's technicians to assess your property. If you would like to do this, simply send a message with the word "VISITA" to this number (XX XXX XXXX).</p>

Table A.1 shows that only a very small number of respondents chose to send these texts, with no distinguishable difference across treatment arms.

Table A.1: Effects on text message requesting information or visits

	Text message: Request info	Text message: Request visit	Text message: Any request
Public goods	-0.004 (0.008)	0.000 (0.005)	-0.004 (0.009)
Local autonomy	-0.003 (0.008)	0.008 (0.005)	0.002 (0.009)
Public goods $\times$ Local autonomy	0.006 (0.012)	-0.004 (0.008)	0.006 (0.013)
N	922	922	922
Mean (control group)	0.009	0.000	0.009
p-val: T1=T2	0.842	0.140	0.517
p-val: T1 + T2 + T1 $\times$ T2 = 0	0.912	0.406	0.705

Coefficients from the regression specified in Equation 1, with standard errors shown in parentheses. The first two columns indicate that the respondent sent a text message to the provided number to request further information about property taxes or a visit from a municipal tax assessor, respectively. The third column indicates that the respondent sent a text message requesting at least one of the above. All regressions include block fixed effects. \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

### A.3 Balance

Table [A.2](#) tests balance on baseline characteristics across treatment arms.

Table A.2: Balance

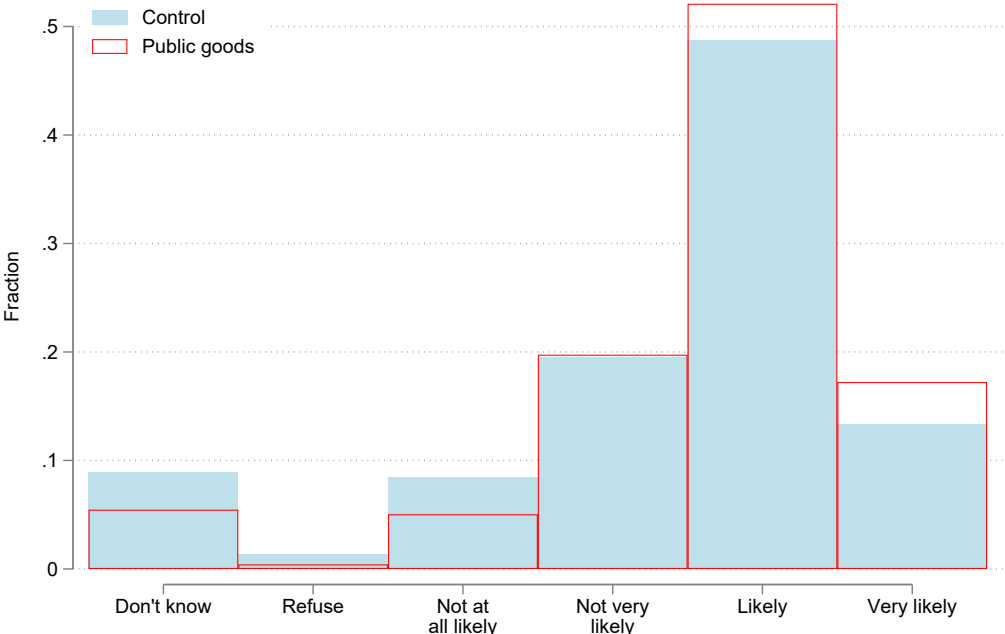
	Control group		Difference with ...			N
	Mean	(SE)	Public goods	Local autonomy	Both	
<b>Demographics:</b>						
Female	0.636	(0.032)	-0.104**	-0.032	-0.067	922
Muslim	0.160	(0.024)	0.037	0.000	0.035	921
Born in Quelimane	0.467	(0.033)	-0.010	0.004	-0.005	922
Literate	0.831	(0.025)	-0.005	0.029	0.003	922
Finished secondary school	0.436	(0.033)	-0.015	0.029	0.008	922
Employment: professional	0.165	(0.025)	-0.015	-0.041	0.002	919
Employment: agriculture	0.147	(0.024)	0.002	-0.009	0.015	919
Unemployed	0.223	(0.028)	-0.051	-0.015	-0.024	919
Weekly income (USD)	26.183	(4.546)	-0.025	3.168	4.709	782
Owner lives at property	0.969	(0.012)	0.025*	0.006	-0.002	921
Has any property document	0.564	(0.033)	-0.035	-0.030	-0.018	922
<b>Property:</b>						
Built by current owner	0.698	(0.031)	-0.015	-0.004	0.005	922
Inhabitants of house	5.332	(0.136)	0.245	-0.036	0.193	911
Earthen floor	0.369	(0.032)	-0.004	0.039	-0.010	922
Metal roof	0.911	(0.019)	-0.003	-0.029	-0.002	922
<b>Taxes:</b>						
Muni. has authority	0.880	(0.022)	0.018	0.035	0.031	922
Gov. uses tax revenue well	0.587	(0.033)	-0.013	-0.006	-0.017	922
Prefer ↑ taxes, services	0.689	(0.031)	-0.024	0.027	0.005	922
Heard of prop. tax	0.213	(0.027)	0.090**	0.040	0.042	922
Property ever assessed	0.062	(0.016)	0.018	0.027	0.018	922
Paid property tax	0.151	(0.024)	0.013	0.036	0.030	922
Share neighbors paid	0.311	(0.027)	-0.020	0.024	-0.006	674
Share owners paid	0.237	(0.020)	-0.007	-0.006	-0.023	669
Belief: Property tax rate	16.589	(1.725)	-1.809	-2.317	-0.207	873
<b>Services:</b>						
Belief: muni. budget	177.242	(111.462)	43.047	41.368	-77.849	591
Share budget transfers	0.322	(0.024)	0.002	0.001	-0.021	606
Gov 'never' collects garbage	0.600	(0.033)	0.002	0.051	0.061*	922
Gov 'never' repairs street	0.524	(0.033)	0.031	0.045	0.048	922
Gov 'never' repairs ditches	0.516	(0.033)	0.074*	0.048	0.039	922
<b>Politics:</b>						
'Never' discusses politics	0.551	(0.033)	-0.013	0.059	0.037	922
Share owners FRELIMO 2018	0.322	(0.023)	-0.024	-0.012	-0.011	748
Voted in 2018 municipal election	0.836	(0.025)	-0.048	-0.023	-0.006	922
Voted FRELIMO in 2018	0.519	(0.039)	-0.035	-0.051	-0.052	663
Voted in 2019 national election	0.742	(0.029)	0.024	-0.001	0.036	922
Voted FRELIMO in 2019	0.608	(0.040)	0.030	-0.010	-0.028	638

'Control group' columns show means and standard error of means for the control group. 'Difference' columns show the coefficient from regressing each variable on a treatment dummy while limiting the sample to the control group and the public goods group, the local autonomy group, or the both group, respectively. All these regressions include block FE. 'N' column shows number of observations for which the variable is non-missing. \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$



### A.4 Effects on the distribution of likelihood to pay

Figure A.2: Histogram of responses to payment likelihood question, by treatment



Answers to the question “If assessors came to evaluate your property, how likely is it that you would pay your property tax?” for respondents assigned to control and public goods treatment arms.

## A.5 Effects on other electoral measures

Table A.3: Effects on reported voting outcomes

	Vote for FRELIMO		Vote for RENAMO or MDM		Report voting intention	
	Municipal	National	Municipal	National	Municipal	National
Public goods	-0.003 (0.047)	-0.043 (0.047)	0.028 (0.047)	0.066 (0.047)	-0.011 (0.025)	-0.031 (0.026)
Local autonomy	-0.046 (0.046)	-0.097** (0.047)	0.036 (0.047)	0.084* (0.047)	-0.011 (0.025)	-0.010 (0.026)
Public goods $\times$ Local autonomy	0.047 (0.066)	0.071 (0.067)	-0.032 (0.067)	-0.058 (0.067)	-0.027 (0.036)	0.007 (0.037)
N	830	822	830	822	922	922
Mean (control group)	0.413	0.527	0.549	0.439	0.920	0.916
p-val: T1=T2	0.347	0.245	0.868	0.701	0.995	0.405
p-val: T1 + T2 + T1 $\times$ T2 = 0	0.968	0.146	0.511	0.054	0.052	0.184

Coefficients from the regression specified in Equation 1, with standard errors shown in parentheses. 'Vote for FRELIMO' indicates that the respondent answered 'FRELIMO' to the question 'If the municipal elections were tomorrow, which party would you vote for?' (defined for respondents who did not answer Don't Know or Refuse). 'Vote for RENAMO or MDM' indicates that the respondent answered 'RENAMO' or 'MDM' to this question, with the same restriction. 'Report voting intention' indicates that the respondent gave a response to this question other than 'Don't know' or 'Refuse.' All regressions include block fixed effects. \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

Table A.4: Effects on other ballot outcomes

	Vote for FRELIMO			Submit ballot		
	Municipal	Provincial	National	Municipal	Provincial	National
Public goods	0.004 (0.045)	-0.022 (0.046)	-0.015 (0.046)	0.004 (0.021)	0.011 (0.022)	0.011 (0.022)
Local autonomy	-0.039 (0.044)	-0.074 (0.046)	-0.090* (0.046)	0.004 (0.021)	0.012 (0.022)	0.002 (0.022)
Public goods $\times$ Local autonomy	0.023 (0.063)	0.062 (0.065)	0.056 (0.065)	0.000 (0.030)	-0.009 (0.031)	-0.004 (0.031)
N	863	856	858	922	922	922
Mean (control group)	0.400	0.471	0.488	0.933	0.924	0.929
p-val: T1=T2	0.334	0.253	0.103	0.998	0.983	0.682
p-val: T1 + T2 + T1 $\times$ T2 = 0	0.796	0.474	0.295	0.714	0.530	0.700

Coefficients from the regression specified in Equation 1, with standard errors shown in parentheses. 'Vote for FRELIMO' indicates that the respondent submitted a ballot on which they checked the box next to 'FRELIMO' for the stated level of government (defined for respondents who submitted any ballot). 'Submit ballot' indicates that the respondent submitted a ballot. All regressions include block fixed effects. \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

## A.6 Testing for experimenter demand effects

Table A.5: Effects on experimenter demand questions

	Info would increase neighbors' payment	Public goods would increase own payment	Local autonomy would increase own payment
Public goods	-0.013 (0.042)	0.041 (0.041)	0.019 (0.040)
Local autonomy	0.013 (0.042)	0.035 (0.041)	-0.022 (0.040)
PG × LA	0.015 (0.060)	-0.056 (0.058)	-0.029 (0.057)
N	922	922	922
Mean (control group)	0.564	0.560	0.636
p-val: T1=T2	0.540	0.872	0.302
p-val: T1 + T2 + T1 × T2 = 0	0.713	0.618	0.434

Coefficients from the regression specified in Equation 1, with standard errors shown in parentheses. The outcome in Column 1 indicates that the respondent answered 'Very likely' or 'Likely' to the question 'Imagine you have a neighbor who doesn't pay their property taxes. If that neighbor could hear this information, how likely is it that they would be more motivated to pay IPRA?' The outcome in Column 2 indicates that the respondent answered 'Very likely' or 'Likely' to the question 'If the municipality improved public service provision, how likely is it that you would be more motivated to pay IPRA?' The outcome in Column 3 indicates that the respondent answered 'Very likely' or 'Likely' to the question 'How likely is it that the idea of the municipality having more independence relative to the central government would make you more motivated to pay IPRA?' All regressions include block fixed effects. \* p<0.10, \*\* p<0.05, \*\*\* p<0.01

## B Information treatments

### B.1 Control condition

The following text was read to all participants:

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Portuguese	English
<p>Agora queremos fornecer algumas informações úteis sobre o papel dos impostos no município, particularmente o Imposto Predial Autárquico ou IPRA.</p>	<p>Now we want to provide some useful information about the role of taxes in the municipality, particularly the Municipal Property Tax or IPRA.</p>
<p>Para propriedades residenciais, a taxa do IPRA é 0,04% do valor da propriedade. Isto quer dizer que se uma propriedade tivesse o valor de 1 milhão de meticais, o dono teria de pagar 400 meticais por ano como IPRA.</p>	<p>For residential properties, the IPRA rate is 0.04% of the property value. This means that if a property had a value of 1 million meticais, the owner would have to pay 400 meticais per year as IPRA.</p>
<p>Se for uma propriedade comercial, o valor é de 0,07% do valor da propriedade – uma propriedade comercial com o valor de 1 milhão de meticais teria de pagar 700 meticias por ano como IPRA.</p>	<p>If it is a commercial property, the value is 0.07% of the property value – a commercial property with a value of 1 million meticais would have to pay 700 meticias per year as IPRA.</p>
<p>Pagar o IPRA é necessário para vender a propriedade.</p>	<p>Paying IPRA is necessary to sell the property.</p>
<p>Esses impostos, quando forem pagos, contribuem para o orçamento do município. O orçamento do município é aproximadamente de 500 meticais por município por ano.</p>	<p>These taxes, when paid, contribute to the municipality's budget. The municipality's budget is around 500 meticais per citizen per year.</p>

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## B.2 Public good condition

The following text was read to all participants in the “public good” treatment:

Portuguese	English
<p>O “contrato social” significa que os cidadãos têm dizer sobre como os seus governos se comportam. Os cidadãos podem expressar as suas preocupações. Eles pagam impostos em troca dos serviços públicos que são oferecidos pelo governo.</p> <p>Para que o/a Sr/a tenha uma visão mais ampla do comportamento do governo, vamos fazer uma revisão de alguns dos bens públicos fornecidos pelo município nos últimos 10 anos.</p> <p>Várias das artérias críticas da cidade foram reparadas e os seus buracos tapados, por exemplo as avenidas Eduardo Mondlane, Július Nyerere, 7 de Setembro, Josina Machel, Samora Michel, Marginal, Filipe Samuel Magaia, e 25 de Junho. Várias ruas foram pavimentadas ou asfaltadas: Rua Ahmed Sékou Touré que passa no IFP; a Avenida Alberto Cassimo ligando a Sagrada e o mercado de Aquima; e outras nos bairros Kansa, Vilapita, Mapiazua, Brandão, 17 de Setembro, Sangariveira, e Manhaua, entre outras. Foram mantidas as ruas França e Pio Matos, além da manutenção de rotina de estradas de terra batida, bem como o abaulamento numa extensão de mais de 200 kms.</p> <p>Foi construída uma extensão de 22 kms de valas de drenagem, abertas e fechadas.</p> <p>Houve várias outras construções públicas, entre elas</p> <ul style="list-style-type: none"><li>• 2 Bibliotecas Municipais,</li><li>• Escola Primária Completa de Ivagalane,</li><li>• Mercado de Sangariveira.</li></ul> <p>Na área de saneamento, foram construídos:</p> <ul style="list-style-type: none"><li>• 14 Silos para o depósito dos resíduos sólidos,</li><li>• 22 poços de água para os diversos bairros,</li><li>• mais de 100 latrinas para a população carenciada.</li></ul> <p>E foram adquiridos cestos, contentores e camiões de Lixo</p> <p>Também foram atribuídos mais de 2000 DUATs.</p> <p>Agora vou mostrar algumas fotos dos bens públicos do município nos últimos anos.</p>	<p>The “social contract” means that citizens have a say in how their governments behave. Citizens can express their concerns. They pay taxes in exchange for public services that are offered by the government.</p> <p>To give you a broader view of the government’s behavior, let’s review some of the public goods provided by the municipality in the last 10 years.</p> <p>Several of the city’s critical arteries were repaired and potholes filled, for example Eduardo Mondlane, Július Nyerere, 7 de Setembro, Josina Machel, Samora Michel, Marginal, Filipe Samuel Magaia, and 25 de Junho avenues. Several streets were paved or asphalted: Ahmed Sékou Touré which passes by IFP; Alberto Cassimo Avenue connecting Sagrada and Aquima market; and others in the neighborhoods Kansa, Vilapita, Mapiazua, Brandão, 17 de Setembro, Sangariveira, and Manhaua, among others. The streets França and Pio Matos were maintained, as well as the routine maintenance of dirt roads, and the embankment in an extension of more than 200 kms.</p> <p>An extension of 22 kms of drainage ditches, open and closed, was built.</p> <p>There were several other public constructions, among them</p> <ul style="list-style-type: none"><li>• 2 Municipal Libraries,</li><li>• Complete Primary School of Ivagalane,</li><li>• Sangariveira Market.</li></ul> <p>In the area of sanitation, the following were built:</p> <ul style="list-style-type: none"><li>• 14 Silos for the deposit of solid waste,</li><li>• 22 water wells for the various neighborhoods,</li><li>• more than 100 latrines for the needy population.</li></ul> <p>And baskets, containers and garbage trucks were acquired.</p> <p>Also more than 2000 DUATs were awarded.</p> <p>Now I will show you some photos of the public goods of the municipality in the last years.</p>

**B.2.1 Public good condition photos**

Figure B.1



(a) Roads



(b) Firefighters



(c) Drains



(d) More roads

### B.3 Local autonomy condition

The following text was read to all participants in the “local autonomy” treatment:

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Portuguese	English
<p>Agora, o município tem que usar o seu orçamento para reunir todos os seus gastos, inclusivé os bens públicos que fornece aos municípes.</p>	<p>Now, the municipality has to use its budget to meet all its expenses, including the public goods that it provides to the citizens.</p>
<p>Aproximadamente 70% desse valor vem em forma de transferência do governo central. Algumas pessoas dizem que isso cria uma situação que prejudica a independência política e financeira do município. A ideia é:</p>	<p>Around 70% of this value comes in the form of transfer from the central government. Some people say that this creates a situation that harms the political and financial independence of the municipality. The idea is:</p>
<p>Quando o município depende do governo central para os fundos do seu orçamento, o governo central exerce controlo sobre o município através do controle dos fundos. Se o município está a fazer coisas que o governo central não gosta, o governo central pode reter ou atrasar os pagamentos para tentar influenciar o comportamento do município. Se os objetivos do governo central não são os mesmos que os objetivos do município, isso pode diminuir a autonomia que o município tem de traçar o seu próprio caminho quanto à política.</p>	<p>When the municipality depends on the central government for the funds of its budget, the central government exerts control over the municipality through the control of the funds. If the municipality is doing things that the central government does not like, the central government can withhold or delay payments to try to influence the behavior of the municipality. If the goals of the central government are not the same as the goals of the municipality, this can diminish the autonomy that the municipality has to trace its own path regarding politics.</p>
<p>Numa democracia, os municípes pagam impostos para que o estado funcione e aja a bem do povo. Afinal de contas, os salários dos funcionários públicos não vêm de nenhum partido político, mas do povo que trabalha para poder pagar os seus impostos.</p>	<p>In a democracy, citizens pay taxes so that the state works and acts for the good of the people. After all, the salaries of public servants do not come from any political party, but from the people who work to be able to pay their taxes.</p>
<p>Então, uma maneira importante de garantir a autonomia do município é pagar impostos para que o município tenha a capacidade de realizar os seus planos sem depender do governo central.</p>	<p>So, an important way to guarantee the autonomy of the municipality is to pay taxes so that the municipality has the capacity to carry out its plans without depending on the central government.</p>
<p>Agora vou mostrar algumas fotos tiradas em eventos do governo atual do município.</p>	<p>Now I will show you some photos taken at events of the current government of the municipality.</p>

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B.3.1 Local autonomy condition photos

Figure B.2



(a) Bikes



(b) A speech



(c) More bikes



(d) Another speech