

Does Citizen's Trust in Government Increase Willingness to Pay Taxes in Tanzania? A Case Study of Mtwara, Lindi and Dar es Salaam Regions

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Abstract

This paper examines the citizen's trust in government and their willingness to pay taxes to improve public goods and services in Tanzania. We use logit model to estimate the effect of government trust on willingness to pay taxes on improved public goods/services. Chi square test finds an association between citizen's trust in government and their willingness to pay taxes for improved public good/services. Logit estimations show that an increase of one unit of public service delivery is associated with increase of citizen's trust in the government. Furthermore, we find that taxpayers are dissatisfied with public services/goods provided by the government. Only 43.5% of citizens showed an average satisfaction on public services delivery. The policy implication is that, providing better public services to the society is an effective tool to raise tax revenues in the government.

Keywords: Willingness to pay taxes, Trust in government, logit model

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1. Introduction

The aim of this study is to examine the citizen's trust in government and their willingness to pay taxes for improved public goods/ services in three regions in Tanzania. It is an attempt to understand the modern society in terms of social, political and community relations (Freitag and Bhülmann, 2009). Citizen's trust in government is a form of social capital necessary to democracy (Musgrave, 1999b), which allows a government to maintain effective legitimacy, authority in decision making and essential for good governance and sustainability of the political system (Christensen and Laegreid, 2005; Park and Blenkinsopp, 2011; Nunkoo, 2015).

Citizen's trust can play a prominent role in the context of fiscal policy (i.e., adjusting government spending and taxation to influences the economy). For instance, a government that lacks trust may find itself increasing taxes to the firms and reducing its expenditure when the macroeconomic situation is not suitable (Bursian et al, 2015). A highly trusted government can adapt fiscal corrections in a later period when the macroeconomic situation is suitable. This means, countries with good governance and citizen's high trust in government have less severe business cycles (Bursian et al, 2015). Thus, trust is associated with higher degree of economic growth and development (Varvarigos and Xin, 2015).

Tanzania's like other developing countries has helped to improve the quality of life for millions of people, and the country's performance in tax collection advanced to enable fiscal stability and the government's ability to fill the existing and future needs of its rapidly expanding population. Moreover, the country vision 2025 aims to become a middle income and relies on industrialization. To achieve the vision, it requires reliable funding in infrastructure such as roads, railways, education and health among others which depends on the ability of the country to collect tax. Mobilizing revenue from tax is one way for government to create fiscal space to broaden the tax base and provide essential public services, reduce foreign aid and single resource dependence (Ali et al., 2014).

This study aims to contribute an empirical literature on citizen's trust in government and their willingness to pay taxes (WTP) for improved public services in Tanzania for a number of ways. First, the case study regions are selected due to their potential in natural gas revenues collection (Mtwara and Lindi) and almost 90% of the country tax revenues are generated in Dar-es-Salaam regions. Second, there is lack of literature on the effect of trust in the government on WTP in developing countries including Tanzania. Third, the previous study on the subject matter in Tanzania employed qualitative approach (e.g., Fjeldstand and Semboja, 2001) and never considered citizen's trust in government on WTP in quantitative approach. In this paper, we make use of quantitative approach (logit regression) and respondents were asked to state whether they trust government and willing to pay or not to pay additional taxes until improved public services.

Our study finds that, citizens who trust the government were 41% less willing to pay taxes on improving public services than citizens who strongly trust the government. In turn, the citizens who don't trust the government were 48% less willing to pay taxes on improving public services than those strongly trusts the government. In general, citizen's trust in government responds to lower willing to pay taxes for improved public services. Furthermore, our results show that citizens with fair economic condition are willing to pay more taxes on improved public services than citizens with bad economic condition. This

implies that, citizens with good economic conditions were associated with a greater willingness to pay more taxes to improve public services.

It is also known that; highly educated citizens have on average better jobs and more opportunities than the lower educated. Surprisingly, citizens with primary and secondary education (1- 4), are willing to pay more taxes to improve public services than citizens with university level, college (after form six), secondary (form 5-6) and no formal school. The reasons behind educated citizens (university level, college after form six and secondary form 5-6) not willing to pay taxes might be lack of trust to government ability in providing better services. Only 69.6% of citizens with primary and secondary education are willing to pay more taxes. The non-formal school citizens are less willing to pay taxes due to unaffordable to pay or lack of knowledge.

The remainder of the paper is structured as follows: Section 2 describes the literature reviews, section 3 describes the methodology and data, section 4 describes the results, while section 5 presents discussion and section 6 concludes the results.

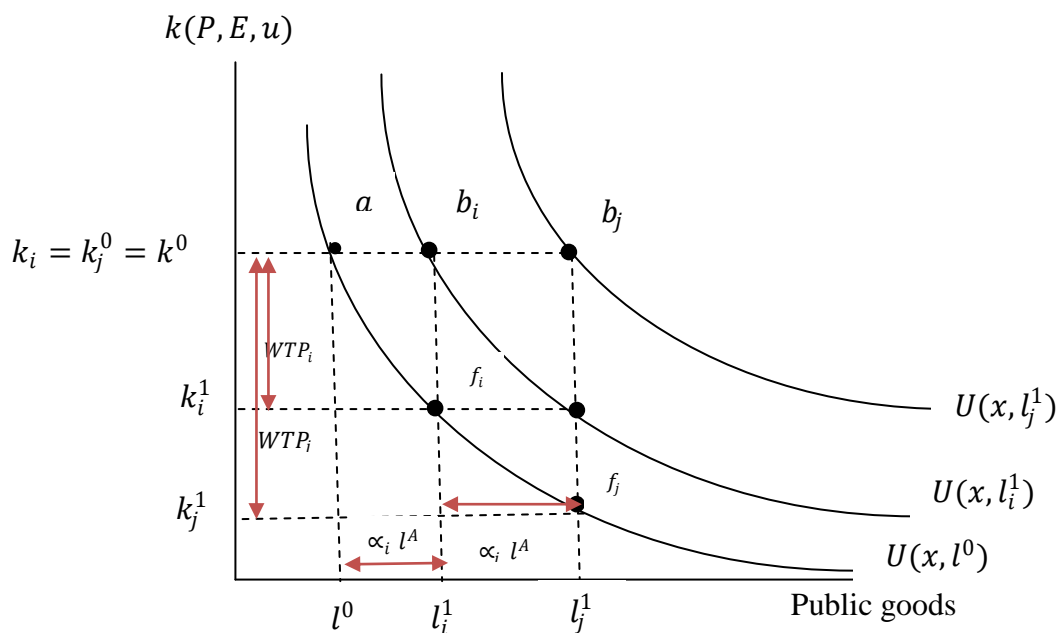
1. Literature Review

1.1 Theoretical Literature Review

Citizens obtain some level of satisfaction from consuming public goods services and they are willing to pay for improvement in public services due to higher utility derived. It is hypothesized that interpersonal trust leads to a greater willingness to pay taxes (Habibov et al., 2017), and individuals with higher degree of institutional trust have greater support for government policies.

Figure 1 explains the theory of trust and willingness to pay for public goods. When citizens trust factor is close to 0, their stated WTP are lower than the desired WTP (Hyungna and Hong, 2012).

Figure 1: Trust and willingness to pay



Adapted from: Hyungna & Hong (2012)

In figure 1, we considered two citizens, i and j . Let i be a low trust citizen (i.e. $\alpha_i = 0$), and j be an extremely high trust citizen ($\alpha_j \approx 1$). At given l^A , citizen i who completely distrust the government and its policy, expect that any improvement in public goods/services are ignorable (i.e., $l_i^A = \alpha_i l^A = 0$). Citizen j expects that the improvement will be the same as stated by the government and its policy (i.e., $l_j^A = \alpha_j l^A \approx l^A$). Therefore, a low trust citizen WTP_i is equivalent to $(b_i - f_i)$ and is less than a highest trust citizen $WTP_j = (b_j - f_j)$. The expenditure function $k(P, E, U)$ is the minimum expenditures on market goods that an individual must spend to achieve utility function (U) at given price (p) and public goods (l). In the figure, market l does not exist, thus the level of l are controlled by the government.

1.2 Empirical Literature Review

Citizen's trust in government and willingness to pay taxes are important issues to note in an economic point of view. Previous literature described the citizen's willingness to pay taxes and how they perceive their government. For instance, Arrington and Jordan (1982) estimated citizen willingness to pay for government services in North Carolina. Respondents were asked whether they were willing to pay certain amounts for services if government did not provide them. Their findings showed that, most citizens were satisfied with government services.

Beck et al. (1987) surveyed Florida residents in three cities about their attitudes toward taxes and services. They found that, attitudinal variables such as satisfaction with the community are important determinants of tax support than demographic factors. Moreover, they found that community dissatisfaction was among the significant determinants of dissatisfaction with taxes. Phelan (2006) argued the way the government does not keep their promises to citizens for any reason. In so doing, citizens consider government has betrayed their trust and can repeat betraying them again than governments that have not done so for a long time.

Glase and Hildreth (1999) asked respondents to indicate whether they were willing to pay a small increase in taxes or fees for 14 different services in exchange for increased service levels. They found that, about half of the respondents who were satisfied with the performance of government responded with a willingness to pay increased taxes. They argued that, citizens who are satisfied with performance and who register a willingness to pay taxes were consistent with their assessment of government performance as responsive. In contrast, citizens who view government to be a poor performer were resistant to increased taxation in view that government is not responsive.

Anderson (2017) examined the citizen's trust in government, and willingness to pay taxes in transition economies. They found that citizen's trust in government had a positive impact on willingness to pay for public goods. Moreover, their results indicated that citizens with higher income place greater trust in all social institutions including the government. Thus, income was a significant factor contributing to trust in all social institutions. Their findings implied higher income citizens have greater willingness to pay for public goods.

Price (2012) showed evidence that both race and employment status had made impacts on trust in government in United States of America. The decision of self-employment among black Americans was sensitive to trust in the federal government. This means, measures of trust in the federal government increased both the likelihood of self-employment and the return to self-employment. Clark and Lee (2001) examined public choice model of trust in

the government. They argued that, up to some level increased trust improves government performance, but beyond that level added trust gives too much latitude to interest groups and negatively affects government performance. Therefore, their model was designed for an optimal level of trust, taking advantage of the initial beneficial effect of increasing trust while avoiding the negative effect of excessive trust.

2. Methodology

2.1 Research design and data collection procedures

A cross sectional survey design was carried out in three regions in Tanzania namely Lindi, Mtwara and Dar es Salaam. The regions (Mtwara and Lindi) were selected due to their potential in natural gas revenues collection and almost 90% of the country tax revenues are generated in Dar-es-Salaam. The regions were surveyed in October 2016, sampled with a total population of 3066 respondents. Each region represents a sample size of at least 1000 population. From each region, a simple random selection was used to get the sample size in selected district. The Dar es Salaam region unit is comprised with Kigamboni, Ilala, Ubungo, Temeke and Kinondoni districts. Lindi region unit included Lindi, Kilwa and Lindi Municipal districts while Mtwara region unit comprise Mtwara Municipal, Mtwara, Newala and Tandahimba Districts. In the selected sample units, both male and female respondent’s shared 50% equal gender participation. All respondents were aged above 18 years. A self-administered questionnaire was used as a tool for data collection and analysis.

2.2 Model and estimation techniques

The binary logit model is used to identify citizen's willingness to pay taxes for improved public services. The model can be specified as follows:-

$$Y_i = \frac{1}{1 + e^{-Z_i}} \dots\dots\dots (1)$$

Y_i = Citizens willingness to pay more taxes categorized as :(1= Yes, 0 = No),
 Z = Summation of explanatory variables multiplied by their coefficient,

$$Z = \beta_0 + \beta_i X_i + \mu_i \dots\dots\dots (2)$$

Where

β_0 = constant

β_i = Coefficient of explanatory variables (that includes citizen's trust in government, their education and economic conditions at present), μ_i = Error term

We used the binary logit model because the dependent variable is discrete and ditochomous in nature. There are two questions related to WTP for more taxes for improved public services, and the respondents were supposed to answer the following questions: 1) Are you willing to pay more taxes if public services are improved? (e.g., Yes or No). The explanatory variables are discrete in nature and include citizen's trust in the government; their education levels and economic conditions that might affect WTP for more taxes.

The variables were selected due to the fact that, an economic condition at present (income) determines citizen's budget constraint, which has an effect on WTP for taxes. Similarly, education levels and government trust have positive effects on willingness to pay (Shao et al.,

2018; Anderson, 2017). In turn, three variables were included to explain WTP to avoid over fitting of the model. The data analysis was done by using STATA package version 12.

3. Results and Discussion

3.1 Descriptive statistics

The descriptive statistics of the respondents are summarized in Table 1. Samples of 3066 respondents were used, and the majorities were self-employed in agriculture and other sectors (73.5%), and had formal education (67%). Concerning willingness to pay more taxes for public services, a greater number of respondents agree (91.3%) to pay more taxes and 8.7% did not agree to pay more taxes if public goods/services are improved. Fifty four (54%) of the sample population had primary education, no formal school (22%), and 6% higher education (university & college). Only 9.3% of the respondents were employed and 11% were unemployed. The unemployment rate observed in this study is almost near the same as the national average rate of 11.4% surveyed in 2014. Nearly all 79.4% of the respondent reported to have trust with the government. On other hand, 47% of the respondents reported bad economic conditions at present, while only 9.4% were in fair good economic conditions.

Table 1: Respondent Characteristics

Variable	%	
Employment situation	Self-employed, agriculture	38.6
	Unemployed	10.9
	Student	4.2
	Employed	9.3
	Retired	2.1
	Self-employed other sectors	34.9
Education level	No formal school	22.4
	Primary (up to Class 8)	53.5
	Secondary (Form 1-4)	16.1
	Secondary (Form 5-6)	1.4
	College (after Form 4)	2.8
	College (after Form 6)	1.2
	University	2.0
Vocational/Adult education classes	0.6	
Citizens trust in government	Agree strongly	34.5
	Agree	44.9
	Neither agree nor disagree	13.1
	Disagree	7.4
Willing to pay more taxes if improved services?	Yes	91.3
	No	8.7
Gender	Male	49.9
	Woman	50.1
Economic condition at present	Very bad	26.9
	Fairly bad	20.1
	Neither good nor bad	42.9
	Fairly good	9.4

Source: Authors Estimation (2018)

A chi square test is used to determine a significant association between government trust and willingness to pay more taxes for improved services. Table 2 shows a chi square test of association between willingness to pay more taxes for improved services and citizens trust on the government. Since the chi square observed test (37.91) is greater than the critical value of 0.05, the null hypothesis is rejected, and concludes that there is a significant association between citizen trust in government and willingness to pay more taxes for improved public services. It is important to note that, in estimating regression model the numbers of observations were independent of each other, thus no need of matched data (See, Table 2 &4).

Table 2: Chi-square Test of Association

Citizen Trust in government	WTP more taxes for improved services		
	No	Yes	Total
Agree strongly	54	950	1004
Agree	156	1,151	1307
Neither agree nor disagree	20	361	381
Disagree	23	193	216
Total	253	2655	2908

Pearson $\chi^2(3) = 37.91, p < 0.05$

In estimation of binary logistic regression, the high correlations (multicollinearity) among the independent variables were checked. This was assessed by using a correlation matrix among the predictors. The correlations coefficients of less than 0.90, implies to meet the assumption. Table 3 shows no correlations of independent variables included in the model since the correlation coefficient are very weak. Therefore, the assumption of logistic regression is met.

Table 3: Correlation matrix

	Education levels	Economic condition	Trust in government
Education levels	1		
Economic condition	- 0.09	1	
Trust in government	0.002	0.26	1

Source :(Authors estimation, 2018).

Binary logistic estimation results are reported in Table 4. It shows the p-value tests of significance whether probability $> \chi^2$ is different from 0. Usually a p-value lowers than 0.05 shows a statistically significant relationship between explanatory variables and dependent variables. The conventional measure of goodness of fit (R^2) is not particularly meaningful in logistic regression model. The odds ratio reflects the probability that the (respondents) independent variables have higher or less willingness to pay (WTP) more taxes for improved services.

As shown in Table 4, citizens with good/fair economic conditions have greater willingness to pay more taxes for improved public goods/services than citizens with very bad economic conditions. This implies that, citizens with higher income were associated with a greater willingness to pay more taxes to improve public services. Moreover, citizens with primary and secondary education (1-4), are willing to pay more taxes on improved public services

than citizen with university level and no formal school. The results also shows that, citizens who agree to trust the government were 41% less likely willing to pay more taxes on improved public services than citizen who strongly agree to trust the government.

Table 4: Binary Logistic Model

Independent variables	Dependent variable	
	Willingness to pay more taxes for improved public service	
	Odds ratio	P - value
Citizens trust government		
Agree strongly ^{RC}	-	
Agree	0.41	< 0.001
Neither agree or disagree	1.11	0.69
Disagree	0.49	< 0.001
Economic conditions present		
Very bad ^{RC}	-	
Fairly bad	1.02	0.89
Fairly good nor bad	1.32	< 0.10
Fairly good	1.70	< 0.10
Education		
No formal school ^{RC}	-	
Primary	3.01	< 0.001
Secondary(1-4)	2.93	< 0.001
Secondary(5-6)	1.03	0.95
College (after form 4)	3.68	< 0.05
College (after form 6)	1.46	0.49
University	1.55	0.33
Vocation/Adult education	1.37	0.68

Source: Authors Estimation (2018).

Note :< 0.001 is significance at 1%, <0.05 at 5% and < 0.10 at 10%. **RC**= Reference category or control group.

In contrast, the citizens who don't trust the government were 49% less willing to pay more taxes on public services than those trust strongly the government. From theoretical point of view, citizens with high trust in government contribute to an increase in willingness to pay more taxes to improve public services (i.e., those who agree strongly).

Table 5 shows the cross tabulation of service delivery satisfaction to the public. Service delivery were categorized as satisfied, somehow satisfied, somehow dissatisfied and dissatisfied. We grouped satisfied and somehow satisfied into “*satisfaction*” and “somehow dissatisfied and dissatisfied” into “*dissatisfaction*”. The missing percentages were not applicable for respondents to understand the scenario. As shown in Table 5, the majority of citizens were satisfied with public service provision by primary school (67.7%), secondary school (65.3%), law and order (69.4%) and electricity supply (55.4%). Overall, citizens were not satisfied with public service provision by water supply (60%), health systems (dispensary, health clinic, hospital); buses stand services (40%), public toilets, road maintenance (54.9%) and agricultural extension services. Only 43.5% of citizens show an average satisfaction on public services delivery. Our results in (Table 6) also revealed the presence of weak

correlation coefficients between citizen's trust in government, level of public service delivery satisfaction and their willingness to pay taxes for improved public services.

Table 5: Cross tabulation of public service delivery satisfaction

Service delivery	Satisfaction %	Dissatisfaction %
Primary school	67.7	31.1
Secondary school	65.3	31.6
Dispensary	43.4	53.9
Health Clinic	40.5	52.4
District hospital	45.5	52.5
Water supply	37.4	60.3
Public toilets	15.3	30.1
Bus stand services	34.8	40.0
Market places	31.4	45.8
Road maintenance	41.5	54.9
Electricity supply	55.4	36.2
Law and order	69.4	26.7
Agricultural extension services	17.4	40.1

Source: Authors estimation, 2018

Table 6 shows the pairwise correlation coefficients of citizen's trust in government, public service delivery and willingness to pay (WTP) taxes. The coefficient of citizen's trust in government and public service delivery satisfaction are significantly positive at 5% levels. As expected, citizen's trust in government varies positively with the quality of public goods/services. An increase of one unit of public service delivery associates with increases of citizen's trust in the government. In addition, the result reveals the negative correlation between willingness to pay taxes (WTP) and citizen's trust in government.

Table 6: Correlation of trust in government, public service delivery and WTP taxes

Variables	Citizens Trust in Government
Citizens Trust in government	1
Primary school service delivery	0.08
Secondary school service delivery	0.08
Dispensary service delivery	0.12
Health Clinic service delivery	0.10
District hospital service delivery	0.15
Water supply service delivery	0.04
Public toilets service delivery	0.06
Bus stand services	0.03
Market places service delivery	0.06
Road maintenance service delivery	0.04
Electricity supply service delivery	0.03
Law and order service delivery	0.02
Agricultural extension services	0.09
Willingness to pay taxes (WTP)	- 0.04

Source: (Authors estimation, 2018); **Note:** All coefficients are significant at 5% levels.

4. Discussion of the results

Our key results in Table (6) demonstrates that, one unit increase of citizens trust in government associates with less willingness to pay taxes for improved public services. Similarly, the result from Table 4 shows that, citizens who agree and disagree to trust the government are willing to pay less tax for improved public services. The result can be explained in the sense of citizens believe that, government has ability to provide public services/ goods and they don't see the need to pay more for the services (Amoah et al., 2017). Another reason might be the promises set by the political party ruling the government to provide free public services and citizens believe in those promises, thus, based on trust, they are unwilling to pay any additional cost.

Citizens with good/fair economic conditions showed greater willingness to pay more taxes for improved public goods/services than citizens with very bad economic conditions. This implies, citizens with higher income were associated with a greater willingness to pay more taxes to improve public services. Moreover, citizens with primary and secondary education (1- 4), are willing to pay more taxes on improved public services than citizen with university level and no formal school. The reasons behind educated citizens (university level, college after form six and secondary form 5- 6) not willing to pay taxes might be lack of trust to government ability in providing better public services. The findings are consistent with other study done in Tanzania, which found individuals who have completed lower secondary school have higher willingness to pay tax than the less educated (CMI Brief, 2016).

In addition to that, we find citizens with fair income (economic conditions at present) were willing to pay more taxes for improved public services than citizens with very bad economic conditions. This explains that, higher income citizens are willing to pay more. Our findings on citizen's economic conditions/income willing to pay taxes are also similar to other studies (See for example, Amoah et al., 2017; Anderson 2017).

In general, the results found in our study are consistent with other findings on areas of WTP. For instance, Hyungna and Hong (2012) argued that when citizens trust factor is close to 0, their stated WTP are lower than the desired WTP to financially support announced projects. Their study found a positive relationship between the citizen's trust in the government and their willingness to pay. Similarly, Amoah et al (2017) found the negative coefficient of trust on WTP for improved electricity supply in Ghana. Therefore, our study shows that citizen's trust and distrust in government responds with lower willingness to pay taxes for improved public services. If taxpayers are dissatisfied with public services/goods provided by the government (See Table 5), they may be unwilling to pay taxes. For instance, the presence of future natural gas resources revenues in Lindi and Mtwara Regions might reduce citizen's willingness to pay tax, because the government gets an alternative source of revenue (CMI brief, 2016).

5. Conclusion and policy implication

In this paper, we have presented results of citizen's trust in governments and their willingness to pay tax in three regions of Tanzania. We find that, citizen's trust in government responds with lower willingness to pay taxes for improved public services. Similarly, citizens with good/fair economic conditions have greater willingness to pay more taxes for improved public goods/services. Surprisingly, citizens with primary and secondary education levels (1-4) are willing to pay more taxes for improved public services than citizen with university level and no formal school.

Our results suggest policy makers must be aware that citizens trust in government, their economic condition and formal education (primary and secondary levels (1-4) are important determinants of willingness to pay taxes for improved public services in Tanzania. Citizens always pay taxes on belief that they are receiving an adequate public service benefits relative to their contribution. If the government provides poor services to the public, citizen's trust in government deteriorates, as the result the tax enforcement will apply. Satisfaction of the taxpayer preference is critical for raising more tax revenues. Therefore, the more governments ask citizens to pay taxes, the more the citizens will expect from government (Timmons et al., 2015). It is also important for the government to focus on institutions design, because some institutions in the same government perform more effective in delivering public services than another. Poor institutions in public service delivery need reforms (i.e., Agricultural extension services, water supply, health sector and infrastructure (market places, bus stand and road maintenance).

To answer the question in the title; does citizens trust in government increases willingness to pay taxes in Tanzania? Using logit model, our findings imply citizen's trust in government responds with less willingness to pay taxes for improved public services. One possible explanation for this is that, if better public services/goods are provided, citizens might be willing to pay more taxes. The policy implication is that, providing better public services to the society is an effective tool to raise tax revenues in the government.

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