



A MICROECONOMETRIC STUDY OF TAX COMPLIANCE IN SIERRA LEONE

Abiodun Adewale Adegboye

Obafemi Awolowo University, Ile-Ife, Nigeria

aadegboye@oauife.edu.ng

Abstract

Extant studies have produced scanty policy insights for improving tax compliance in West Africa, where tax evasion and avoidance have remained persistently high and pervasive. Promotion of tax compliance has remained an important and much debated policy and academic issue. Studies attribute tax cheating to weaknesses in tax policy on the one hand and taxpayers' deliberate actions on the other. However, there is a paucity of evidence on the linkage between taxpayers' attitudes and behaviours. This study profiles taxpayers' attitudes using three rounds of taxpayer-level data produced by Afrobarometer. The main proposal of the study is that taxpayer attitudes, experiences with politics, and perceptions of the economy could directly impact their choice to pay taxes or not. To achieve this, the study employed descriptive statistics, binary logistic regression with marginal effect, the Wald test, and ordered logistic regression analysis. Results showed that measures of political participation, health and education, trust, and schooling have a positive and significant relationship with tax compliance and are important to predict tax compliance. Wealth and basic public services also serve as strong predictors of tax compliance attitudes in Sierra Leone.

Keywords: Tax Compliance, Economic Outcomes, Taxpayers' Attitude, Sierra Leone, Evasion

INTRODUCTION

A well-functioning tax system is crucial for developing economies not only to raise tax revenue, expand fiscal space, and achieve sustainable development goals but also to reduce dependence on natural resources and foreign aid. Effective domestic revenue mobilisation helps to undertake public programmes, promote development, and support economic stability. The quantity of revenue that will be realised by the government, however, is dependent on taxpayers' compliance to a country's tax laws (Fjeldstad et al., 2012). There is a high level of tax evasion and avoidance in most developing economies, including Sierra Leone (International Monetary Fund, 2011; and Organisation for Economic Cooperation and Development, 2022) and this has undermined the government's effort to collect as much revenue as possible to provide essential social services. Similar to many developing countries, Sierra Leone, through a variety of reforms, is presently working to increase tax revenue to the level required to spur economic growth and development.

Tax compliance is simply the adherence to all the obligations and duties of tax payments specified by the law of a country. It means the intent of taxpayers to comply with tax regulations through accurate and timely payments (Kiow *et al.*, 2017). Bornman and Ramutumbu (2019) documented a number of ways in which citizens can be tax-compliant. Prominent among these are the payment of levied or assessed taxes on the due date and correctly stating income and deductions. A high level of non-compliance would reduce the amount of resources made accessible to the government, causing negative effects on economic efficiency (Chand and Moene, 1999), income distribution (Hindriks et al., 1999), and so on. Although tax non-compliance is a growing universal issue, experts have argued that developing countries are mostly affected (Cobham, 2005; Fuest and Riedel, 2009). To deal with the issue, it is necessary to identify the elements that determine taxpayers' choice whether to pay taxes or not.

Tax revenues in West Africa are growing but still relatively low, and the region's dependence on natural resources and foreign aid has made it extremely vulnerable to external shocks. More than ever before, the countries in West Africa (with the support of some international development partners) have intensified their attention to tax collection. As shown in Figure 1, Sierra Leone's tax-to-GDP ratio in 2020 was 11.0%, compared to an average of 16.0% of 31 African countries, but much lower than the 34.1% for the OECD countries, according to the OECD's Revenue Statistics in Africa (2022). To increase tax revenue, it is imperative to understand the drivers of attitudes towards taxes, hence this study.

No doubt, human existence and interactions are impacted by politics. The magnitude to which politics affects and defines relationships depends on socio-economic and environmental factors as well as the people. Political participation therefore influences almost everything and leads to changes in standard of living, cost of living, justice, state of health, education, etc. Active participation in politics is the primary mechanism by which citizens engage in, influence, and contribute to the affairs of their states in collaboration with their governments.

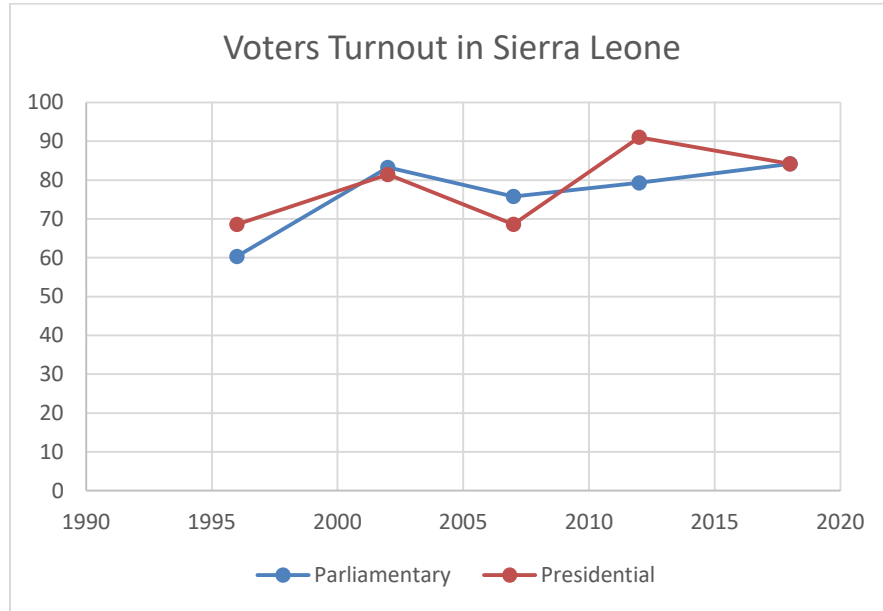
Figure 1: Tax revenue to national output ratio, 2010-2020 (in percent)



Source: OECD Revenue Statistics in Africa (2022)

Figure 2 shows voters' turnout from 1990 to 2020 for both parliamentary and presidential elections in Sierra Leone. The fluctuations in the figure between 2012 and 2018 may be a sign that people have lost interest in participating in politics or that the citizens are not satisfied with the economy and its outcomes, suggesting the probable basis of low morale and non-compliance with tax and other public policies.

Figure 2: Voters' turnout during elections in Sierra Leone



Source: International Institute for Democracy and Electoral Assistance (IDEA)

Citizens' tax compliance may decrease when the credibility of the government is questionable and the citizens are dissatisfied with the government's performance (Torgler, 2003). An expectation of good economic outcomes is an important factor that explains people's participation in governance and the reasons they pay taxes or otherwise (van den Boogaard *et al.*, 2022; and Mallett *et al.*, 2016). Improved economic outcomes (such as a reduction in inequality and employment opportunities) may spur greater participation in politics to retain the incumbent or their political parties, for instance, and give support to the government by paying taxes or whistleblowing against tax fraud or corrupt practices by tax officials. Thus, we argue that people will pay taxes when they participate in politics and when economic outcomes are favourable or improving. In other words, tax administration would enjoy improved compliance and support with growing participation in politics or democratic governance.

The Economy of Sierra-Leone: An Overview

Sierra Leone is a tropical country on the West African coast bordered by the Atlantic Ocean in the southwest, Liberia in the southeast, and Guinea in the north and northeast. She holds a unique place in the history of the transatlantic slave trade. Freetown, the country's capital, was formed in 1787 as a haven for repatriated former slaves from London and the Americas. Sierra Leone has been a British Crown Colony since 1808, but it obtained

independence in 1961. With an area of 71,740 km², her land mass is small, but about 8.4 million people make up her population (see Table 1).

Table 1: Socio-economic outlook in Sierra Leone

Indicator	Value
Population (total)	8,420,641 (2021)
Per capita income	USD 1,615 (PPP) (2021)
Life expectancy at birth	60 years (2020)
Poverty headcount (at \$2.15/day threshold)	26.1*
Corruption perception index	34

Note: PPP - purchasing power parity; * means percentage of population at 2017, PPP (2018).

Source: World Development Indicators (2022) and Transparency International (2022).

Sierra Leone has moderate unemployment at 5.33% in 2021, a 0.14% increase from 2020, and a total dependency ratio of 84.4%. As shown in Figure 1, she experienced a decrease in the tax-to-GDP ratio by 0.8 percent from 11.8% in 2019 to 11.0% in 2020. The highest tax-to-GDP ratio in Sierra Leone was 11.8% in 2019, with the lowest being 7.6% in 2007. The personal income tax contributed the highest (32% share) of GDP in 2020, followed by taxes on goods and services other than VAT, which were 31% (OECD, 2022).

The Research Problem

One main challenge to effective revenue mobilisation is that tax policy in developing countries rarely gets formulated with sufficient understanding of taxpayer's attitudes. Although attitude may not perfectly predict behaviour, for a group of people and a society, the correlation is always high and positive. While a direct tax system may be simple to administer, it may not be possible to achieve the desired tax burden distribution in economies with the type of structure in Sierra Leone or in some tax types (African Development Bank, 2011 and 2018).

In addition, eminent scholars have enunciated the importance of politics in relation to fiscal citizenship (Siegle, 2006; Molutsi, 2012; Adham *et al.*, 2016) and have linked participation in politics to economic development. Umezurike and Danfulani (2015) opined that political participation is a panacea for economic growth, as genuine development cannot be credited to the economy in a democratic society without the active participation of its citizens. Leong (2000) and Gaventa (2002) stress that active citizens' political participation legitimises public policies and enables citizens to claim policy ownership. In light of the above, political participation may also contribute to tax compliance in any economy. A key question is: *Does political participation*

matter for tax compliance in West Africa? Or, broadly, what are the main drivers of tax compliance attitudes in West Africa? Although, within a country-specific framework, factors that determine tax compliance attitudes have been studied for a few African countries (Kenya, South Africa, Tanzania, and Uganda) by Ali et al. (2014), there is a dearth of evidence in Sierra Leone. This study focuses on non-economic factors that determine tax compliance attitudes, but it seems to be the first to interrogate the issue using microanalysis in Sierra Leone. The measures of tax compliance attitude in the study are novel and overcome a number of flaws in empirical methodology from taxpayers' perspectives. We utilised Rounds 5 (2015), 6 (2016), and 7 (2019) of the Afrobarometer Surveys that have a direct measure of tax attitude.

Subsequent sections of this study are organised as follows: Section Two is the literature review, while the methodology is the third. Section Four contains data results and a discussion of findings, and Section Five gives the concluding remarks with policy recommendations.

SUMMARY OF LITERATURE

The tax compliance literature is diverse and extensive but lacks consensus about its drivers. Olufemi (2018) and John *et al.* (2018) claimed that males are more compliant when a negatively framed message is used, but females lead in compliance with a positively framed message. Also, taxpayers' age, employment, academic qualification, and income level contribute to tax compliance (Alexander et al., 2021; and Orumwense *et al.*, 2021), but the middle-income group proved to be the most tax-compliant, as it benefits from government services the most (Inna, 2021). Furthermore, tax compliance would increase if tax knowledge increased (Fahri *et al.*, 2022; Amardianto and Amrie, 2021), awareness of the probability of being audited increased, and tax rates increased (AlMabrouk and Ferdous, 2021; Aronmwan *et al.*, 2017; Tadesse and Goitom, 2014).

Extant studies show that trust and perceptions of government accountability play a role in predicting compliance. Citizens' perception of government is an instrumental factor that shapes the emergence and maintenance of tax morale, resulting in voluntary compliance. Similarly, perceived trust in tax authorities would have a positive influence on taxpayer behaviour, based on Yusri *et al.* (2021); Edrick and Heru (2020); and Areo *et al.* (2020) investigated the variables that influence citizens' tax compliance attitudes in Kenya, Tanzania, Uganda, and South Africa and reported a positive correlation that varies with a specific public service. It was also discovered that people's knowledge of the tax system is also positively associated with their tax-compliance attitude. Alternatively, tax attitudes were adversely connected with regular non-state actors' remuneration as a substitute for safety. However, there is a paucity of evidence on the effect of economic outcomes and political participation on tax

compliance. While scanty insights are available in Kenya, Uganda, Tanzania, and South Africa, almost none exist in Sierra Leone.

METHODOLOGY

Research Area and Design

The study population comprised 18 and older years residents of Sierra Leone who by law are eligible to participate in politics and the labour force (see Afrobarometer 2019). Samples were taken from various locations using the random sample selection at every stage of the sampling of the national population, based on national population sample. Suitable weighting scale was adopted to allow fair representation of the regions. However, the group of people at hospitals, prisons, nursing homes, dormitories was excluded from the selection, even though an equal chance of selection was adopted. As stated by Afrobarometer, “*samples usually include either 1,200 or 2,400 cases. A randomly selected sample of n=1,200 cases allows inferences to national adult populations with a margin of sampling error of no more than +/-2.8 percentage points with a confidence level of 95%. With a sample size of n=2,400, the margin of error decreases to +/-2.0 percentage points at a 95% confidence level. The sample design is a clustered, stratified, multi-stage, area probability sample. Specifically, we first stratify the sample according to the main subnational unit of government (state, province, region, etc.) and by urban or rural location. Area stratification reduces the likelihood that distinctive ethnic or language groups will be left out of the sample. Afrobarometer occasionally purposely oversamples certain populations that are politically significant within a country to ensure that the sub-sample is large enough to be analysed.*”

The Afrobarometer¹ website provides details on the methods, surveys, its instruments and the limitations of the data. This study collected cross-section data from the Afrobarometer Surveys of 2014 (Round 5), 2016 (Round 6) and 2019 (Round 7), and gathered information on democracy, markets, taxation and governance in over thirty-five African countries. The data were analysed with logistic regressions and variables’ measurements² followed the literature.

Model Specification and Estimation Techniques

Based on the theoretical framework of tax behavioural theory as well as insights from previous studies such as Ali *et al.* (2015) we estimated the following probit model:

$$\text{Probability (Tax Compliance)}_i = \alpha_1 + \alpha_2 X_1 + \alpha_3 Y_1 + \alpha_4 Z_1 + \varepsilon_i \quad \dots(1)$$

¹ The Afrobarometer website is accessible through <https://www.afrobarometer.org/surveys-and-methods/>

² This section benefits immensely from insights in Ali *et al* (2014) and Fjeldstad *et al* (2012). These studies provide useful information of variable measurements.

The dependent variable is tax compliance, a *dummy variable with a value of 1 for tax compliance attitude and a value of 0, if otherwise*. X_1 is a vector that represents an individual's age, gender, education, work position, income, tribe, and whether they live in rural or urban areas. Y_1 is a variable vector that reflects the many elements that influence tax compliance attitudes. Z_1 is a vector for capturing fixed effects that are accessible, and ε_1 is the error terms.

The underlying assumption of the model of estimation is that the prediction can either be greater than one or negative. That is the prediction falling outside the range of 0 and 1. However, complications usually arise in the interpretation of the R^2 as it does not create adequate provision for the measurement of equation fit. This is because the magnitude of the dependent variable is restricted to 0 and 1. The data points may not fit well with the application of a linear probability model when creating relatively small values for the R^2 prominent in this kind of application [1]. The marginal effect of each explanatory variable is expressed in Equation 2 as:

[1] See Davidson and Mackinnon (2021a) for a detailed theoretical exposé on probit models and their strength for econometric inference. Ali et al. (2014) discussed its empirical application in a simple manner.

$$\Delta = \Phi(\bar{X}'_i\beta + \gamma) - \Phi(\bar{X}'_i\beta) \quad \dots(2)$$

The first part of the equation indicates the variant of the continuous variables of interest. The result of the equation shows the net effect. Therefore, the study adopts a two-stage least squares regression to cater for the issue of unobservable heterogeneities via instrumental variables that can correlate with the explanatory variables.

RESULTS AND DISCUSSIONS

The percentage computation of tax-compliant and non-compliant across gender, employment status, age groups, and wealth categories is presented in Table 2. It shows that there is a higher percentage of those who are tax compliant compared to the non-compliant ones in Sierra Leone. Males who are in employment and live in urban locations seem to be more tax-compliant. Also, tax compliance is prominent among those with secondary education and those with a higher level of deprivation but reduces with increased levels of education and deprivation.

Specifically, in Table 2, the Round 6 results are fairly similar to the results presented from the analysis of the Round 5 dataset. There were more tax-compliant samples compared to the non-compliant ones, and the tax-compliant group spans across the male gender, those who are employed, and those who live in urban regions. It is, however, interesting to note that tax compliance increased with increased levels of education, contrary to previous findings in Round 5.

Moreover, Table 2 presents a percentage computation of tax-compliant and non-compliant groups across gender, employment status, age groups, and education levels in Round 7. Similar to previous rounds, Sierra Leone had a larger tax-compliant sample compared to the non-compliant ones, and the tax-compliant group spans across the male gender, those who are employed, and those who live in urban regions. Just like in Round 6, tax compliance increased with increased levels of education. However, the Round 7 results are similar to the Round 5 results, as there were tax-compliant people among those with high levels of deprivation.

Table 2: Differences in socio-economic characteristics of respondents

Sierra Leone			
	Complaint Attitude (Round 5)	Complaint Attitude (Round 6)	Complaint Attitude (Round 7)
Total (%)	53.8	62.69	65.41
Male (%)	51.51	64.8	67.28
Employed (%)	53.59	76.69	73.56
Urban (%)	57.07	69.98	66.73
Age (%)			
18-35	52.15	63.92	65.2
36-50	56.28	61.27	65.61
51 and above	55.03	62.87	65.87
Level of Schooling (%)			
No formal education	57.46	56.67	63.14
Primary	57.23	56.96	63.79
Secondary	50.98	68.29	67.03
Post-secondary	49.53	77.71	68.32
*Wealth (%)			
0-0.8	54.69		
1.0-1.8	60.26		
2.0-2.8	48.64		
3.0-4.0	37.33		
No Lived poverty			72.36
Low Lived Poverty			69.96
Moderate Lived Poverty			66.19
High Lived Poverty			47.93
<ul style="list-style-type: none"> This is an index computed by Afrobarometer measuring how often, if ever, anyone in the family has gone without enough food to eat, clean water for home use, medicines or medical treatment, or a cash income, over the previous year. Higher scores signify greater deprivation. The table contains the differences in socioeconomic characteristics between respondents with tax-compliant and non-compliant attitude (% of sample). 			

Table 3 shows the reasons some individuals and enterprises evade taxes. In Sierra Leone, the most prominent reason of all those identified was the one relating to the poor supply of public services and the direct burden of tax payment. The majority of the respondents stated that the taxes are high.

Table 3: Reasons for tax evasion in Sierra Leone

Sierra Leone	
Reasons	%
Unfair tax system	17.3
Taxes are too high	22.5
Taxes are unaffordable	15.6
Poor public services	34.6
The government wastes/steal tax money	6.9
They know they will not be caught	1.1
Greed/Selfishness/Ignorance	0.4
Other	1.6

Source: Computed from Afrobarometer Survey

Table 4 contains the sample size and the Wald test results for the various specifications across the survey rounds. The results showed the fitness of the models for the binary logistic model that is presented in Table 4, where the marginal effects are reported. From the results, *health and education* (an index for respondents' satisfaction with health and educational services) were positive and statistically significant predictors of tax compliance. The results specifically revealed that the higher the level of satisfaction with health and educational services, the higher the probability of tax compliance. This narrative holds true across the various rounds analysed. *Satisfaction with Politicians* (a variable that measures the degree of satisfaction with the performance of the President/Prime Minister, MP/National Assembly, and Local Government Councillor), *Crime and Conflict* (an index for satisfaction with crime, conflict, and corruption), and *Employment and Schooling* variables also have positive relationships with tax compliance in Sierra Leone. Round 7 results also revealed that those who *participated in the most recent election* by voting were more likely to be tax compliant compared to those who did not participate.

In addition, the *difficulty of finding which taxes to pay* has a negative relationship with tax compliance in Round 5. It shows that the more difficult it is to find out which taxes to pay, the lower the probability of tax compliance. However, this same variable changed direction in the Round 5 result. *Wealth*, which is an index measuring deprivation, reflects that an increase in deprivation is associated with a decrease in the probability of tax compliance, and this result

also held in both Round 5 and Round 7 results. The Round 6 results showed those with higher levels of *education* and those who live in *urban* areas have a higher probability of tax compliance.

Table 5 further shows that in Sierra Leone, *unfair treatment of one's own ethnic group* (perceived frequency of discrimination against one's own ethnic group) is negatively associated with tax compliance attitude. This shows that the more frequent the perception of discrimination against one's own ethnic group, the lower the probability of tax compliance. Also interesting to note is the *Payments to non-state actors'* variable, which shows that those who make frequent payments to powerful people or groups other than the government are less likely to be tax compliant.

The infrastructure variable (an index that measures the satisfaction of respondents with water, roads, and electricity) shows that the higher the level of satisfaction, the higher the probability of tax compliance in Sierra Leone.

Table 4: Wald Test of fitness of binary regression estimates

Sierra Leone			
	Round 5	Round 6	Round 7
N	967	1,097	1,080
Pseudo	0.096	0.164	0.076
Chi-square	128.21	238.07	105.9
Prob>chi2	0.000	0.000	0.000

Table 5: Binary logit regressions with marginal effects (Dependent variable=1 if individual thinks it is wrong and punishable not to pay taxes, =0 if otherwise)

Sierra Leone			
Variables	Round 5	Round 6	Round 7
	Marginal Effects	Marginal Effects	Marginal Effects
Age	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)
Male (d)	0.053* (0.031)		0 (0.029)
Self-employment (d)	-0.208*** -0.036	-	-
Employment (d)	0.004 (0.039)	0.197*** (0.029)	0.082** (0.033)
Political Participation (d)	0.057 (0.037)	-0.056 (0.035)	0.157*** (0.043)
Schooling	-0.01 (0.007)	0.028*** (0.006)	-0.001 (0.006)

Wealth	-0.061*** (0.017)		-0.059*** (0.018)
Urban (d)	-0.105*** (0.034)	0.129*** (0.032)	0.056 (0.032)
Managing Economy	-0.081** (0.033)	-0.166*** (0.031)	-0.012 (0.025)
Corruption (Government)	-0.013 (0.032)	0.032 (0.022)	-0.024 (0.020)
Difficulty of evading tax	-0.079*** (0.019)	0.067*** (0.019)	0.005 (0.016)
Health and Education	0.049* (0.027)	0.051*** (0.018)	0.082*** (0.023)
Infrastructure	-0.021 (0.033)	-0.038 (0.027)	-0.058** (0.026)
Crime and conflict	0.007 (0.031)	0.059** (0.022)	0.003 (0.025)
Basic services from the government	-0.095*** (0.029)	-0.163*** (0.025)	-0.011 (0.030)
Payment to non-state actors	-0.052** (0.019)		
Perceived non- compliance of others	0.007 (0.017)		
Unfair treatment of own ethnic group	-0.023 (0.020)	-0.007 (0.017)	-0.031* (0.017)
Trust	0.032* (0.017)	-0.017 (0.014)	-
Corruption (Tax Officials)	-0.001 (0.023)	-0.004 (0.018)	-
Satisfaction with politicians	0.02 (0.027)	0.039* (0.021)	0.069*** (0.016)
Democracy	-0.006 (0.018)	-0.002 (0.013)	0.006 (0.015)
Difficulty of finding which taxes to pay	0.053** (0.024)	-0.055*** (0.016)	-
Value added tax (d)	0.077** (0.037)	-	-
Region fixed effects	YES	YES	YES
Ethnicity fixed effects	YES	YES	YES
Religion fixed effect	YES	YES	YES

Table 6: Ordered logit regressions with marginal effects (Dep variable = 3 if an individual thinks it is wrong and punishable not to pay taxes, =2 if an individual thinks it is wrong but understandable not to pay taxes, and =1 if one thinks it is not wrong) - Round 5

Sierra Leone			
VARIABLES	Not Wrong at all	Wrong but understandable	Wrong and punishable
Age	0 (0.000)	0.001 (0.001)	-0.001 (0.001)
Male (d)	-0.017* (0.009)	-0.042** (0.021)	0.059** (0.029)
Self-employment (d)	0.056*** (0.012)	0.142*** (0.025)	-0.198*** (0.035)
Employment (d)	0.002 (0.011)	0.006 (0.027)	-0.009 (0.038)
Schooling	0.002 (0.002)	0.005 (0.005)	-0.007 (0.006)
Wealth	0.017*** (0.005)	0.044*** (0.012)	-0.061*** (0.016)
Urban (d)	0.025** (0.010)	0.063** (0.023)	-0.088** (0.032)
Political Participation	-0.021* (0.005)	-0.048* (0.025)	0.069* (0.036)
Managing Economy	0.024** (0.009)	0.060** (0.023)	-0.083** (0.032)
Perception Corruption (Government)	0.005 (0.009)	0.013 (0.022)	-0.018 (0.031)
Difficulty of evading tax	0.021*** (0.006)	0.053*** (0.013)	-0.074*** (0.018)
Health and Education	-0.014* (0.007)	-0.034* (0.018)	0.048* (0.025)
Infrastructure	0.006 (0.009)	0.015 (0.023)	-0.021 (0.032)
Crime and conflict	-0.005 (0.009)	-0.013 (0.022)	0.018 (0.030)
Basic services from the government	0.025*** (0.008)	0.063*** (0.020)	-0.088*** (0.028)
Payment to non-state actors	0.015** (0.005)	0.037** (0.013)	-0.051** (0.018)
Perceived non-compliance of others	-0.004 (0.005)	-0.01 (0.012)	0.014 (0.016)
Unfair treatment of own ethnic group	0.007 (0.005)	0.017 (0.013)	-0.023 (0.019)

Trust	-0.009*	-0.022*	0.031*
	(0.005)	(0.011)	(0.016)
Corruption	0.003	0.009	-0.012
	(0.006)	(0.016)	(0.022)
Satisfaction with politicians	-0.006	-0.016	0.022
	(0.008)	(0.019)	(0.027)
Democracy	0	0.001	-0.002
	(0.005)	(0.013)	(0.017)
Difficulty of finding which taxes to pay	-0.011*	-0.029*	0.040*
	(0.007)	(0.016)	(0.023)
Value added tax (d)	-0.020*	-0.052**	0.072**
	(0.010)	(0.026)	(0.036)
Region fixed effects	YES	YES	YES
Ethnicity fixed effects	YES	YES	YES
Religion fixed effect	YES	YES	YES

Note: Standard errors in parentheses. d = dummy variable..*p<0.10. **p<0.05.***p<0.01

Table 6 contains the results for the robustness check of the Round 5 data; similar results for Round 6 are omitted to save space but are available upon request. However, based on variable measurement, Round 7 data is unfit for the same treatment. This is different from the results in Table 5, for it is an ordered logistic regression. The outcome variable (Tax Compliance) has three ordered responses: not *wrong at all*, *wrong but understandable*, *wrong and punishable*. The results from the binary logistic analysis are consistent with the results from the ordered logistic regression. The table shows that the results from Round 5 analysis reflect that *health and education*, *trust*, and *value-added tax* have a positive relationship with *tax compliance*, while *wealth*, *self-employment*, *payments to non-state actors*, and the *difficulty of finding which taxes to pay* have negative relationships with *tax compliance*. The only difference is in the *political participation*, which was positive and significant in the ordered logistic model but was not significant in the binary logistic model. The result from Round 6 of the ordered probit analyses was also similar to the results from the binary logistic model for Sierra Leone. However, there are a few exceptions. The perception of *corruption (government)*, which was not a significant predictor of *tax compliance* in the binary logistic model, emerged as a significant predictor in the ordered logistic model.

DISCUSSION OF FINDINGS

The entire set of explanatory variables in the model can be classified as non-economic. Public health, education, infrastructure, and basic services emerge as important predictors of

tax compliance attitudes. The effect was positive throughout the entire round, suggesting that citizens expect to enjoy public goods and services as they exercise their right to pay taxes. This upholds the benefit theory that the gains in society from tax payment would drive citizens' compliance. By implication, the higher the level of satisfaction with health and educational services, the higher the likelihood of being tax-compliant (Ali *et al.*, 2014; AlMabrouk and Ferdous, 2021; and Orumwense and Doris, 2021).

Furthermore, access to public infrastructure was a positive and significant factor in explaining tax compliance attitudes. A negative sign of basic service suggests that when citizens access public infrastructure but are less satisfied with the services rendered, it might prevent them from paying their taxes, disregarding the punishment attached to evading tax and supporting an unfavourable attitude towards taxation. This emphasises the need for the government to provide better infrastructure to encourage tax compliance, as suggested by the OECD (2013). The political legitimacy indicator includes trust, corruption (among tax officials), satisfaction with politicians, and political participation. As in the literature, the importance of *trust* remains central to taxation. Either trust in government officials or in tax administration matters; it matters how the government builds it. The higher the level of trust in government institutions, the greater the likelihood of being tax compliant (Tang and Chang, 2021; Orumwense and Aiwoho, 2021). Therefore, greater transparency, improved access to public services, and a low tax burden are factors that may help increase the level of trust in government (Coita *et al.*, 2021). Participation in politics has both a positive correlation and a causal relationship with tax compliance [1]. Individuals that are active in politics might also have favourable attitudes towards taxation, in accordance with Isbell (2017) [2]. Involvement of individuals in political activities motivates their decision to be tax compliant and seek punishment for tax evaders. Thus, political parties and platforms may contribute to improved tax attitudes through the creation of awareness in their manifestos. Similarly, the government may choose to have a regular public discourse on taxation as a development instrument.

The perception of corruption among tax officials has a positive and significant relationship with tax compliance but is the antithesis of extant evidence. That taxpayer's pay less attention to fraud among tax administrators does not imply an endorsement of corrupt practices but is a signal that other factors might be at play. Studies in South Africa and Uganda showed that corrupt practices among tax officials eroded the likelihood of tax compliance. This study also contradicts Bertinelli *et al.* (2018) and Jibril *et al.* (2020), who found bribe-giving to tax authorities to negatively influence tax compliance. Also, lack of knowledge and complexity in the tax system are negative predictors of tax compliance attitudes. Hence, the more people find it difficult to identify the tax to pay, the less likely they are to comply. Sierra Leoneans recognise

knowledge of tax as an 'aid' to tax payment but tend to switch behaviours with time and circumstances. That is, their decision could be short-term, and they may seek knowledge but still not pay at some points, regardless of the punishment attached to tax evasion. This corroborates Ali *et al.* (2014) for Kenya, South Africa, Tanzania, and Uganda; Nurlis and Ariani (2020); Indonesia; and Isbell (2017) on Africa. Perhaps a lack of proper tax awareness makes it difficult for people to identify the tax to pay and how to pay it. Thus, tax awareness can strengthen decisions to be tax-compliant, and the onus is on tax authorities to reinforce these tendencies. Moreover, the level of awareness of VAT causes a tax attitude, and it suggests that the more information people have on VAT, the higher their likelihood of paying taxes. This is because VATs are already on the goods and services to be consumed, supporting the claims by Areo *et al.* (2020) and Ershaid (2021) in Nigeria and Tabuk region, respectively, and in Kenya, South Africa, Tanzania, and Uganda by Ali *et al.* (2014).

In the socio-economic sense, people who live in urban centres and have experienced schooling are more likely to be tax-compliant. Similarly, satisfaction with the manner in which the economy is being managed, leading to food security and employment, would help an individual's tendency to pay taxes. However, the deprivation index has a negative effect and suggests that individuals will not comply. Satisfaction with the management of the economy in Sierra Leone shows a negative but statistically robust tax-compliant attitude over the course of the study. Dissatisfaction makes them evade tax regardless of the punishment that may accompany it, confirming Beach and Boogaard's (2022) findings on Sierra Leone, van den Boogaard *et al.* (2022), and Mallett *et al.* (2016).

CONCLUSION

West Africa has low tax compliance levels, an impediment to tax mobilisation. There is scanty country-specific evidence in Sierra Leone. Also, the existing evidence lacks reliability in the data, methodology, and measurements of compliance attitude. Most studies in West Africa are not replicable, the data is inaccessible, and the findings lack implementable policy actions. Unlike previous studies, the Afrobarometer surveys that we applied contain more tax-specific data. In addition, the study's measure of tax compliance attitude addresses shortcomings in the measure of compliance attitude used by earlier studies, which utilised proxies that mixed attitude towards tax with attitude towards perception of tax enforcement. Most importantly, this study attempts to profile taxpayers' attitudes in Sierra Leone by assessing their consistency over a seven-year period.

Political participation, health, education, knowledge of value-added, and schooling are important to being tax compliant. Wealth and basic public services are also vital predictors, but

they negatively influence compliance attitudes. Affordability, the amount of taxes, and public goods provision emerged as the top three reasons in Sierra Leone. People who are educated, participate in politics, and also live in urban areas tend to be more tax-compliant. They become more favourable towards taxation as they gain more education. Trust and unfair treatment of one's own ethnic group are important correlates of tax compliance. Note that the findings vary with the models and measurements of compliance attitudes. Tax reforms should be designed in a manner that guarantees progress in taxpayers' experiences and perceptions of the tax system. Thus, tax authorities should formulate and implement reform measures with the understanding that taxpayers are economic agents who possess capabilities for both adaptive and rational expectations. Future studies may attempt to expand the profile of taxpayers' attitudes and perceptions with additional surveys in the post-COVID era.

ENDNOTES

[1] This was established with ordered logistic regression. When treated alone, the results are sufficient to support the claim that political participation would enhance tax mobilisation.

[2] Isbell (2017) found that in Africa, there is a high positive correlation between having free, fair elections and supporting the government through tax payments.

REFERENCES

- Adeniran, A., Ekeruche, M. A. & Onykwena, C. (2021). The role of social influence in enforcing tax compliance: Experimental evidence from Nigeria. *ICTD Working Paper 122*.
- Adhikari, B., Alm, J., & Harris, T. F. (2021). Small business tax compliance under third-party reporting. *Journal of Public Economics*, 203, 104514.
- Ali, M., Fjeldstad, O. H., & Sjurson, I. H. (2014). To pay or not to pay? Citizens' attitudes toward taxation in Kenya, Tanzania, Uganda, and South Africa. *World development*, 64, 828-842.
- AlMakhzoum, A. M. & Azam, S. F. M (2021). Critical factors of tax compliance behaviour among small and medium enterprises in Libya. *Turkey Online Journal of Qualitative Inquiry*, 12(10), 1228-1249.
- Amaning, N., Anim, R. O., Kyere, A., Kwakye, G., & Abina, S. (2021). Tax Compliance among Ghanaian SMEs: How impactful is Taxpayer Education? *International Journal of Academic Research in Business and Social Science*, 4(1), 40-58.
- Amardianto A., & Amrie F. (2021). The role of behavioural theory in the research of MSMEs tax compliance in Indonesia. *Jurnal Aplikasi Ekonomi Akuntansi dan Bisnis*, 1, 417-432.
- Areo O., Gershon O., & Osabuohien E. (2020). Improved public services and tax compliance of small and medium scale enterprises in Nigeria. A generalized ordered logistic regression. *Asian Economic and Financial Review* 10(7), 833-860.
- Aronmwan J., Imbhio E., & Izedonmi F. (2017). Determinants of personal income tax compliance perception of Nigerian taxpayers. *Economics, Political Economy, Development, Fiscal and Monetary Policy E-Journal*, 17.
- Beach, R. & van den Boogaard, V. (2022). Tax and governance in the context of scarce revenues: Inefficient tax collection and its implications in rural West Africa. *ICTD Working Paper 139*. <https://doi.org/10.19088/ICTD.2022.005>
- Benno T., (2003). Beyond punishment: A tax compliance experiment with taxpayers in Costa Rica. *Economic Analysis Review*, Universidad Alberto Hurtado/School of Economics and Business, 18 (1), 27-56.

- Bertinelli, L., Bourgain, A., & Léon F. (2020) Corruption and tax compliance: Evidence from small retailers in Bamako, Mali. *Applied Economics Letters*, 27(5), 366-370. <https://doi.org/10.1080/13504851.2019.1616057>
- Bornman, M., & Ramutumbu, P. (2019). A tax compliance risk profile of guesthouse owners in Soweto, South Africa. *The Southern African Journal of Entrepreneurship and Small Business Management*, 11(1), 1-14. <https://doi.org/10.4102/sajesbm.v11i1.181>
- Cabelkova, I. (2021). Sustainability of state budgetary expenses: Tax compliance of low-, middle-, and high-income groups—The evidence from the Czech Republic. *Sustainability*, 13(16). <https://doi.org/10.3390/su13168966>
- Castro J.F., Velásquez D., & Yamada G. (2020). *Spillovers and long-run effects of messages on tax compliance: Experimental evidence from Peru*. IZA Discussion Papers 13974, Institute of Labor Economics (IZA).
- Chand, S. K., & Moene, K. O. (1999). Controlling fiscal corruption. *World Development*, 27(7), 1129-1140. [https://doi.org/10.1016/S0305-750X\(99\)00050-9](https://doi.org/10.1016/S0305-750X(99)00050-9)
- Cobham, A. (2005). *Tax evasion, tax avoidance and development finance*. Queen Elizabeth House Working Paper 129, Oxford: Oxford University. <http://www.sataxguide.co.za/wp-content/uploads/2015/03/Tax-easion-tax-avoidance-and-development.pdf>
- Coita, I. F., Cioban, S., & Mare, C. (2021). Is trust a valid indicator of tax compliance behaviour? A study on taxpayers' public perception using sentiment analysis tools. *The 4th International Conference on Economics and Social Sciences Resilience and economic intelligence through digitalization and big data analytics*.
- Davidson, R. & MacKinnon, J.G. (2021a). *Econometric Theory and Methods*. Oxford University Press, New York. ISBN 0-19-512372-7
- Davidson, R. & MacKinnon, J.G. (2021b). *Estimation and inference in Econometrics*. Oxford University Press, New York. ISBN 0-19-506011-3.
- De Neve, J. E., Imbert, C., Spinnewijn, J., Tsankova, T., & Luts, M. (2021). How to improve tax compliance? Evidence from population-wide experiments in Belgium. *Journal of Political Economy*, 129(5), 1425-1463.
- Doerrenberg P. & Schmitz J. (2015). *Tax compliance and information provision: A field experiment with small firms*. ZEW - Centre for European Economic Research Discussion Paper No. 15-028.
- Ershaid, O. N. (2021). The attitudes of VAT taxpayers toward the use of E-tax systems and their impact on tax compliance: A field study of Tabuk Region. *Journal of Contemporary Issues in Business and Government*, 27(1), 1-19.
- Fjeldstad, O., Schulz-Herzenberg, C. & Sjursen, I.H. (2012). *Peoples' views of taxation in Africa: A review of research on determinants of tax compliance*, CMI Working Papers 7, Chr. Michelsen Institute, Bergen, Norway.
- Fuest, C., & Riedel, N. (2009). Tax evasion, tax avoidance and tax expenditures in developing countries: A review of the literature. *Report prepared for the UK Department for International Development (DFID)*, 44.
- Gaventa, J. (2002). Towards participatory governance. *Currents*, 28, 29-35
- Giulia M., & Christopher N. (2021). Tax compliance in Rwanda: Evidence from a message field experiment. *Economic Development and Cultural Change* 70(2), 234-300.
- Hebous, H., & Zhiyang, J., Knut, L., Thor, O., & Arnstein Ø. (2020). Do audits improve future tax compliance in the absence of penalties? Evidence from random Audits in Norway. *CESifo Working Paper Series* 8480.
- Isbell, T. (2017). *Tax compliance: Africans affirm civic duty but lack trust in tax department*. Afrobarometer Policy Paper 43.
- Jalia, K., Kieran, R., & John, K. (2020). *Tax compliance of wealthy individuals in Rwanda*. ICTD Working Paper 109, Brighton: Institute of Development Studies
- Jibao, S. S., & Prichard, W. (2015). The political economy of property tax in Africa: Explaining reform outcomes in Sierra Leone. *African Affairs*, 114(456), 404-431.
- John, P., & Blume, T. (2018). How best to nudge taxpayers? The impact of message simplification and descriptive social norms on payment rates in a central London local authority. *Journal of Behavioral Public Administration*, 1(1).
- Kahneman, D., & Amos, T. (1979) .On the interpretation of intuitive probability: A reply to Jonathan Cohen. *Cognition*, 7(4), 409-411. [https://doi.org/10.1016/0010-0277\(79\)90024-6](https://doi.org/10.1016/0010-0277(79)90024-6)
- Kazi M., Handaker F., & Omar (2020). *Socio-economic factors of tax compliance: An empirical study of individual taxpayers in the Dhaka Zones, Bangladesh*, MPRA Paper 108278, University Library of Munich, Germany.

- Kettle, S., Hernandez, M., Ruda, S., & Sanders, M. (2016). *Behavioural interventions in tax compliance: Evidence from Guatemala*. Policy Research Working Paper Series 7690, The World Bank.
- Kojo, T., Martin, A., Ebenezer, A., Martin, A., Daniel, E., & Charles, A. (2020). Tax knowledge and tax compliance of small and medium enterprises in Ghana. *South East Asia Journal of Contemporary Business, Economics and Law*, 21(5), 222-231.
- Luisito, B., Arnaud B., & Florian, L. (2018). *Corruption and tax compliance: Evidence from small retailers in Bamako, Mali*. DEM Discussion Paper Series 18-18, Department of Economics at the University of Luxembourg.
- Mallett, R. (2016). *Informal taxation in ungoverned spaces*. The SAIS Review of International Affairs, 36(1). 39 – 46.
- Maria, J., Milly, I., & Ronald, W. (2021). *Do tax administrative intervention targeted at small businesses improve tax compliance revenue collection? Evidence from Ugandan administrative tax data*. WIDER Working Paper Series WP-2021-17, World Institute for Development Economic Research (UNU-WIDER)
- Mohammed, A., Idawati I., & Noraza (2020). An investigation of the determinants of tax compliance among Yemeni manufacturing SMEs using the Fisher model. *International Journal of Psychosocial Rehabilitation* 24(4), 1809-1824.
- Muehlbacher, S., Barbara, H., & Erich, K. (2017). Mental accounting and tax compliance: Experimental evidence for the effect of mental segregation of tax due and revenue on compliance. *Public Finance Review*, 45(1), 118-139.
- Murad, A., & Mosab, A. (2020). Extension of the TPB in tax compliance behaviour: The role of moral intensity and customs tax. *International Journal of Scientific and Technology Research*, 9(4), 227-232.
- Musa, A., Adamu, J., & Tasiu, M. (2020). Analysis of tax compliance in sub-Saharan Africa: Evidence from firm-level study. *Econometric Research in Finance* 5(2), 119-142.
- Natrah, S. (2014). Tax knowledge, tax complexity and tax compliance: Taxpayers' view. *Procedia Social and Behavioral Sciences* 109, 1069-1075
- Ngunjiri, W. (2021). *Factors affecting residential rental income tax compliance among landlords, Nyeri municipality, Kenya*. (Postgraduate diploma thesis, Kenyatta University of Agriculture and Technology).
- Nurlis, N., & Ariani, M. (2020). Tax Awareness Moderates Knowledge and Modernisation of Tax Administration on Tax Compliance, Survey on MSME taxpayers in South Tangerang City, Indonesia. *International Journal of Management Studies and Social Science Research*, 2(5), 250-259.
- Okeke, C., & Salaudeen, Y. (2021). *Tax reform and tax compliance behaviour of companies in Nigeria*. MPRA Paper 111367, University Library of Munich.
- Olufemi, A. (2018). Measuring tax compliance among small and medium enterprises in Nigeria. *International Journal of Accounting and Taxation*, 6(2), 29-40.
- Onykwena, C. (2021). The role of social influence in enforcing tax compliance: Experimental evidence from Nigeria. ICTD Working Paper 122.
- Organisation for Economic Cooperation and Development (2013). Measures of Tax Compliance Outcomes – A Practical Guide. *OECD Scoping Document*.
- Ortega, D., & Sanguinetti, P. (2013). *Deterrence and reciprocity effects and tax compliance: Experimental evidence from Venezuela*. Research Department Working Papers 253, CAF Development Bank of Latin America.
- Ortega, D., Ronconi, L., & Sanguinetti, P. (2012). *Reciprocity and willingness to pay taxes. Evidence from a survey experiment in Latin America*. Research Department Working Papers 230, CAF Development Bank of Latin America.
- Orumwense, K., & Aiwoho, D. (2021). Determinants of tax morale and tax compliance: Evidence from Nigeria. *Journal of Contemporary Issues in Accounting* 2(1), 36-53.
- Ozturk, I., (2010). A literature survey on energy-growth nexus. *Energy Policy*, 38(1), 340-349.
- Putra, E. P., & Tjaraka, H. (2020). Tax law enforcement in strengthening tax compliance behavior of individual taxpayers. *Jurnal Akuntansi*, 24(1), 154-168. <https://doi.org/10.24912/ja.v24i1.664>
- Richmell, A. (2016). Tax compliance among small and medium scale enterprises in Kumasi Metropolis, Ghana. *Journal of Economics and Sustainable Development*, 7(16), 5-16.
- Saeed, B., Ahmed, A., Munusamy, M., & Abobakr, R. (2020). Study on system fairness dimensions and tax compliance in the Middle East context. *Problem and Perspectives in Management*, 18(1), 181-191.
- Sentanu, I. N. W., & Budiarta, K. (2019). Effect of taxation modernization on tax compliance. *International Research Journal of Management, IT and Social Sciences*, 6(4), 207-213.

- Siegle, J. (2006). Why democracy is central to prosperity and peace? A publication of the African Centre. <https://africacenter.org/wp-content/uploads/2016/04/Why-Democracy-is-Central-to-Prosperty-and-Peace-Joseph-Siegle.pdf>
- Sunardi, S., Damayanti, T., Supramo, S., & Hermanto, Y. (2022). Gender, perception of audits, access to finance, and self-assessed corporate tax compliance. *Economies*, MDPI, 10(3), 1-12.
- Susuawu, D., Ofori-Boateng, K., & Amoh, J. (2020). Does service quality influence tax compliance behavior of SMEs? A new perspective from Ghana. *International Journal of Economics and Financial Issues* 10(6), 50-56.
- Syanti, D., Widyasari, & Nataherwin, (2020). The perception of individual taxpayers in Jakarta towards tax attitude as a moderating variable. *Advances in Economics, Business and Management Research*, 174, 336-340.
- Tadesse, E., & Goitom, A. (2014). Factors influencing taxpayers' compliance with tax system: An empirical study of elleMek city, Ethiopia. *E-journal of Tax Research*, 12(1) 433-452.
- Taing, H. B., & Chang, Y. (2021). Determinants of tax compliance intention: Focus on the theory of planned behavior. *International Journal of Public Administration*, 44(1), 62-73. Available at: <https://doi.org/10.1080/01900692.2020.1728313>.
- Trivedi, V., Mohamed S., & Stuart, M. (2005). *Attitudes, incentives and tax compliance*. Department of Economics Working Papers 2004-08, McMaster University.
- Umezurike, G. & Danfulani, D. (2015). Political participation as a catalyst for national development in a democratic society. *Research on Humanities and Social Sciences*, 5(14), 2225 -0484
- Van den Boogaard, V., Prichard, W., Beach R, & Mohiuddin, F. (2022). Enabling tax bargaining: Supporting more meaningful tax transparent and taxpayer engagement in Ghana and Sierra Leone. *Development Policy Review*, 40(1).
- Yusri, J., Farah, A., Siti, N., & Wan, N. (2021). The effect of tax knowledge, tax complexity and tax morale towards tax compliance behaviour among salaried group in Malaysia. *Advances in Business Research International Journal*, 7(2), 250-266.