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The social contract in Sub-Saharan African countries

Looking for opportunities to strengthen trust in government and tax compliance by analyzing citizen perception of social and tax systems

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1. Introduction

Recent analyses show that the COVID-19 is increasing the economic gap between developed and developing countries. Lower-middle and low-income countries are continuing to suffer by high inactivity rates and large losses of working hours. The negative productivity growth in these countries increased the productivity gap between advanced and developing economies, registering in 2021 the biggest difference since 2005 (ILO, 2021). The World Bank warns that while high-income countries are starting to recover, low-income and Sub-Saharan countries will register increases in poverty (Gerszon Mahler et al., 2021).

This difference is partially explained by the limited ability of developing countries to respond to the current emergency and mitigate its impact, which has, in turn, translated into income disruptions and deprivation for a significant share of households (Bundervoet & Davalos, 2021). The World Bank underlines that, during the pandemic, low- and middle-income countries are struggling to diversify their policy responses, as of now, providing mainly social assistance (which account for almost 90% of their policy measures) (Gentilini et al., 2020).

The difficulty for these countries to strengthen their social protection systems by expanding their coverage and improving the programs depends largely on their low tax capacity (Coady, 2018). Raising more domestic revenue still represents a priority for most Sub-Saharan African (SSA) countries (Drummond et al., 2012) that continue to face high rates of tax non-compliance (Ali, Fjeldstad & Sjursen 2014).

The study aims to investigate part of the causes for tax avoidnace in Mozambique, South Africa, Tanzania, Uganda and Zambia (the countries have been chosen for their availability in the SOUTHOMOD software) by applying a quantitative two-step analysis. Firstly, it will highlight possible factors contributing to non-compliance that emanate from citizens' perceptions of governance related to social and tax policy systems. Then, it will compare the findings with the actual landscape of the corresponding national systems. That is, the perceptions of the population regarding government social protection interventions will be compared to the actual existence – or lack — of social protection programs, in order to identify potential differences between these social benefits systems 'on paper' and the manner in which they are perceived by the general population. This will allow for the identification of potential issues that may be creating a gap between systems 'on paper' and citizens' perceptions, such as potential problems with information, targeting, adequacy of benefits, or others.

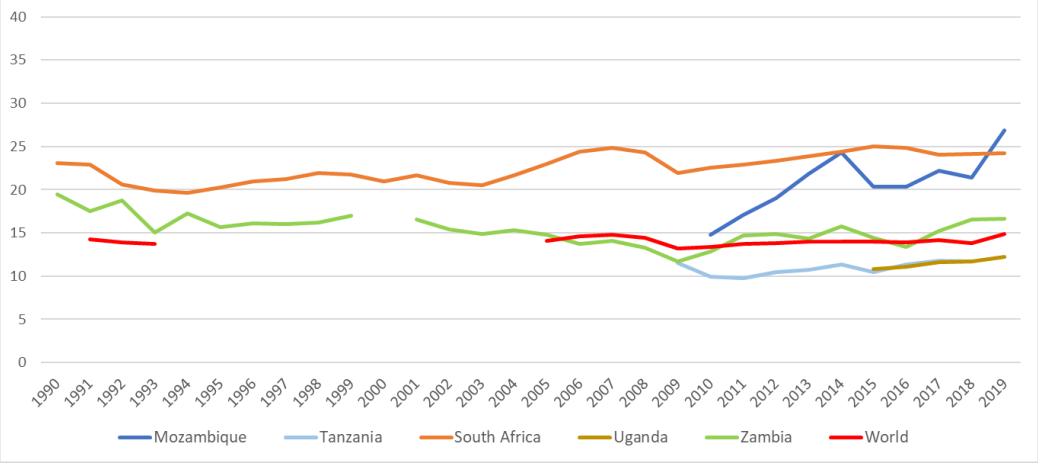
2. Tax revenues in Sub-Saharan countries

Even though in the African context the weakness of institutional capacity to design and deliver (especially at scale) social protection programmes is still a fundamental problem, this seems especially persistent in fragile contexts, provoking a paradox; the more need for social protection there is, the less the government is capable of delivering it (Holmes & Lwanga-Ntale 2012). According to the World Bank, Sub-Saharan Africa is one of the areas in the world with the highest levels of human capital and infrastructure gap. With regards to the former, the region is currently using only 40 percent of its potential human capital due to incomplete education and lack of health among the population. If the existing infrastructure gap was closed, the GDP per capita would increase by 2.6 percent per annum. However,

the World Bank's estimations suggest that Africa's infrastructure would need to exceed $ 93 billion per year in the next decade to close that gap, and even if the countries increased spending, the governments would need to generate almost $20 billion of fiscal revenues for investment in infrastructure (Graham & Bamba, 2020).

While in high-income countries the tax-to-GDP ratio ranges around 30 percent or higher, it ranges between 15-20 percent for low and middle-income countries. This gap translates into lower levels of investment in public goods, such as infrastructure and governance, provoking a cycle in which low and middle-income countries continue to have high levels of poverty because they are not able to mobilize enough revenues to provide an adequate level and quality of public goods (Bachas, Kondylis & Loeser 2021). Low tax morale and limited capacity to tax income have been identified as the two main causes (Bastagli, 2015). Out of the countries that shall be analyzed in this study, three feature tax-to-GDP ratios below the world average, while two feature a ratio of almost 30 percent (Mozambique at 26.9 percent, and South Africa at 24.2 percent respectively), and the others remained below the world average (Tanzania 11.7, Uganda 12.2 percent and Zambia, the closest of the three to the world average, 16.7) in 2019 (World Bank, 2022).

Figure 1. Tax revenue (%GDP) in Mozambique, Tanzania, South Africa, Zambia and world average



Source: author's creation based on World Bank (2022) data.

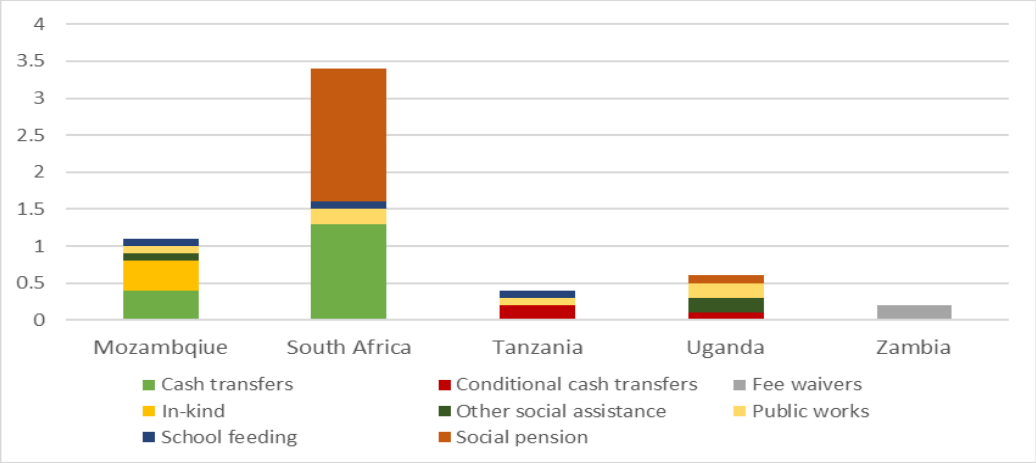
Although these countries have made significant progress in tax revenue collection in recent years, they still face important difficulties, particularly concerning their ability to tax income. Indeed, all the five countries have a tax income level (defined as the proportion of government revenue that comes from income tax) below the world average. Tanzania and Uganda present the lowest income tax level, which is almost 5 percent, while for Zambia it is almost 8 percent and for the remaining two countries it is slightly above 15 percent (UNU-WIDER, 2021).

A low level of tax revenue also has implications for a country's social protection system. Indeed, low and middle-income countries spend lower shares of total social spending on social protection, compared to higher income countries. Durán et al. (2019) evidence that low- and middle-income countries faced a US$527 billion gap in their social protection financing before the pandemic. According to new findings of the International Monetary Fund, the COVID-19 is contributing to exacerbating the already complex

situation of the Sub-Saharan African region. Indeed, since the beginning of the pandemic, most of the SSA countries experimented a contraction of their tax revenues (Aslam, Delepierre, Gupta and Rawlings, 2022).

According to the World Bank ASPIRE database, Mozambique spends 1.2 percent of GDP on social assistance, South Africa 3.8 percent, Tanzania 0.4 percent, Uganda 0.7 percent and Zambia 0.2 percent (World Bank, 2021)[2], thus remaining below the worldwide social protection expenditure average which is around 10 percent of GDP (OECD, 2014), African countries, especially the Sub-Saharan ones, present a very low coverage in their social security schemes, which is largely confined to workers in the formal economy. The difficulties with targeting those people who need support and the most vulnerable reveal the low capacity to provide adequate social protection in these countries. In addition, governance and administrative problems in some existing social security schemes undermine trust and public support for social security (ILO, n.d.).

Figure 2. Public Spending on Social Assistance Programs (% of GDP)



Source: author's creation using World Bank (2021) data

3. Literature review

Recent literature on tax compliance agrees that at least two aspects emerge when questioning why people pay taxes. The first theory argues that taxpayers are discouraged to evade taxes by the enforcement of policies and actions of administrations. The second aspect refers to the citizens' willingness to pay taxes which is called tax morale. Regarding this element, a large piece of research focused on the connection between trust and compliance (Scholz & Lubell, 1998; Levi & Stoker, 2000; Bornman, 2015; Batrancea et al., 2019), evidencing that a higher level of trust corresponds with a higher level of tax compliance (Birskyte, 2014). Citizens decide to pay taxes because they expect to receive public goods in return (Daude et al., 2012; Bräutigam et al., 2008; Levi, 1998), thus establishing a social contract with the state (Birskyte, 2014).

[2] The data for Tanzania and Zambia refer to 2018

Some scholars like Kangave et al. (2016) argue that the low capacity to generate adequate tax revenues in developing countries has to be linked to noncompliance, especially by the wealthy of the society. Following this line of thinking, some studies attributed part of the blame to a culture of noncompliance among citizens in developing countries (Bahl & Bird, 2008; Besley & Persson, 2014), sustaining that "taxation is a strange, unwelcome and sometimes incomprehensible concept to many people in developing countries" (Burgess & Stern, 1993, pg. 799). Umar Umar, Derashid & Ibrahim, (2017) reject these convictions, underlining that most of the studies on tax compliance in developing countries do not consider the taxpayers' narrative, leaving a gap in understanding the phenomenon of tax compliance in these countries.

Recent studies focused on people's views to understand what causes taxpayers' evasion in Africa. Ali, Fjeldstad & Sjursen (2014) conducted a cross-country analysis on taxpayers' attitudes in Kenya, Tanzania, South Africa and Uganda evidencing that those citizens that are more satisfied with public service provision are more likely to have a tax compliant attitude in all the four countries. Janke (2017) carried out a quantitative analysis on 33 African countries to investigate the impact of perceived corruption in the nation on citizens' tax morale, concluding that this has a negative impact. Additionally, Boly, Konte & Shimeles (2020) addressed the relationship between corruption and tax compliance in Africa using Afrobarometer data and point out that the quality of governance can influence tax morale.

The study aims to follow the same purpose of these works, adopting a quantitative technique to analyze citizens' perceptions on governance related to social protection and tax systems in some SSA countries and the impact of these perceptions on the decision or willingness to pay taxes. After this, the analysis plans to examine the effectiveness and efficiency of the current social protection and tax systems by identifying potential gaps between the actual existence of social and tax benefits in the selected countries and comparing them to the citizens' perceptions of those same systems. The final aim is to design specific policy recommendations to improve these perceptions and thus trust in governance for a region where tax authorities are the second least trusted among the state institutions (Graham & Bamba, 2020).

4. Research question

After consideration of the Sub-Saharan African context and recent academic work on taxation, three pressing research questions and corresponding hypotheses have been formulated.

The study aims to contribute to the current literature on taxation in SSA countries considering both perspectives: that of the citizens and of the governments. On the one hand, the analysis aims to expand the knowledge on taxpayers' attitude starting from their perception on government performance regarding social and tax policy system. On the other hand, this work contemplates potential gaps between the actual existence of programs and citizens' perception that may affect tax morale. This study would seem to be the first to consider both narratives and compare them in order to identify gaps and possible solutions that could improve tax revenues in SSA countries.

1st research question:

Does citizens' willingness to pay taxes on income depend on their perception of government's performance related to social and tax policy in Mozambique, South Africa, Tanzania, Uganda and Zambia?

2nd research question:

Does citizens' perception on governance related to social and tax policies differ from the actual landscape of the corresponding national systems in Mozambique, South Africa, Tanzania, Uganda and Zambia?

3rd research question:

If so, are there aspects of the corresponding national social and tax policy system that could be changed to fill this gap?

5. Methodology

The study aims to contribute to understanding the strength of the social contract established between citizens and governments in Mozambique, Tanzania, South Africa, Uganda and Zambia by applying a two-step analysis. Firstly, the analysis will use two merged datasets of the Afrobarometer for the years 2016 and 2018[3] in order to examine citizens' willingness to pay taxes based on their perceptions of governance related to social and tax policies (this part will be carried out using the statistical software STATA). In order to make the results more consistent and based on more data the analysis uses two rounds of the survey. Secondly, the analysis will investigate the effectiveness and efficiency of the social policies during the same years, considering the national tax system of each country using SOUTHMOD model, by comparing the actual landscape of social and tax benefits to the way they are perceived by citizens.

5.1. Descriptive statistics

Because all three datasets contain similar general demographic information (age, gender, education, and occupation), comparisons are made easier. However, the data from the SOUTHMOD models do not indicate whether the individual lives in an urban or rural area. Furthermore, the data from Afrobarometer surveys do not include a personal income variable. For this aspect, a wealth indicator was developed using a proxy means test developed in XXX's study. The hand includes information on whether respondents own a radio, television, automobile, or mobile phone, whether they have running water and a toilet, and what type of roof material is used in their homes. A person is considered poor if he or she lacks three or more variables. Despite the fact that SOUTHMOD includes income variables, consumption has been chosen to analyse poverty because consumption is better measured than income for poor families because is less vulnerable to under-reporting bias (Meyer Sullivan, 2003, pp. 1)

Mozambique:

The Mozambique SOUTHMOD model (MOZMOD) has 109,107 observations, while the Afrobarometer rounds have 2,400 and 2,393 observations, respectively. In all three datasets, nearly half of the population is divided by gender, with a slight majority of females. MOZMOD's population distribution by age is concentrated primarily between the ages of 18 and 25 (55 percent), with the remainder primarily between the ages of 25 and 45. (almost 60 percent). Other significant differences are not found in the datasets as a result of this.

[3] Afrobarometer informed that round 8, which corresponds to the year 2019, will not be available for these countries before mid or late 2022. Given this aspect I decided to base my analysis using rounds 6 and 7

In terms of population education status, MOZMOD shows significant differences from Afrobarometer surveys. Indeed, in the former, 70% of the population is illiterate, whereas the latter is only about 15%. The distinction holds true for other educational levels as well, including pre-primary, lower secondary, and upper secondary school.

In terms of occupation, 90 percent of the sample population is employed, while nearly 60 percent in Afrobaromter round 6 and nearly 70 percent in Afrobaromter round 7. The unemployed are the second largest group, followed by the others (student, pensioner, and others are almost 0 percent).

Fifty-six percent of the population is under the poverty line in MOZMOD, while in Afrobarometer, round 6 is 41 percent, and in round 7, 32 percent.

Tanzania:

TAZMOD provides two datasets for the system: 2016 and 2018. There are 46,593 observations in the former and 45,926 in the latter. The Afrobarometer rounds have 2,386 and 2,400 observations, respectively. All datasets have a 50/50 gender split of the population. TAZMOD population distribution by age is primarily concentrated between 18 and 25 (around 50%) for both datasets, whereas Afrobarometer rounds are primarily in the 35-55 age range (almost 60 percent).

In terms of population education status, the TAZMOD dataset differs significantly from the Afrobarometer surveys. Indeed, in the former, more than 70% of the population is illiterate, whereas in the latter, 10% to 13% are. The second most significant difference is in primary education.

In terms of occupation status, TAZMOD differs from Afrobarometer data and from its two systems. Indeed, in the one from 2016, only 6% of the sample population was registered as a student, whereas in the one from 2018, it was more than 30%. This last system also shows a significant difference in the percentage of employed people (30%) when compared to Afrobarometer round 7. (92 percent).

TAZMOD reports that 48 percent of the population is poor in the 2016 system and 44 percent in the 2018 system, whereas Afrobarometer reports 29 percent in round 6 and 27 percent in round 7.

Uganda:

The UGAMOD dataset has 74,422 observations, while the Afrobarometer rounds have 2,400 and 1,200 observations, respectively. All three datasets have a 50/50 gender split of the population, with females having a slight majority (52 percent in UGAMOD). In the SOUTHMOD model for Uganda, the population distribution by age is concentrated primarily between the ages of 18 and 25 (58 percent), whereas in the Afrobarometer, round 6 is mostly between the ages of 25 and 45, and round 7 is mostly between the ages of 35 and 55.

The main differences in education status between UGAMOD and Afrobarometer are concentrated primarily on the percentage of people who are not in education or are in pre-primary. In terms of occupation, UGAMOD shows some differences in employed and student people rates when compared to Afrobarometer data.

In UGAMOD, 46 percent of the population is poor, whereas in the Afrobarometer, round 6 is 40 percent and round 7 is 37 percent.

Zambia:

ZAMOD has 62,879 observations, while the Afrobarometer rounds have 1,199 and 1,200 observations, respectively. All three datasets have a 50/50 gender split in the population. In the SOUTHMOD model for Zambia, the population distribution by age is concentrated primarily between the ages of 18 and 25 (53 percent), whereas it is mostly between the ages of 25 and 45 in both Afrobarometer rounds.

ZAMOD has a high percentage of people who are not in school (66 percent), whereas both Afrobarometer rounds have a lower percentage. Aside from that, the most significant differences in educational status pertain to pre-primary and upper-secondary education. ZAMOD differs from the Afrobarometer rounds in terms of occupation status, particularly in terms of the percentage of students and employed people.

In ZAMOD, 48 percent of the population is under the poverty line, while in the Afrobarometer, round 6 is 27 percent, and in round 7, 26 percent.

5.2 Logit regression model analysis

The Afrobarometer is a survey at the individual level conducted face-to-face and collects information on Africans' views on democracy, governance, economic reform, civil society, and quality of life. Afrobarometer surveys are based on national probability samples and contain country-specific questions even though it requires maintaining strictly the wording of questions to preserve the comparability of results across countries and over time.

The study conducts a logistic regression analysis (equation 1) for each country and each round to investigate the likelihood of an individual avoiding taxes based primarily on its own perception of tax governance and social systems on individual tax compliance. Due to the harmonization of the survey questions, the same questions were used for the analysis for all countries. The dependent variable was created in round 6 by combining three tax questions (Q. 44, Q75A, and Q75B), while the dependent variable in round 7 corresponded to question 38C and was assigned a value of 0 or 1. If they avoid paying taxes, they get a 0; otherwise, they get a 1. If the respondent selected the answer indicating tax avoidance at least once, a value of 0 has been assigned to that individual for the dependent variable.

Even though the countries under study have different population characteristics, it has been possible to identify a unique logistic regression model capable of measuring the effect of citizens' perceptions of governance related to national tax and social systems on individual tax avoidance. Only Tanzania does not fit into the general logistic regression model for both rounds. For this aspect a specific logistic regression model has been built for this country.

Equation 1. General logistic regression model equation

$$\mathrm{E(Y)} = \mathrm{P} = \frac{\exp\left(\beta o + \beta 1\mathrm{x}\right)}{1 + \exp\left(\beta o + \beta 1\mathrm{x}\right)}$$

5.2.1 Round 6

Following the same concept of the dependent variable as in round 6, different questions about the same aspect were merged to create a new indicator to be used as independent variables in the logistic model. As the main independent variable, an index for public opinion on governance has been constructed by combining Q66B, E, G, H, I, and J with values ranging from 1 to 4. Another index that indicates trust in institutions has been created by combining Q52A, B, D, and E with values ranging from 0 to 1. In addition to these three independent variables, the following have been created using the same procedure: score on government services (Q55 A, C, and G), tax system efficiency (Q70A and B), and willingness to pay more taxes (Q65A and C). Some categorical variables were included in the logistic regression models: age, gender, education, urban-rural area, occupation status, and wealth score. In terms of the latter, the Afrobaromter surveys do not include information on individual income. To address this issue, a proxy for wealth was created using the same variables that Janke (2017) had previously used.

Equation 2. Logistic regression model equation for round 6[4]

$$\mathrm{E(Y)} = \mathrm{P} = \frac{\exp\left(\beta o + \beta_{1x} + \beta_{2x} + \beta_{3x} + \beta_{4x} + \beta_{5x} + \beta_{6x} + \beta_{7x} + \beta_{8x} + \beta_{9x} + \beta_{10x} + \beta_{11x} + \beta_{12x} + \beta_{13x}\right)}{1 + \exp(\beta o + \beta_{1x} + \beta_{2x} + \beta_{3x} + \beta_{4x} + \beta_{5x} + \beta_{6x} + \beta_{7x} + \beta_{8x} + \beta_{9x} + \beta_{10x} + \beta_{11x} + \beta_{12x} + \beta_{13x}}$$

Y= taxes; I=opinion on governance; II= trust in institutions; III= government service score; IV= availability to pay more taxes; V= tax system efficiency; VI= wealth score; VII= age; VIII=gender; IX=urban-rural; X=education; XI=occupation status; XII= region; XIII=job.

5.2.2 Round 7

Afrobaromter round 7 includes variables that differ from those in round 6. As a result, new logistic regression models have been created using different indices created using the same process as those used in round 6. The main independent variable (Q26D) indicates citizens' opinions on governance and assigns a 0 to those who indicated a refusal to pay taxes with their response and a 1 to those who do. Two additional independent variables have been included in the model: trust in institutions (Q43A, B and D) and score on government services (Q49B, E and M). The same demographic variables of the logit models built for round 6 have been used.

Equation 3. Logistic regression model equation for round 7[5]

$$\mathrm{E(Y)} = \mathrm{P} = \frac{\exp\left(\beta o + \beta_{1x} + \beta_{2x} + \beta_{3x} + \beta_{4x} + \beta_{5x} + \beta_{6x} + \beta_{7x} + \beta_{8x} + \beta_{9x} + \beta_{10x}\right)}{1 + \exp(\beta o + \beta_{1x} + \beta_{2x} + \beta_{3x} + \beta_{4x} + \beta_{5x} + \beta_{6x} + \beta_{7x} + \beta_{8x} + \beta_{9x} + \beta_{10x})}$$

Y= taxes; I=opinion on governance; II= trust in institutions; III= government service score; IV= wealth score; V= age; VI=gender; VII=urban-rural; VIII=education; IX=occupation status; X= region.

[4] Tanzania presents the same logit model but with a double interaction between the main independent variable (opinion on governance) and trust in institutions.

[5] Tanzania does not show a statistically significant relationship between the dependent variables (taxes) and the main independent variable (opinion on governance), despite the fact that different logistic regression models with different combinations of variables have been tried.

5.3 Microsimulation analysis

The second part of the study uses SOUTHMOD to investigate the effectiveness and efficiency of the social policies during the same years. SOUTHMOD is a stand-alone static tax-benefit microsimulation model and it relies on the EUROMOD software platform. The model allows to analyze the effects of current or potential policies on households' incomes and compare their impacts on poverty, inequality and government revenues. In addition, SOUTHMOD provides a harmonized platform to investigate economic outcomes under different tax-benefit policy systems and facilitate cross-country comparisons.

For the analysis, the latest version of the SOUTHMOD models of the selected countries will be used (MOZMOD v2.7, SAMOD v7.2, TAZMOD v2.4, UGAMOD v1.6 and MicroZAMOD v2.6). Each model contains updated information on the social and tax policies of the respective nation.

The study includes two different scenarios for each year: one with policies and the other without This facilitates the comparison of a scenario with existing national social and tax policies and another with none. For each system (with and without policies) poverty rate and inequality rate have been calculated at the individual level using the international poverty line at $ USD 1.90 (2011 PPP) and the Gini index.

The expected outcomes should confirm the potential existence of several gaps between citizens' perception and the actual landscape of the current social and tax policy system in the countries under study. The next logical step in this analysis would then be to identify what causes these gaps and, subsequently, explore potential solutions (different targeting model, design of new type of social policies, different tax system, improved dissemination of information, etc...).

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Appendix

Table 1. List of variables for logit regression model in round 6.

Name of the variable	Question	Coding
Taxes	Q.44: Which of the following statements is closest to your view? Choose Statement 1 or Statement 2. *[Interviewer: Probe for strength of opinion: Do you agree or agree very strongly?]* Q.75A: Not paying for the services they receive from government Q75B: Not paying the taxes they owe on their income	Taxes equals to 0 if the respondent chose option 3 or 4 for Q44; or option 1 or 2 for Q75A or Q75B. Taxes equals to 1 if 0 if the respondent chose option 1 or 2 for Q44; or option 3 or 4 for Q75A or Q75B.
Opinion on government (opinion_on_gov)	Q66: How well or badly would you say the current government is handling the following matters, or haven't you heard enough to say? - B: Improving the living standards of the poor - E: Narrowing gaps between rich and poor - G: Improving basic health services - H: Addressing educational needs - I: Providing water and sanitation services - J: Ensuring everyone has enough to eat	Opinion on government is the arithmetic mean (the average) across all the variables.
Wealth score (wealth_score)	Q93A: Your main source of water for household use Q93B: A toilet or latrine Q105: What was the roof of the respondent's home or shelter made of? Q91: Which of these things do you personally own? - A: Radio - C: Motor vehicle or motorcycle - D: Mobile phone	The wealth score is the sum of the values of each variable. For the coding process please refer to Jahnke (2017).
Trust in institutions (trust_in_institutions)	Q52: How much do you trust each of the following, or haven't you heard enough about them to say? - A: The President of the Republic - B: Assembly of the Republic	Trust in institutions is is the arithmetic mean (the average) across all the variables.

	- D: The Mozambique Tax Authority - E: Your Local Government	
Government service score (gov_service_score)	Q55A: How easy or difficult was it to obtain the services you needed from teachers or school officials? Q55C: How easy or difficult was it to obtain the medical care you needed? Q55G: How easy or difficult was it to obtain the services you needed?	Government service score is the arithmetic mean (the average) across all the variables.
Tax system efficiency (tax_system_efficiency)	Q70: Based on your experience, how easy or difficult is it to do each of the following? - A: To find out what taxes and fees you are supposed to pay to the government? - B: To avoid paying the income or property taxes that you owe to government?	Tax system efficiency equals to 0 if the respondent chose option 1 or 2 of Q70A or option 3 or 4 of Q70B. Tax system efficiency equals to 1 if the respondent chose option 3 or 4 of Q70A or option 1 or 2 of Q70B.
Increasing taxes (increasing_taxes)	Q65C: If the government decided to make people pay more taxes or user fees in order to increase spending on public health care, would you support this decision or oppose it?	1. Strongly oppose 2. Somewhat oppose 3. Neither support nor oppose 4. Somewhat support 5. Strongly support 6. It depends
Gender	Q101	Gender equals to 0 if male and 1 if female
Urban/rural (urbrur)	Q115	Urban/rural equals to 0 if urban and 1 if rural
Education	Q97	0. No formal schooling 1. Informal schooling only (including Koranic schooling) 2. Some primary schooling 3. Primary school completed 4. Intermediate school or Some secondary school / high school 5. Secondary school / high school completed 6. Post-secondary qualifications, other than university e.g. a diploma or degree from a polytechnic or college 7. Some university 8. University completed 9. Post-graduate
Occupation status (occupation_statuus)	Q96A	0. Never had a job 1. Student 2. Housewife / homemaker 3. Agriculture / farming / fishing / forestry

		4. Trader / hawker / vendor 5. Retail / Shop 6. Unskilled manual worker (e.g., cleaner, laborer, domestic help, unskilled manufacturing worker) 7. Artisan or skilled manual worker (e.g., trades like electrician, mechanic, machinist or skilled manufacturing worker) 8. Clerical or secretarial 9. Supervisor / Foreman / Senior Manager 10. Security services (police, army, private security) 11. Mid-level professional (e.g., teacher, nurse, mid-level government officer) 12. Upper-level professional (e.g., banker/finance, doctor, lawyer, engineer, accountant, professor, seniorlevel government officer)
REGION	Select appropriate code for Region/Province	List of regions of the country
Q95	Q95: Do you have a job that pays a cash income? *[If yes, ask:]* Is it full-time or part-time? *[If no, ask:]* Are you presently looking for a job?	0. No (not looking) 1. No (looking) 2. Yes, part time 3. Yes, full time

Source: author's creation

Table 2. List of variables for logit regression model in round 7.

Name of the variable	Question	Coding
Tax	Q38: For each of the following statements, please tell me whether you disagree or agree? - C: The tax authorities always have the right to make people pay taxes.	Tax equals to 0 if the respondent chose option 1 or 2 of Q38C. Tax equals to 1 if the respondent chose option 3 or 4 or 5 of question Q38C
Opinion on government (opinion_on_gov)	Q26: Here is a list of actions that people sometimes take as citizens when they are dissatisfied with government performance. For each of these, please tell me whether you, personally, have done any of these things during the past year.	Opinion on government equals to 0 if the respondent chose option 1 or 2 or 3 or 4 of Q26D. Opinion on government equals to 1 if the respondent chose option 0.

	- D: Refused to pay a tax or fee to government.	
Trust in institutions (thrus_in_institutions)	Q43: How much do you trust each of the following, or haven't you heard enough about them to say? - A: The President - B: Parliament - D: Your District Council	Trust in institutions is the arithmetic mean (the average) across all the variables.
Government service score (gov_service_score)	Q49: Now I would like to talk to you about experiences that some people have in accessing certain essential government services. - B: How easy or difficult was it to obtain the services you needed from teachers or school officials? - E: How easy or difficult was it to obtain the medical care you needed? - M: How easy or difficult was it to obtain the services you needed?	Government service score is the arithmetic mean (the average) across all the variables.
Wealth score (wealth_score)	Q92A: Your main source of water for household use. Q92B: A toilet or latrine. Q105: What was the roof of the respondent's home or shelter made of?	The wealth score is the sum of the values of each variable. For the coding process please refer to Jahnke (2017).
Occupation status (occupation_status)	Q95A: What is your main occupation?	0. Never had a job 1. Student 2. Housewife / homemaker 3. Agriculture /farming / finishing / forestry 4. Trader / hawker / vendor 5. Retail / shop 6. Unskilled manual worker (e.g., cleaner, laborer, domestic help, unskilled manufacturing worker) 7. Artisan or skilled manual worker (e.g., trades like electrician, mechanic, machinist or skilled manufacturing worker) 8. Clerical or secretarial 9. Supervisor / Foreman / Senior Manager 10. Security services 11. Mid-level professional (e.g. teacher, nurse) 12. Upper-level professional (e.g., banker/finance, doctor, lawyer, engineer, accountant,

		professor, senior-level government officer)
Age	Q1: How old are you?	Respondent's age
Gender	Q86A: Your gender	Gender equals to 0 if male and 1 if female.
Urban/rural (urbrur)	Q115: Do you come from a rural or urban area?	Urban/rural equals to 0 if urban and 1 if rural
Education	Q97: What is your highest level of education?	0. No formal schooling 1. Informal schooling 2. Some primary schooling 3. Primary school completed 4. Intermediate school or some secondary school/high school 5. Secondary school/high school completed 6. Post-secondary qualifications 7. Some university 8. University completed 9. Post-graduate 10.

Source: author's creation