Determinants of Business Tax Compliance: A Case Study of Togo

Koku Eli SOGLO & Y.M.Isaac AMEDANOU

CERDI, UNIVERSITY OF CLERMONT AUVERGNE, CNRS, F-63000 CLERMONT-FERRAND, FRANCE

Abstract. What are the factors determine the willingness of businesses to pay taxes? We address this question using data from a survey on tax consent from the Office of Togolese Revenue (OTR) in 2019 covering 413 formal firms. To do so, we construct two tax compliance measures. The potential determinants of tax compliance include tax fraud appreciation, tax laws amendment, tax knowledge, tax beneficiaries, bribes, severity of penalties, legitimacy of customs duties, tax amount appreciation, tax burden, legitimacy of VAT and geographical location of the firms. The results show that all these factors are key determinants of voluntary tax compliance except for the tax laws amendment, tax amount appreciation and the tax burden. When we isolate the *Maritime* region, the result remains unchanged except that the appreciation of tax fraud has no significant impact on voluntary compliance in that region. Finally, the determinants vary once we differentiate businesses by size, either nationally or regionally.

Keywords: Tax Evasion · Tax Compliance · Togo · Tax Consent · Firms

1 Introduction

Why do we have to pay taxes? This is the question that many people ask themselves very often, both firms and households. Others are asking in a completely different way, i.e. what is the utility of paying taxes? In reality, the answer to these questions can be found in our daily life. Paying taxes is to participate in the budget necessary to make country function. It is well-known fact that to educate, to care for and defend the population, to build roads, to support businesses, to help the poor, etc.,governments need money and to to get this money, a regulated framework is required. In this respect, the government levy or collect the money from people and businesses according to well established rules in the form of taxes. Although, it is unanimously accepted that to run affairs of the State, it is obligation for the people and businesses to pay taxes but unfortunately this is not convincing for all agents to pay. In this regard, the data show that this is not the case. Some taxpayers try to avoid paying taxes. Their perceptions and attitudes reflect a lack of consent to pay taxes or illustrate fraudulent practices: this is so called tax evasion or tax non-compliance.

Tax compliance is defined as the set of perceptions and attitudes of taxpayers -individuals or corporate taxpayers- that result in tax consent or in tax evasion or avoidance. In other words, tax compliance is defined as the willingness of individuals and taxable entities to act in accordance with the tax laws and administration in letter and spirit without the requirement to use coercive actions (James & Alley, 2002). It is considered as the commitment of citizens or the attitude of taxpayers in respecting their declarative and payment obligations by filing their declarations on time and paying their due taxes. However, in the event of non-compliance, there are negative consequences on tax collection, resulting in a significant loss of tax resources that are intended to be used to fund the country's basic needs.

In Togo, the mobilisation of tax revenue is at the forefront of the agenda of the State in pursuit of sustainable development. To achieve this, they have embarked on wide-ranging tax reforms with a common structure called the Office of Togolese Revenue (OTR) by combining customs and tax administration.[1] The reforms are intended to increase tax revenues significantly, to give the public authorities the necessary funds to operate and the capacity to fully assume their regalian functions. However, we observe that Togo is characterised by a fiscal paradox, that is of relatively high tax rates but with very low tax returns. Hence, the challenges remain significant, which require considerable efforts both from tax authorities and citizens.

In this respect, tax authorities have been continuously introducing a set of measures to support the national economy and to encourage investment. For example, in 2021, entrepreneurs and businesses benefited from tax relief measures.[2] Moreover, the tax authorities have embarked on a process of bringing the tax administration closer to the taxpayers through holding of tax citizens days. This approach consists of making taxpayers to understand the necessity and importance of respecting their tax obligations by complying with their tax reporting and payment obligations. But, by all this initiatives, there are still some serious questions those needs to be asked whether awareness campaigns raise taxes or tax relief initiatives that are sufficient enough to prevent non-compliance with tax obligations?

In our view, to better tackle tax avoidance, it is necessary to identify the underlying factors mentioned above. So, this study aims to identifying the important determinants that influence Togolese corporate taxpayers to meet their tax obligations. The originality of this paper is that it is actually based on reliable data obtained directly from the Togolese Tax Office. In addition, the survey includes 413 companies of different sizes (small, medium and large) spread throughout the country, and covering different geographical locations including the five administrative regions (*Maritime, Plateaux, Centrale, Kara and savane*).

Our results are consistent with those in the literature. The results can be summarized as follows: first, factors such as geographical location, tax evasion assessment, bribes, tax knowledge, tax beneficiaries, the severity of penalties and the cost of legitimate customs duties have significant positive relationship with voluntary tax compliance. On the other hand, factors such as the size of the company and the legitimacy of VAT have disincentive effect on voluntary tax compliance. Furthermore, no significant relationship found between factors including the tax burden, the amendment of the tax laws and the tax paid. Another important finding is that the determinants vary depending on whether the enterprises under consideration are small, medium or large. Finally, we separated the *Maritime* region because it contains a large part of the sample. The results reveal that factors such as bribes, severity of penalties, legitimacy of customs duties,

[1] OTR was created by law $n2012 - 016$ of 10 December 2012 adopted unanimously by the people' s representatives. It combines the general directorates of Customs and Taxes within a unique structure. It is responsible for collecting taxes and customs duties on behalf of the state and local authorities. The OTR is also in charge of (i) advising or representing the government in tax and customs matters (ii) promoting voluntary tax compliance (iii) combating fraud, tax evasion and corruption (iv) producing statistics on the revenue collected.

[2] Various tax relief measures have been announced: 1- For start-ups and micro-businesses, the single professional tax has been reduced by 93%. 2- Individuals with a turnover of 60 million CFA francs or less and who are subject to the single professional tax (TPU) will only have to pay $20,000$ CFA francs, against $300,000$ CFA francs the preceding year. 3- Registration and licensing fees from 5 to 1.5% are maintained; this measure also applies to the registration of buildings. Also, the registration fee for a real estate exchange has been reduced to 0.6% from 6% in 2020 and the fee for the parcelling of land from 1 to 0.3%. 4- Businesses can temporarily declare their annual results and regularise the statements within the following three months. Patente, the filing of corporate tax statements, the minimum lump sum and rent withholding have also been adjusted.This year, the rate of rent withholding is 8.75% compared to 12.5% in 2020.

tax knowledge, tax beneficiaries encourage businesses to comply voluntarily with paying taxes. While, the size of business and the legitimacy of VAT lead to tax evasion. Similarly, we find that the determinants vary depending on the size of business at the regional level.

The paper is organized as follows. Section 2 relates our work to the existing literature. In section 3, we present a brief description of data, the conceptual framework, and empirical methodology. Section 4 presents and discusses the various findings of both the baseline models and robustness checks. Finally, the last section concludes, derives policy implications and presents some possible directions for future research.

2 Related literature

A part of the existing literature on tax revenues collection has often been focused on the different reasons why some taxpayers evade paying taxes. At the outset, some studies divide tax compliance into different approaches in order to better understand the factors that affect the behaviour tax compliance. For instance McBarnet et al. (2019) distinguish four types of compliances. The first type is called *committed compliance* which assumes that taxpayers will obey tax laws without any complaint. The second type, the so-called *capitulative compliance* witch occurs at the stage of tax reporting where taxpayers report their taxes in inappropriate ways, for example by cutting expenses or making cash savings in the operation of their business. In the third one, *non compliance* where taxpayers rely on tax experts to help them in interpreting the tax laws, allowing them to manipulate their taxes. Finally, the *creative compliance* refers to the case where taxpayers will find weaknesses in tax laws by redefining them for their profits and recalculating their costs when they file their taxes. Likewise, We also distinguish two other types of compliances, namely *administration* and *accuracy* of the tax returns, which are highlighted in the Chow (2004) that taxpayers are free when filing their tax returns, and that determines their ability to file their tax returns well in time each year and to pay the tax accurately.

Over and above the studies that have distinguished different forms of tax compliance (Chow, 2004; McBarnet et al., 2019), many others have explored the underling factors. Among them, some have been interested in the compliance of individual taxpayers. In this respect, several studies have provided a theoretical framework to explain the factors those influence individual compliance (see Fischer et al., 1992; Cuccia, 1994; Devos, 2014). These theoretical models explain different aspects. Firstly, there is a human aspect which considers that individuals interact with each others in accordance with the social norms prevailing in a society witch do not permit them to maximize their utility. Nevertheless, factors related to human behaviour in terms of beliefs, attitudes, and norms are concern of the concept of the behaviour compliance. The other aspects such as sociological factors like age and gender, education, level of income, sources of income and employment are also considered to measure the possibilities of non-compliance. Similarly, the other aspects related to tax complexity, sanctions, the fear of being detected, tax burden, and the moral level of taxpayers.

Moreover, some of the literature also review the tax compliance focusing on empirical evidence by exploring different empirical findings based on geographical areas under study or the estimation methods/techniques used. For instance, authors such as Torgler, 2011; Torgler & Schneider, 2007; Heinemann, 2011; Torgler et al., 2008; Hug & Spörri, 2011; Marien & Hooghe, 2011; Frey & Torgler, 2007, have established a positive link between individual taxpayers' tax compliance and number of factors like trust in government, legal system, trust in democracy, the military and police, religion and institutional quality. On the contrary, moral conservatism and ethnic

fragmentations are factors that reduce the incentives for tax compliance of individual taxpayers according to Marien & Hooghe, 2011 and Lago-Peñas & Lago-Peñas, 2010. Furthermore, Bobek, Hageman, and Kelliher (2013) have shown that social norms also have an important influence on the behaviour of tax compliance both directly and indirectly. More precisely, their analysis show that the ethical beliefs of individuals (personal norms) and the expectations of relatives (subjective norms) directly influence tax compliance decisions, while the general expectations of society (injunctive norms) and the actual behaviour of other individuals (descriptive norms) exert an indirect influence.

The other strand of the literature which mainly focuses on the determinants of corporate tax compliance is more relevant to our study. Although most of the factors are used repeatedly in many studies as determinants of corporate tax compliance, but the results are still different in the empirical findings. Certain researchers have classified taxpayers' compliance behaviour according to firm characteristics such as, size, nationality of manager, sector and type of firms. For example, Hanlon et al. (2005) observe that small-sized firms are described as more non-compliant than that of medium but the medium-sized firms are more tax compliant than the large firms. Likewise, domestic firms are more compliant than that of foreign-owned firms. And, state-owned firms are supposed to be more compliant than private that of private firms, while non-multinational firms tend to be more compliant than multinational ones. In contrast, Alm and McClellan (2012) argue that domestic firms evade taxes more and declare less than foreign and state-owned firms. In parallel, other studies have examined the impact of taxpayer knowledge and sanctions on corporate tax compliance such as Oladipupo and Obazee (2016) find that tax knowledge has positively impact tax compliance, but the tax penalty has no significant effect on tax compliance. Whereas Virmani (1989) predicts that avoidance may increase with higher penalties, assuming that firms respond to harsher penalties by lowering production to reduce the probability of detection, which may offset the higher cost of avoidance due to the higher penalty rates, and thus lead to greater avoidance.

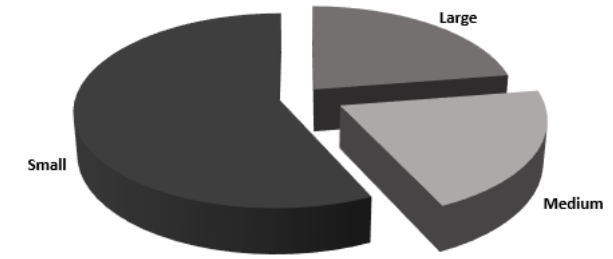
Our study also overlaps with the part of the literature that will address taxpayers' compliance behaviour in relation to other factors such as age, equity and industry, as well as their attitudes toward tax rate structure, tax complexity, tax enforcement, equity of the legislation and perception of corruption. Factors such as the legitimacy of the state, the efficiency of the tax administration, the legitimacy of the tax authorities, the feeling of belonging to the nation or national pride and the perception of the risk of sanctions and their severity, have also been prominent in tax compliance literature (see Abd Obaid, Ibrahim, & Udin, 2020; Radulovic, 2019; Mickiewicz, Rebmann, & Sauka, 2019; Everest-Phillips & Sandall, 2008). For example, disapproval of tax administration, the risk of being caught and the overall tolerance of tax evasion are negatively associated with corporate tax compliance (Radulovic, 2019). Among those interested in the tax compliance of Small and Medium Enterprises(SMEs), Yucedogru (2013) finds that the perception of the administration and religious beliefs have a significant impact, while patriotism and tax complexity have no real influence on their tax compliance. Additionally, the OECD guidance on the risk of corporate tax evasion shows that SMEs sometimes choose to move into the informal sector to evade taxes.

3 Data and empirical methodology

This paper carries out an empirical investigation of the determinants of business tax compliance in Togo. For this purpose, we use data from a survey on voluntary tax consent from the Office of Togolese Revenue (OTR) carried in 2019 covering 413 formal firms. The survey includes only formal firms because they are obliged to declare and pay their taxes.

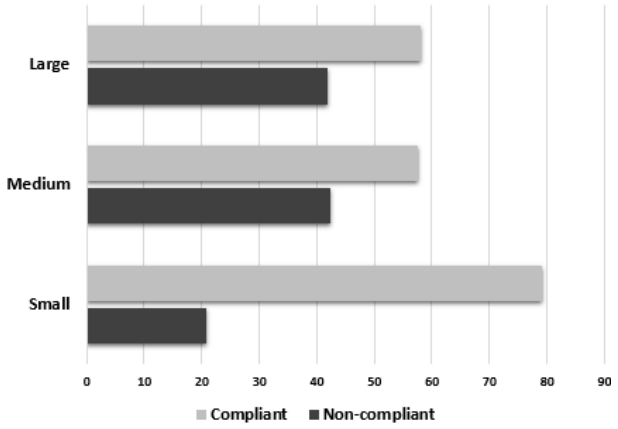
Before presenting the results of the econometric specifications, we will make a description of the survey data. Hence, the Figure 1 shows some graphical representations of preliminary analyses of the data, and show that the sample is composed of 56.9%, 20.58%, and 22.52% of small, medium and large businesses respectively (Figure 1a). Figure1b shows that 60% of businesses of all sizes are complying with tax liabilities, while 40% are trying to avoid paying their taxes. This compliance is distributed according to business size and geographic location.

Figure 1: Descriptive statistics

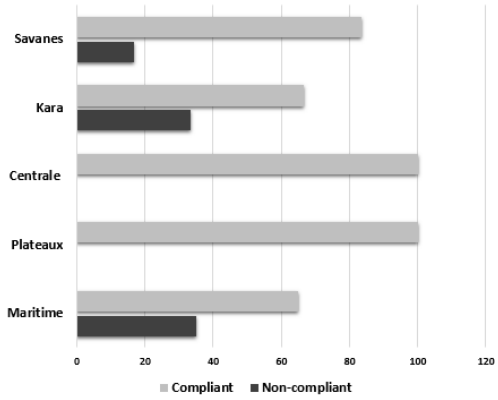


(a) Distribution by size of business

(b) Tax compliance of business



(c) Tax compliance by size of business



(d) Tax compliance by location regions

As it can be seen from the figure 1c, small businesses have the highest proportion of tax compliance i.e. 79.2%. The direct implication of this statement is that in Togo, it is not small businesses that are the biggest tax evaders. Where as data show that 42% of non-compliance for

medium and large businesses. According to the geographical location (see Figure 1d), the *Centrale* and *Plateaux* regions have the highest level of tax compliance among the five economic regions. The businesses surveyed in these regions are all compliant. In the *Savanes* region, 83.33% of businesses are compliant against 16.67% that are not. The *Kara* region shows 66.67% of compliant firms while in *Maritime* region, 64.88% of the businesses are compliant with the fiscal law and 35.12 are not compliant. In the *Savanes* region, the proportion of firms complying with tax obligations is 83%. For the *Kara* region, it is 67% and 65% in the *Maritime*. However, this should be taken with caution as the number of businesses surveyed in the other regions is very low compared to the *Maritime* region. We do not pretend that there are no non-compliant firms in regions such as *Centrale* and *Plateaux*. Rather, the point is that all surveyed firms in these two regions, regardless of their numbers, are classified as compliant on the basis of responses in the questionnaire.

Since, the objective of this study is to identify the factors those influence business tax compliance. So, we consider two aspects such as business characteristics and tax attitudinal aspect. Table 1 describes the main variables which are potential determinant of tax compliance. The tax attitudinal aspect includes factors such as business ethics and morality, tax management, knowledge of tax laws, forced consent, tax legitimacy and tax burden.

Table 1: Description of the main variables

Main variables	**Description**	**Number of Questions**
Tax compliance	This variable measures the level of compliance with the tax laws by firms	501, 502 and 503
Business characteristics	In the context of our study, the characteristics of the firms refer to the size and Geographical location of the business.	According to OTR
Taxpayer ethics and morality	This variable refers to the sub-variables, taxpayers' views on tax evasion and paying bribes to pay less tax.	509 and 512
Governance and good management of tax revenues	This variable refers to good governance in general and in particular to the transparent management of tax revenues.	524
Forced consent	Probability of detention and severity of punishment in case of detention. This forces companies to comply with tax laws.	544
Knowledge of tax laws	This variable measures knowledge of tax laws through the sub-variables, knowledge of subject taxes , amendment in 2019.	518 and 519
Legitimacy of taxes	This variable refers to the appropriateness of taxes, particularly customs duties and VAT.	551
Tax burden	These are the share of taxes in income and amount paid.	547 and 548

The factors above are divided into sub-categories and coded as presented in Table 2. The characteristics of the business refer to the firm size and its geographical location. The knowledge of law is composed of due taxes and the changes that have made including those for 2019. The ethics and morality of taxpayers are also essential for corporate compliance. We measure this correlation using firms' opinions on tax evasion and bribery of tax collectors to pay less tax. To measure the impact of the tax structure, we use VAT and customs duties. The choice of these taxes is motivated by their share in the revenue of the state budget[3]. Finally, we also measure

[3]In 2019, VAT and customs duties accounted for 41.85% and 16.57% respectively in total tax revenues.

the effect of forced consent (severity of penalties) and good governance (tax beneficiaries). These variables constitute the matrix of explanatory variables of our estimation model.

Table 2: The variables description and categorization

Sub variables	Description	Classification
Tax compliance	The three questions reflect the level of compliance with tax regulations by companies. The company is proud to pay taxes and is against paying bribes to pay less tax.	1 = if businesses is compliant 0 = Otherwise.
Size (of business)	This is the classification of businesses by the Office Togolais des Recettes (OTR) according to turnover: large businesses, medium businesses and small businesses.	Classification according to OTR
Customs duties legitimacy	The opinion of businesses on the appropriateness of taxes, particulary customs duties.	0 = No 1 = Yes
Taxes owed knowledge	The question refers to the knowledge of the provisions of the tax laws, in this case the taxes to which companies are subject.	0 = No 1 = Yes
Geographical location	This is the region where the company is located according to the administrative divisions of the country.	Location in the administrative regions of the country.
VAT legitimacy	The opinion of businesses on the appropriateness of taxes, particulary Value Added Tax (VAT).	0 = No 1 = Yes
Severity of penalties	The opinion of tax audit, probability of detection, and tax penalties are included in the questions.	0 = No 1 = Yes
Bribes	The question refers to the possibility of paying bribes to the tax authorities to pay less tax.	0 = Good 1 = Indifferent 2 = Bad 3 = Very bad
Tax beneficiaries	The question refers to the proper management of collected taxes: the actual destination of the taxes. Do the taxes benefit the whole nation or the public authorities.	0 = To public authorities 1 = To the Togolese nation
Taxes amount appreciation	The opinion of businesses on the amount of tax. Is the amount of tax bearable or too high.	1 = Largely bearable 2 = Acceptable 3 = Too high
Tax fraud appreciation	The question refers to the moral value of companies.	0 = Good thing 1 = Indifferent; 2 = Bad 3 = Very bad
Tax burden	The share of taxes in income.	1 = Less than 5%. 2 = Between 5% and 10% 3 = Between 10 and 25% 4 = Between 25 and 50% 5 = More than 50%.
tax laws amendment (2019)	The question refers to knowledge of the provisions of the tax law, in this case the latest 2019 amendments.	0 = No 1 = Yes

3.1 Construction of the tax compliance measure

To compute our tax compliance measure, we rely on the three questions those asked to the businesses such as: "Are you currently proud to pay your taxes ?(Q501)"; "If you had the opportunity to pay less by negotiating with an OTR agent for a gift, would you do so ?(Q502)" and "If you had the opportunity to use loopholes in the law to pay less, would you exploit them ?(Q503)". To answer these questions, the firms have the possibility either to choose 1 = "Yes" and 2 = "No". However, to have more consistent dependent variable, we compute it as a composite variable

based on the answers to these questions. First, we rely on the answers to the last two questions (Q502 and Q503) to compute a dependent variable that is called Tax Compliance 1. Therefore, Tax Compliance 1 includes businesses that declare to be not willing to use loopholes in the tax laws or to negotiate with tax collectors to pay less taxes. So, Tax Compliance 1 can be expressed as follows:

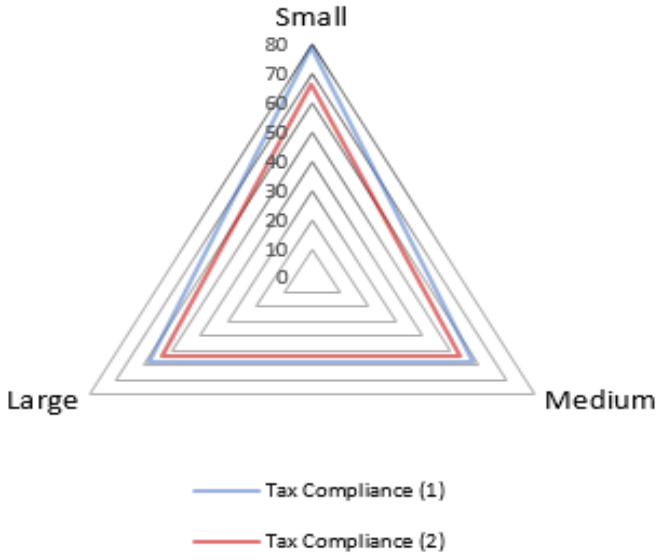
$$TaxCompliance1 = \begin{cases} 1 & (No, No) \\ 0 & otherwise \end{cases} \tag{1}$$

However, since our dependent variable refers to voluntary tax consent, we consider it equally important that our tax compliance measurement takes into account how the taxpayer, the businesses in this case, feel about the taxes they are paying, for example if they are proud to pay taxes or not. Thus, we compute another dependent variable which is Tax Compliance 2, so that this measurement includes firms that are, not only willing to use tax loopholes but also not to negotiate with tax collectors to pay less taxes, and also proud to pay their taxes. Hence, Tax Compliance 2 is defined as follows:

$$TaxCompliance2 = \begin{cases} 1 & (Yes, No, No) \\ 0 & otherwise \end{cases} \tag{2}$$

Subsequently, the compliance levels are compared between firms according to their size using the two measures that have been constructed to assess the tax compliance level accurately, witch are shown in the Figure 2. The idea here is to check whether there is a wide disparity in the level of tax compliance among firms or not depending on the indicators used. As we can see, the levels of compliance do not diverge too much, no matter if one uses Tax Compliance 1 or Tax Compliance 2. The difference in tax compliance according to the two indicators is about 12% for small firms and 4% for large and medium firms.

Figure 2: Tax compliance measures by business size



3.2 Model estimation

In the econometric specification of our estimation model, we assume that there are set of factors (X) that influence firms' tax compliance ($TaxCompliance_i$). Therefore, the model is specified as follows:

$$TaxCompliance_i = F(X_i) \tag{3}$$

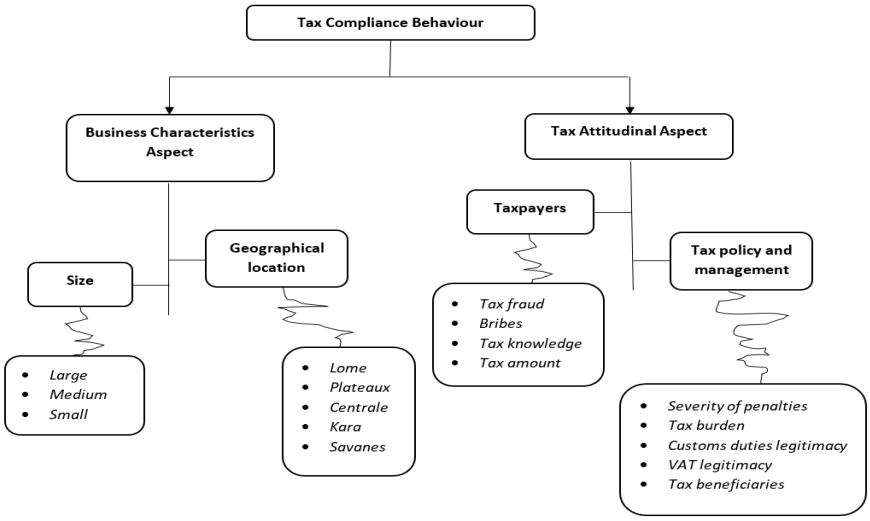
In case of probability models, the use of OLS is inappropriate for several reasons, including that the estimated value of $TaxCompliance_i$ is outside the interval $[0, 1]$. In addition, it is also possible that the idiosyncratic error does not follow a normal distribution but a discrete distribution because it can only take two values (0 and 1). In such case, it is appropriate to identify the impact of X on the probability of firm to be compliant. For this purpose, equation 3 can be rewritten as follows:

$$\begin{cases} Pr(TaxCompliance_i = 1|X_i) = F(X_i) \\ \\ Pr(TaxCompliance_i = 0|X_i) = 1 - F(X_i) \end{cases} \tag{4}$$

In the related empirical literature, Logit and Probit estimators are often used to estimate these probability models. But, the choice between both depends on the idiosyncratic error distribution function. The probit estimator is recommended when the error distribution function follows a normal distribution. In contrast, when the error distribution function is assumed to follow a logistic distribution, then the logit estimator is recommended. However, according to Greene (2002), the logit and probit models are very similar. And the matter of choice is therefore irrelevant. However, this study focuses on the probit model mainly because of its ability to limit the value of variable within 0 and 1, and its ability to correct for heteroscedasticity in the model (Gbadago & Awunyo-Vitor, 2015).

Several studies on tax compliance have focused on individual taxpayers compliance at the instead of firms. They have provided a theoretical framework to explain the factors that affect individual compliance (Fischer et al., 1992; Cuccia, 1994; Devos, 2014). At the same time, some previous studies of business compliance have recognized that individual taxpayers compliance theory can be applied to explain business compliance (Tedds, 2010; Sapiei et al., 2014). Similarly, Joulfaian (2000) also mentioned that these theories are appropriate, because of the firms managers preferences. He argues that business managers manage the firm's finances in such a way as to have the highest possible profit after paying taxes like an individual person. Based on this premise, we develop the theoretical framework of our study which relates to two categories of variables, business characteristics and tax attitudinal aspects to the tax compliance of businesses. These categories are divided into variables as shown in Figure 3.

Figure 3: Tax compliance framework



4 Results and discussion

4.1 Baseline model estimates

In studies based on probit regressions, statistics on the predictive quality of the model are of particular importance which are estimated in the Table 3 for each of model. For example, the prediction quality of the model using Tax Compliance 1 is 74.5% (column 1) and is equal to 69.6% (column 3) with the model including Tax Compliance 2. Similarly, it is also possible to obtain the quality of adjustment by the *ROC Curve* presented on the Figures 10a and 10b in the appendix. For the two dependent variables Tax Compliance 1 and Tax Compliance 2, the "Area under ROC Curve" statistics confirm a high quality of adjustment, of 78% and 77%, respectively.

Table 3: Baseline model estimates quality adjustment

	Tax Compliance (1)		Tax Compliance (2)	
	Good Prediction	False Prediction	Good Prediction	False Prediction
Tax Compliance = 0	78.33%	21.67%	72.61%	27.39%
Tax Compliance = 1	62.79%	37.21%	63.87%	36.13%
Total	74.50%	25.50%	69.63%	30.37%

4.2 Factors that explain tax compliance of businesses in Togo

It is therefore the objective of our study is to identify precisely the factors that explain the voluntary compliance of companies, especially in case of Togo. Therefore, to achieved this objective, we rely on the results of the baseline model using two different dependent variables. The results are presented in Tables 4 and 5 using the dependent variables Tax Compliance 1 and Tax Compliance 2, respectively.

In Table 4, the dependent variable Tax Compliance 1 includes businesses that declare to be not willing to use loopholes in the tax laws or not to negotiate with tax collectors to pay less tax.

Column 1 and 2 include two proxies for tax burden used in an alternative manner, while column 3 includes both. The findings show that some variables significantly explain the tax compliance of businesses. Considering Tax Compliance 1 as a dependant variable, the findings reveal number of patterns. First, we found a negative and significant relationship between the business size and tax compliance. The associated marginal effect indicates that, large businesses have 23.7% less likely to be compliant than small businesses. This result is in line with that of Abdul-Jabbar (2009), but in contrast with Mohamad (2018) and Nor, Ahmad, and Saleh (2010) who found that business size influences positively the tax compliance due to the effective internal controlling within the firms. It implies that large businesses have strict procedure for monitoring of financial reporting, and due to which they report their taxes properly. Moreover, large businesses must also maintain their reputation towards their business partners, so they will be more obedient than smaller firms (Yusof, 2014). In addition, Nur-Tegin (2008) also argues that large businesses are more likely to be compliant than small businesses. He explains that they are the main targets of tax officers to boos tax revenue. It means that larger businesses have greater potential to increase revenue than smaller businesses, so it becomes easy for small firms to be invisible. Therefore, based on previous research, it can be easily concluded that the internal monitoring within firms in Togo is very low both in small, medium or large businesses. In addition, the level of tax audit conducted by OTR is not up to the mark, so the bigger firms still have the tendency to evade taxes. Large businesses, most of them benefit from foreign capital, which have the opportunities to reduce taxes through tax havens. Similarly, they can also overcharge salaries and other expenses to increase costs and minimize their taxes (Kemme, 2020). Finally, large businesses also have enormous power to negotiate for exceptional concession. However, some different findings upon the influence of firm size toward compliance refer to different proxy used by researchers. Such as Nor et al. (2010), this study divides the firms size according to it turnover, [4] while some use the number of employees (Nur-Tegin, 2008)

Secondly, the variables tax fraud appreciation and bribes have positive and significant effects with business compliance. These two variables measure the ethics and morals of firms in the field of their compliance with tax laws. They are ordered from good to very bad accordingly. These results suggest that businesses believing that tax evasion and bribery to tax collectors to pay less taxes is wrong, are more likely to be compliant. The respective marginal effects are 9.7% and 14.9% meaning that such firms are more likely to comply with their tax obligations. Thus, a reduction in corruption by tax collectors of the OTR can increase business compliance in Togo. This result is consistent with Alm and McClellan (2012) who argue that, a corrupt tax administration system (bribes) reduces reporting and so increases tax evasion. The authors point for reduction in corruption of tax administration is to improve business compliance.

As expected, tax beneficiaries are positively and significantly correlated with business compliance. Thus, firms that believe that taxes benefit the whole nation are more willing to pay than those who believe that taxes benefit the public authorities, only. The associated marginal effect indicates that firms that believe taxes benefit the nation as a whole are 9.1% more likely to be compliant than firms that believe taxes benefit public authorities. This means that good management of tax revenues encourages firms to participate in the financing of public goods by paying their taxes. Also, better explanation of the origin of the resources collected would enable

[4] According to OTR, small firms are those with a turnover of less than FCFA 60 million; medium firms have a turnover of between FCFA 60 million and FCFA 1 billion; and large firms have a turnover of FCFA 1 billion or more. This is the turnover excluding tax.

the taxpayer to better understand the need for the institution of a tax and thus to freely consent to pay taxes (Fjeldstad, 2001).

Third, the results also point a positive and significant association between the severity of penalties and tax compliance. This implies that high penalties will surely generate more business tax compliance in Togo. According to the associated marginal effect, there is 25.2% greater chance that high penalties will induce firms to comply with tax legislation. This result is in contradiction with Andreoni et al. (1998) who claimed that the compliance rate will remain high in the modern tax system even though tax sanctions are low because there are other factors which effect the compliance, like non economic factors (human behaviour). This reason is also supported by Falanni (2015) who summarized that the important factors to increase the voluntary compliance are through the improvement of moral and ethics of the taxpayers rather than imposing high penalties. The positive effect of the severity of sanctions on companies tax compliance is also associated with more regular tax audits, thus a higher probability of being caught. The process of audit in Togo for businesses is based on certain selection criteria in which all firms are not included. But, some firms selected are mostly based on their suspicious history or reporting transactions below the amount aggregated in the OTR's books. The audit selection is also correlated with the size of the businesses, then, it will influence compliance (Falanni, 2015). Large businesses are more eligible for the audit, as they are the major taxpayers to the OTR. However, the OTR is making an effort to audit as many firms as possible over a period of 3 years, the statute of limitations beyond which tax fraud is no longer reprehensible.

Furthermore, we also find that custom duties legitimacy are positively and significantly related to businesses tax compliance. This means that taxpayers who find custom duties legitimate are more willing to pay than those who do not. Firms that find tariffs legitimate are 18.3% more likely to be compliant. Contrary to custom duties, VAT legitimacy has been negative in connection with businesses tax compliance. In terms of marginal effect, there is a 15% lower chance that businesses which find VAT legitimate are not compliant. This negative relationship can be attributed to various imperfections in VAT implementation[5] in the country, particularly to non-fluid refunds of VAT credits. This result is not consistent with our expectations. One would think that firms which believe in VAT legitimacy are more willing to pay. So, how can we explain this contradictory result? Let's take for example small businesses that bear VAT paid because of the non-fluid repayment of VAT credits in developing countries. It should be recalled that by definition small businesses are not registered for VAT, therefore they are not entitled to charge VAT on sales, and consequently cannot deduct the amount of VAT paid on purchase of inputs, imports etc. However, These small businesses sometimes or very often bear the amount of VAT paid, which increase their production costs making them less competitive. It is possible, therefore, that these difficulties experienced by small businesses may lead to deviant behaviour *vis-a-vis* tax compliance. Moreover, because of the given reasons, avoiding tax obligations, this is an acceptable argument to explain the negative relationship between the legitimacy of VAT and tax compliance because, these represent a significant share of our sample, 56.9%.

[5]VAT is a real tax applied to all commercial transactions, at each step of the selling of goods or services. It is an indirect tax paid by the consumer and collected by registered firms. They can collect VAT and thus deduct the VAT paid on their purchases of goods or services. Then, the registered firms pay the amount of VAT on their margin to the treasury, hence the name Value Added Tax. However, if the VAT paid by the firm on the purchase of its inputs is higher than the VAT collected, the treasury must reimburse the difference, called VAT credits, to the firm. Therefore, VAT is economically neutral for businesses, i.e. it does not constitute a cost for businesses.

However, our study has not found any significant relationship between tax compliance and the variables geographical location, tax laws amendment (2019), tax burden, tax owed knowledge, and tax amount appreciation while using the dependant variable Tax Compliance 1. But some of them become significant when we use Tax Compliance 2 as dependent variable. This is another measure of tax compliance that includes firms that are not only willing to use tax loopholes and not to negotiate with collectors to pay less tax, but are also proud to pay their taxes.

It can be seen that all the factors that significantly explain Tax Compliance 1 in Table 4 also explain the alternative measure i.e. Tax Compliance 2 and others such as geographical location, knowledge of the law, and tax beneficiary. which all have positive association with tax compliance. The findings indicate the following.

Concerning the variable geographical location[6], we have found a positive association with tax compliance. The implication of the result is that the firms furthest from the capital are the most compliant. The estimated marginal effect is 5.1% meaning that firms located in other regions are 5.1% more likely to be compliant than those in the *Maritime* region. There are several reasons for such correlation. In this respect, it could be assumed that it is easier to control firms located outside the *Maritime* region due to their extremely low numbers. Since there is a high concentration of firms in the *Maritime* region, this could make tax controls more complex, and therefore tax avoidance behavior on the part of firms.

Moreover, the coefficient of tax laws knowledge is linked to rise in businesses tax compliance. According to the associated marginal effect, firms that know the tax laws are 17% more likely to be compliant than those that do not. Previous studies have evidenced that tax knowledge has a very close relationship with taxpayers' ability to understand the laws and regulations of taxation, and their ability to comply with (see Singh & Bhupalan, 2001).

Finally, we find a positive correlation between tax compliance and tax beneficiaries. This variable contains those firms which consider that taxes paid give profit to the whole nation. In other words, they believe that taxes paid are really used for what they are paid. According to the associated marginal effect, these firms are 21.4% more likely to be tax compliant.

[6]The variable refers to the administrative region where the business is located. It is coded from 1 to 5, ranging from the *Maritime* region in the southern part of the country, where the Capital (Lomé) is based and the majority of business are located (approximately 84.50%), to the region of *Savanes* in the northern part of the country.

Table 4: Baseline estimates using Tax Compliance 1

Variables	Column (1)	Column (2)	Column (3)
Geographical location	0.015	0.015	0.013
	(0.573)	(0.602)	(0.637)
Size (of business)	-0.237***	-0.243***	-0.246***
	(0.000)	(0.000)	(0.000)
Tax fraud appreciation (poor)	0.084**	0.097**	0.097**
	(0.024)	(0.010)	(0.010)
Bribes (disapproval)	0.145***	0.150***	0.149***
	(0.000)	(0.000)	(0.000)
tax laws amendment (2019)	-0.010	-0.036	-0.034
	(0.892)	(0.624)	(0.630)
Taxes owed knowledge	0.065	0.080	0.078
	(0.380)	(0.284)	(0.296)
Tax beneficiaries (whole nation)	0.091*	0.083	0.081
	(0.088)	(0.126)	(0.137)
Severity of penalties	0.243***	0.249***	0.252***
	(0.001)	(0.001)	(0.001)
Customs duties legitimacy	0.155**	0.188**	0.183**
	(0.039)	(0.014)	(0.017)
VAT legitimacy	-0.173**	-0.153**	-0.150**
	(0.003)	(0.013)	(0.016)
Tax amount appreciation (too high)	-0.028		-0.024
	(0.055)		(0.621)
Tax burden		0.001	0.001
		(0.978)	(0.955)
Observations	355	349	349
Wald chi2(11)	77.46	79.60	80.15
Prob >chi2	0.000	0.000	0.000
Pseudo R2	0.174	0.181	0.182

Note: Marginal effects are reported. Probability value in parenthesis, *,**,*** denote significance at 10%, 5% and 1%, respectively. Column 1 and 2 are controlled by tax amount appreciation and tax burden respectively. Column 3 is controlled by both proxies

Table 5: Baseline estimates using Tax Compliance 2

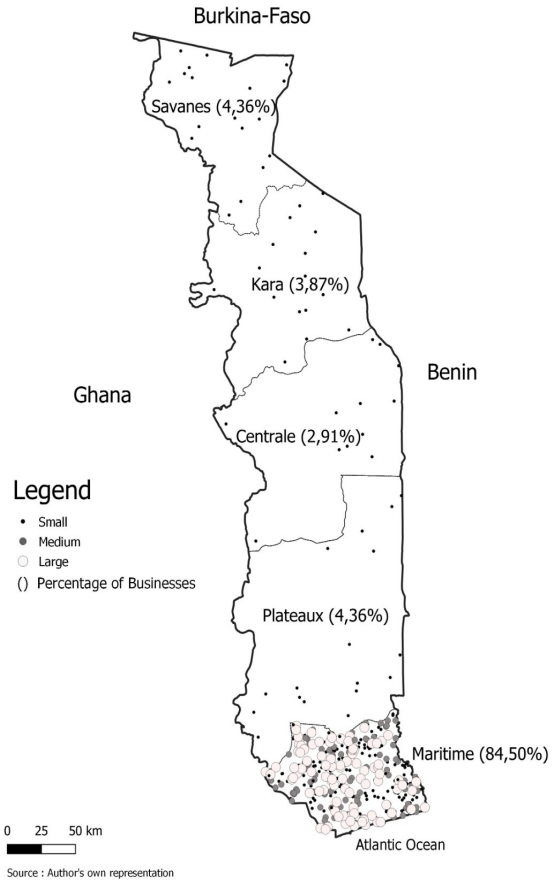
Variables	Column (1)	Column (2)	Column (3)
Geographical location	0.059*	0.055*	0.051*
	(0.054)	(0.078)	(0.098)
Size (of business)	-0.206***	-0.202***	-0.213***
	(0.000)	(0.000)	(0.000)
Tax fraud appreciation (poor)	0.111**	0.122***	0.122***
	(0.010)	(0.005)	(0.005)
Bribes (disapproval)	0.109***	0.109***	0.106***
	(0.008)	(0.007)	(0.009)
tax laws amendment (2019)	-0.015	-0.025	-0.023
	(0.848)	(0.754)	(0.780)
Taxes owed knowledge	0.161**	0.172**	0.170**
	(0.051)	(0.039)	(0.042)
Tax beneficiares (whole nation)	0.221***	0.220***	0.214***
	(0.000)	(0.000)	(0.000)
Severity of penalties	0.214***	0.208***	0.218***
	(0.004)	(0.005)	(0.004)
Customs duties legitimacy	0.137*	0.157**	0.142*
	(0.084)	(0.050)	(0.074)
VAT legitimacy	-0.192**	-0.185**	-0.180**
	(0.006)	(0.011)	(0.014)
Tax amount appreciation (too high)	-0.079		-0.071
	(0.139)		(0.186)
Tax burden		-0.010	-0.007
		(0.684)	(0.750)
Observations	355	349	349
Wald chi2(11)	83.00	80.14	81.94
Prob >chi2	0.000	0.000	0.000
Pseudo R2	0.179	0.174	0.178

Note: Marginal effects are reported. Probability value in parenthesis, *,**,*** denote significance at 10%, 5% and 1%, respectively. Column 1 and 2 are controlled by tax amount appreciation and tax burden respectively. Column 3 is controlled by both proxies

4.3 Further robustness checks

We also do two other types of robustness tests. First, we experience a difference in tax compliance depending on business size. Secondly, we consider another point that tax compliance may vary from one administrative region to another. But regarding the results, we do not consider it useful to present them in the paper. The nature of these results, in our opinion, is linked to the distribution of the sampled businesses across the country, according to which the *Maritime* region alone accounts for more than 84%. Therefore, the non-representatives of businesses in the other regions (See Figure 4) does not allow us to predict a statistically valid relationship between tax compliance and belonging to a given administrative region in the country. [7]

Figure 4: Administrative map and sample distribution



Moreover, this unequal distribution[8] of the sample in the different administrative regions makes it necessary to reconsider the *Maritime* region as an isolated entity and to re-examine the

[7] These results are available under request.

[8] It should be noted that the unequal weight of the regions in the sample in terms of the number of enterprises surveyed is not due to a mistake in the data collection technique. We would like to make this clear, as some may complain that the survey did not use a stratified approach to take into account the differences between regions of the country, although we agree that this may mitigate the possible limitation of the fact that the majority of businesses are concentrated in one region of the country. So this is not a coincidence. It should be noted that the *Maritime* region is the most developed region in the country in economic, administrative, demographic and infrastructural terms, unlike the other regions, and that there is a significant gap between the living standards of

tax compliance of businesses in this region. In total, 349 of the businesses surveyed are located in this region. Thus, we first investigate the factors that determine tax compliance of businesses in the *Maritime* region and then test whether there are differences in tax compliance according to the size of the businesses in the region.

Do firms size matter to tax compliance in Togo?

The results of the estimation of the factors explaining tax compliance by business size are presented in the Tables 6 and 7. Accordingly, the determinants vary depending on whether the business is small, medium or large.

For small businesses, no matter which dependant variable is used, the variables such as tax fraud appreciation, bribes, tax knowledge, and customs duties legitimacy positively influence tax compliance of small businesses. While VAT legitimacy is associated with an incentive to tax avoidance on the part of small businesses. Furthermore, the severity of penalties also encourage small businesses to be compliant but only in the model using Tax Compliance 1. Finally, for small businesses, geographical location has a positive influence on compliance while the appreciation of the amount of tax has a negative effect, but only the model including Tax Compliance 2 predicts these relationships. The results in columns 2 of each table provide evidence on the factors that determine the tax compliance of medium-sized businesses. They indicate that the bribes to deal with taxes and the severity of penalties are the determining factors with an incentive effect. The results are the same for both dependent variables. For large businesses, compliance is enforced in the presence of severe penalties whether the dependent variable considered is Tax Compliance 1 or 2. In addition, knowledge of the taxes to which one is subject (with Tax Compliance 1) leads to evasion of tax compliance, while the fact of considering that the tax will benefit the whole nation (with Tax Compliance 2) encourage large businesses to respect tax compliance.

Additionally, in order to control for the low proportions of medium and large businesses compared to small businesses, we perform a new estimation in which medium and large businesses are included for number of observations of 175. The results are in the columns 4 of both tables, similar to those for large businesses. The only notable difference is that the legitimacy of VAT becomes significant and negative, indicating that medium and large businesses that find VAT legitimate are not willing to pay it. The idea of non-fluid refunds of VAT credits is still admissible to explain VAT evasion by these businesses, although they would be taxable unlike small businesses.

Lastly, it can be observed that in columns 5 of these tables the baseline models are still reported. The idea is to compare the results according to the size of businesses to the baseline model in order to shed light on the idea that the determining factors identified in the later are not influenced by the high number of small businesses in our sample. Clearly, the results of the reference model are similar to those of small businesses, although some of the factors determining the tax compliance in the reference model are not in accordance with the small businesses or *vice versa*. For example, in the reference model, tax beneficiaries provide an incentive to comply with but do not determine compliance for small businesses according to the two dependent variables (Tax Compliance 1 and 2). Conversely, tax owed knowledge (Tax Compliance 1) and tax amount appreciation (Tax Compliance 2) significantly explain small business compliance but do not explain in the baseline model.

the inhabitants. However, by definition, this simply explains the concentration of Togo's businesses in the most developed region, and it is this reality that is reflected in the composition of the sample in terms of geographical location.

Table 6: Robustness checking using Tax Compliance 1

Variables	Column (1) Small	Column (2) Medium	Column (3) Large	Column (4) Exclu. Small	Column (5) Baseline
Geographical location	0.015				0.013
	(0.377)				(0.637)
Tax fraud appreciation (poor)	0.108***	0.023	0.041	0.065	0.097**
	(0.003)	(0.781)	(0.629)	(0.262)	(0.010)
Bribes (disapproval)	0.124***	0.208**	-0.044	0.093	0.149***
	(0.000)	(0.013)	(0.630)	(0.129)	(0.000)
tax laws amendment (2019)	-0.003	-0.176	0.207	-0.051	-0.034
	(0.969)	(0.286)	(0.301)	(0.699)	(0.630)
tax knowledge	0.146**	-0.228	-0.319**	-0.232*	0.078
	(0.016)	(0.175)	(0.044)	(0.084)	(0.296)
Tax beneficiaries (whole nation)	-0.060	0.086	0.185	0.118	0.081
	(0.295)	(0.485)	(0.142)	(0.146)	(0.137)
Severity of penalties	0.124**	0.506***	0.466***	0.504***	0.252***
	(0.097)	(0.000)	(0.000)	(0.000)	(0.001)
Customs duties legitimacy	0.205***		0.027	0.224	0.183**
	(0.000)		(0.939)	(0.386)	(0.017)
VAT legitimacy	-0.010**		0.135	-0.362**	-0.150**
	(0.021)		(0.673)	(0.050)	(0.016)
Tax amount appreciation (too high)	-0.061	-0.083	0.027	-0.052	-0.024
	(0.215)	(0.401)	(0.812)	(0.482)	(0.621)
Tax burden	0.022	0.027	-0.045	-0.008	0.001
	(0.337)	(0.631)	(0.359)	(0.829)	(0.955)
Observations	174	84	91	175	349
Wald chi2(..)	56.59	15.06	15.95	23.88	80.15
Prob >chi2	0.000	0.058	0.110	0.008	0.000
Pseudo R2	0.399	0.183	0.128	0.133	0.182

Note: Marginal effects are reported. Probability value in parenthesis, *,**,*** denote significance at 10%, 5% and 1%, respectively. Variables are introduced into the equations according to the availability of data. In addition, we do not have an estimator for the "Location region" variable in columns 2 and 3 because all medium and large businesses are located in the Maritime region.

Table 7: Robustness checking using Tax Compliance 2

Variables	Column (1) Small	Column] (2) Medium	Column (3) Large	Column (4) Exclu. Small	Column (5) Baseline
Geographical location	0.056*				0.051*
	(0.092)				(0.098)
Tax fraud appreciation (poor)	0.239***	0.025	-0.015	0.043	0.122***
	(0.000)	(0.765)	(0.865)	(0.473)	(0.005)
Bribes (disapproval)	0.089*	0.197**	0.010	0.095	0.106***
	(0.081)	(0.026)	(0.918)	(0.119)	(0.009)
Tax law amendment (2019)	0.034	-0.242	0.255	-0.052	-0.023
	(0.726)	(0.147)	(0.179)	(0.687)	(0.780)
Taxes owed knowledge	0.248***	-0.258	0.048	-0.047	0.170**
	(0.005)	(0.164)	(0.843)	(0.776)	(0.042)
Tax beneficiaries (whole nation)	0.116	0.177	0.296**	0.224***	0.214***
	(0.147)	(0.144)	(0.014)	(0.005)	(0.000)
Severity of penalties	0.105	0.436***	0.464***	0.461***	0.218***
	(0.277)	(0.002)	(0.000)	(0.000)	(0.004)
Customs duties legitimacy	0.240***		-0.087	0.108	0.142*
	(0.001)		(0.801)	(0.689)	(0.074)
VAT legitimacy	-0.199**				-0.180**
	(0.005)				(0.014)
Tax amount appreciation (too high)	-0.199**	0.084	0.025	-0.048	-0.071
	(0.011)	(0.406)	(0.830)	(0.519)	(0.186)
Tax burden	-0.020	0.004	-0.035	-0.013	-0.007
	(0.557)	(0.940)	(0.491)	(0.724)	(0.750)
Observations	174	84	91	175	349
Wald chi2(..)	59.28	14.77	14.53	21.02	81.94
Prob >chi2	0.000	0.064	0.105	0.009	0.000
Pseudo R2	0.328	0.178	0.170	0.142	0.178

Note: Marginal effects are reported. Probability value in parenthesis, *,**,*** denote significance at 10%, 5% and 1%, respectively. Variables are introduced into the equations according to the availability of data. In addition, we do not have an estimator for the "Location region" variable in column 2 and column 3 because all medium and large businesses are located in the Maritime region.

Robustness check focusing on the *Maritime* region

As mentioned in the previous section, we are interested in distinguishing the factors that explain voluntary tax compliance between regions, but the small number of businesses surveyed in the other regions outside the *Maritime* region does not allow us to meet this objective. As an alternative, we choose to focus on the *Maritime* region only with almost 349 surveyed businesses, and thereby identify the factors explaining voluntary tax compliance, as well as the determinants by business size within this region. Tables 8 and 9 present the analysis of the determinants of tax compliance, and by business size.

Some factors significantly explain voluntary compliance regardless of the tax compliance measure used. For example, the size of the business is associated with non-compliance i.e. in the *Maritime* region, large businesses are more likely to avoid paying taxes. While the more severe the penalties imposed by the tax authorities, the more compliant businesses tend to be. Other factors are only significant in a particular model. It is the case of bribes and legitimacy of custom duties that are found to push businesses towards voluntary compliance in the model using Tax Compliance 1. By contrast, in the model with Tax Compliance 2, knowledge of the tax laws, and the taxes beneficiary, positively influences voluntary compliance while businesses find VAT legitimate but are not willing to pay it.

We can say that factors that are key determinants of tax compliance at national level are not all significant at the regional level. It means that there would be a regional effect that would be interesting to investigate further, but unfortunately we could not carry out this analysis due to data constraints as we already mentioned.

The first finding that emerges from the estimates by business size is that, among small businesses, regardless of the dependent variables we consider, factors such as knowledge of the tax laws, legitimacy of custom duties and VAT are found to be determinants of voluntary compliance. In contrast to the others, which push for compliance, VAT legitimacy leads to tax avoidance. After that, it can be pointed out that factors such as bribes, tax beneficiaries and severity of penalties are also significant in the specification with Tax Compliance 1. If compliance is negatively influenced by the tax beneficiaries, it is enhanced by factors like bribes and severity of penalties. In addition, the tax fraud and taxes amount appreciation is also relevant in the specification with Tax Compliance 2. More specifically, the amount of the tax induces tax avoidance, whereas the tax fraud appreciation rather encourages compliance with tax obligations.

For medium-sized businesses, the results are identical in both specifications. Therefore, variables such as bribes and the severity of penalties are positive and significant i.e. these factors accelerate voluntary compliance.

Finally, for large businesses we identify three valid determinants. The severity of penalties is positive and significant in both specifications. It would be an accelerating factor for voluntary compliance. It is tax knowledge that is associated with tax avoidance in the specification using Tax Compliance 1 but unlike tax beneficiaries which rather favour voluntary compliance according to the specification Tax Compliance 2.

Table 8: Robustness checking using Tax Compliance (1)

Variables	Column (1) Maritime	Column (2) Small	Column (3) Medium	Column (4) Large
Size (of business)	-0.240***			
	(0.000)			
Tax fraud appreciation (poor)	0.064	0.67	0.023	0.041
	(0.157)	(0.306)	(0.781)	(0.629)
Bribes (disapproval)	0.116**	0.089*	0.208**	-0.044
	(0.012)	(0.070)	(0.013)	(0.630)
tax laws amendment (2019)	0.014	0.097	-0.176	0.207
	(0.866)	(0.335)	(0.286)	(0.301)
tax knowledge	0.045	0.184*	-0.228	-0.319**
	(0.620)	(0.056)	(0.175)	(0.044)
Tax beneficiaries (whole nation)	0.067	-0.283**	0.086	0.185
	(0.300)	(0.029)	(0.485)	(0.142)
Severity of penalties	0.317***	0.204**	0.506***	0.466***
	(0.000)	(0.056)	(0.000)	(0.000)
Customs duties legitimacy	0.188**	0.366***		0.027
	(0.055)	(0.000)		(0.939)
VAT legitimacy	-0.138	-0.153***		0.135
	(0.110)	(0.007)		(0.673)
Tax amount appreciation (too high)	-0.023	-0.054	-0.083	0.027
	(0.685)	(0.612)	(0.401)	(0.812)
Tax burden	-0.010	0.044	0.027	-0.045
	(0.698)	(0.197)	(0.631)	(0.359)
Observations	289	114	84	91
Wald chi2(..)	55.02	46.52	15.06	15.95
Prob >chi2	0.000	0.000	0.058	0.101
Pseudo R2	0.139	0.370	0.183	0.128

Note: Marginal effects are reported. Probability value in parenthesis, *,**,*** denote significance at 10%, 5% and 1%, respectively. Variables are introduced into the equations according to the availability of data. No estimator for size for columns 2, 3, and 4 because these estimates are made by type of business

Table 9: Robustness checking using Tax Compliance (2)

Variables	Column (1) Maritime	Column (2) Small	Column (3) Medium	Column (4) Large
Size (of business)	-0.200***			
	(0.000)			
Tax fraud appreciation (poor)	0.072	0.209**	0.025	-0.015
	(0.146)	(0.037)	(0.765)	(0.865)
Bribes (disapproval)	0.071	-0.016	0.197**	0.010
	(0.133)	(0.841)	(0.026)	(0.918)
tax laws amendment (2019)	0.019	0.143	-0.242	0.255
	(0.839)	(0.286)	(0.147)	(0.179)
tax knowledge	0.160*	0.298**	-0.258	0.048
	(0.098)	(0.020)	(0.164)	(0.843)
Tax beneficiaries (whole nation)	0.236***	0.171	0.177	0.296**
	(0.000)	(0.142)	(0.147)	(0.014)
Severity of penalties	0.261***	0.146	0.436**	0.464***
	(0.001)	(0.256)	(0.002)	(0.000)
Customs duties legitimacy	0.136	0.272**		-0.087
	(0.167)	(0.018)		(0.801)
VAT legitimacy	-0.189*	-0.312***		
	(0.046)	(0.002)		
Taxes amount appreciation (too high)	-0.077	-0.319**	-0.084	0.025
	(0.207)	(0.016)	(0.406)	(0.830)
Tax burden	-0.017	-0.017	0.004	-0.035
	(0.551)	(0.731)	(0.940)	(0.491)
Observations	289	114	84	91
Wald chi2(..)	55.80	42.27	14.77	14.53
Prob >chi2	0.000	0.000	0.064	0.105
Pseudo R2	0.143	0.304	0.178	0.170

Note: Marginal effects are reported. Probability value in parenthesis, *,**,*** denote significance at 10%, 5% and 1%, respectively. Variables are introduced into the equations according to the availability of data.No estimator for size for columns 2, 3, and 4 because these estimates are made by type of business

5 Conclusion and policy implications

In this paper, we have highlighted factors that contribute to the compliance of businesses with their tax obligations in Togo. Our model defines voluntary tax compliance behaviour based on two aspects, including characteristics of the businesses (size and geographical location) and the tax attitudinal aspect (attitudes of taxpayers, tax policy and management). We capture the tax compliance of businesses in two different ways according to their responses to the surveys that were administered to them. The first measure we define is Tax Compliance 1, which includes businesses that declare that they do not want to use loopholes in the tax laws or negotiate with tax collectors to pay less tax. The second measure, Tax Compliance 2, includes businesses that not only declare themselves unwilling to use tax loopholes or negotiate with tax collectors to pay less tax, but are also proud to pay their taxes. Several factors have been identified as potential candidates for determining voluntary tax compliance. These include factors such as bribes, severity of penalties, legitimacy customs duties, geographical location, tax evasion appreciation, tax burden, amendment of the tax laws, tax paid, tax knowledge, tax beneficiaries, legitimacy of VAT and size of businesses.

Most results are in line with our expectations. On the one hand, our study concluded that geographical location, tax evasion assessment, bribes, tax knowledge, tax beneficiaries, the severity of penalties and the costs of legitimate custom duties are factors that incite businesses to pay taxes voluntarily. Second, the size of the business and the legitimacy of VAT are more likely to be linked to tax evasion by businesses. Furthermore, it did not seem logical to us that the legitimacy of VAT should be associated with any attempt at tax evasion on the part of businesses. Nevertheless, while VAT is intended to be neutral for businesses, its application through VAT policy and the operation of tax administrations in developing countries often leads some businesses to evade their tax obligations.

The analysis by business size shows that the determinants of tax compliance vary according to their size. In other words, the determinants of tax compliance of small businesses are not the same as those of medium and large businesses. Secondly, we also find that there would be a regional effect of the determinants of business tax compliance. At the level of the *Maritime* region, the determinants differ from those identified at the national level. Unfortunately, the analysis could not be carried out at the level of the other administrative regions of the country because the data we have did not allow it. In view of these conclusions, some recommendations can be made to improve the tax compliance of businesses in Togo.

First of all, it is imperative that the OTR works to improve the conditions of application of VAT. In terms of VAT policy, for social reasons, many goods and services are exempted from VAT, either completely or partially. For example, these exemptions are at the origin of VAT credit creation. When these credits are not reimbursed (as is the case of small non-taxable businesses because their turnover is below the required threshold) or not reimbursed quickly or not totally (as is often the case for medium and large taxable businesses), this weighs on businesses in terms of the costs they have to bear on production. This mechanically undermines the efficiency of the tax system. It would therefore be very useful for the tax administration to reduce, as far as possible, the multiple exemptions in favour of targeted assistance to the vulnerable households, as was the case with the Novissi program, initiated during the COVID-19 crisis by the Togolese government, a program hailed by the 2019 Nobel Economics Prize winners Abhijit Banerjee and Esther Duflo. In addition, it is essential to set up a fluid mechanism for the reimbursement of VAT credits, so that VAT is only borne by final consumers and effectively neutral for businesses.

Secondly, the OTR must also acquire more technical, human and financial resources in order to carry out proper tax audits and identify firms that sometimes make false declarations or attempt to circumvent the tax laws in order to avoid paying taxes.

Given the idea of future research, we think it would be interesting to include more firms located in the national territory i.e. in the other regions than the *Maritime*, in order to better analyze the regional effect in identifying factors that underline the voluntary tax compliance of the firms. In this way, we could have the determinants of tax compliance in each of the five administrative regions of the country. It would also be useful to compare the tax compliance of foreign companies with that of domestic firms, however, the database used in this paper do not differentiate between foreign and domestic owned firms. Another important extension will be to distinguish between firms according to their activities (production of goods and/or services) as well as their sectors of activity (agriculture, agro-industry, construction, transport, telecommunications, etc.) in order to draw lessons in terms of tax policy, control and tax collection for a better efficiency of the tax system. Finally, it will also be important to examine whether certain tax policies, such as tax credits for certain firms, are an instrument for tackling tax evasion.

References

Abd Obaid, M. M., Ibrahim, I., & Udin, N. M. (2020). An investigation of the determinants of tax compliance among yemeni manufacturing smes using the fisher model. *International Journal of Psychosocial Rehabilitation*, *24*(04), 1809–1824.

Abdul-Jabbar, H. (2009). *Non-conformité fiscale des petites et moyennes entreprises en malaisie : Déterminants et coûts de conformité fiscale* (Unpublished doctoral dissertation).

Alm, J., & McClellan, C. (2012). Tax morale and tax compliance from the firm's perspective. *Kyklos*, *65*(1), 1–17.

Andreoni, J., Erard, B., & Feinstein, J. (1998). Tax compliance. *Journal of Economic Literature*, *36*(2), 818–860.

Bobek, D. D., Hageman, A. M., & Kelliher, C. F. (2013). Analyzing the role of social norms in tax compliance behavior. *Journal of Business Ethics*, *115*(3), 451–468.

Chow, C. (2004). Gearing up for the self-assessment tax regime for individuals. *Tax National*, *2*, 20–23.

Cuccia, A. D. (1994). The effects of increased sanctions on paid tax preparers: Integrating economic and psychological factors. *The Journal of the American Taxation Association*, *16*(1), 41.

Devos, K. (2014). Tax compliance theory and the literature. In *Factors influencing individual taxpayer compliance behaviour* (pp. 13–65). Springer.

Everest-Phillips, M., & Sandall, R. (2008). Linking business tax reform with governance: how to measure success washington. *DC: World Bank*.

Falanni, Z. (2015). „determinants of corporate taxpayer compliance behaviour: A study case at duren sawit small tax office in indonesia". *Economic Development, Indonesia*, 20.

Fischer, C. M., Wartick, M., & Mark, M. M. (1992). Detection probability and taxpayer compliance: A review of the literature. *Journal of Accounting Literature*, *11*, 1.

Fjeldstad, J., Odd-Helge et Semboja. (2001). Pourquoi les gens paient des impôts : le cas de la taxe de développement en tanzanie. *Développement Mondial*, *29*, 2059–2074.

Frey, B. S., & Torgler, B. (2007). Tax morale and conditional cooperation. *Journal of Comparative Economics*, *35*(1), 136–159.

Gbadago, F. Y., & Awunyo-Vitor, D. (2015). Gift tax compliance in ghana: evidence from kumasi metropolis. *Journal of Accounting and Taxation*, *7*(2), 29–37.

Greene, W. (2002). *Econometric analysis.* New Jersey: Prentice Hall.

Hanlon, M., Mills, L. F., & Slemrod, J. B. (2005). An empirical examination of corporate tax noncompliance. *Ross School of Business Paper*(1025).

Heinemann, F. (2011). Economic crisis and morale. *European Journal of Law and Economics*, *32*(1), 35–49.

Hug, S., & Spörri, F. (2011). Referendums, trust, and tax evasion. *European Journal of Political Economy*, *27*(1), 120–131.

James, S., & Alley, C. (2002). Tax compliance, self-assessment and tax administration.

Joulfaian, D. (2000). Corporate income tax evasion and managerial preferences. *Review of Economics and Statistics*, *82*(4), 698–701.

Kemme, B. e. S. T., David M et Parikh. (2020). Morale fiscale et évasion fiscale internationale. *Journal des Affaires Mondiales*, *55*, 101052.

Lago-Peñas, I., & Lago-Peñas, S. (2010). The determinants of tax morale in comparative perspective: Evidence from european countries. *European Journal of Political Economy*, *26*(4), 441–453.

Marien, S., & Hooghe, M. (2011). Does political trust matter? an empirical investigation into the relation between political trust and support for law compliance. *European Journal of Political Research*, *50*(2), 267–291.

McBarnet, D., et al. (2019). *When compliance is not the solution but the problem: From changes in law to changes in attitude*. Centre for Tax System Integrity (CTSI), Research School of Social Sciences ....

Mickiewicz, T., Rebmann, A., & Sauka, A. (2019). To pay or not to pay? business owners' tax morale: Testing a neo-institutional framework in a transition environment. *Journal of Business Ethics*, *157*(1), 75–93.

Mohamad, M. S., Marziana et Deris. (2018). Déterminants de la non-conformité fiscale parmi les petites et moyennes entreprises de la vallée de klang, malaisie.

Nor, J. M., Ahmad, N., & Saleh, N. M. (2010). Fraudulent financial reporting and company characteristics: tax audit evidence. *Journal of Financial Reporting and Accounting*.

Nur-Tegin, K. D. (2008). Déterminants de la conformité fiscale des entreprises. *The BE Journal of Economic Analysis & Policy*, *8*.

Oladipupo, A. O., & Obazee, U. (2016). Tax knowledge, penalties and tax compliance in small and medium scale enterprises in nigeria. *IBusiness*, *8*(1), 1–9.

Radulovic, B. (2019). Morality of informality: Tax morale in the serbian business sector–an empirical investigation. *Industrija*, *47*(1), 43–60.

Sapiei, N. S., Kasipillai, J., & Eze, U. C. (2014). Determinants of tax compliance behaviour of corporate taxpayers in malaysia. *eJTR*, *12*, 383.

Singh, V., & Bhupalan, R. (2001). The malaysian self-assessment system of taxation: Issues and challenges. *Tax Nasional*, *3*(1), 12–17.

Tedds, L. M. (2010). Keeping it off the books: an empirical investigation of firms that engage in tax evasion. *Applied Economics*, *42*(19), 2459–2473.

Torgler, B. (2011). *Tax morale, eastern europe and european enlargement*. The World Bank.

Torgler, B., Schaffner, M., & Macintyre, A. (2008). Tax compliance, tax morale and governance quality. In *Proceedings of the 16th annual conference on pacific basin finance, economics, accounting and management 2008* (pp. 1–25).

Torgler, B., & Schneider, F. (2007). What shapes attitudes toward paying taxes? evidence from multicultural european countries. *Social Science Quarterly*, *88*(2), 443–470.

Virmani, A. (1989). Indirect tax evasion and production efficiency. *Journal of public Economics*, *39*(2), 223–237.

Yucedogru, R. (2013). *Understanding tax morale and tax compliance of smes: An example of turkey*.

Yusof, L. M. e. W. Y. B., Nor Azrina Mohd et Ling. (2014). Non-conformité fiscale parmi les smc en malaisie : preuves d'audit fiscal. *Journal de Recherche Comptable appliquée*.

Appendix

Figure 5: Determinants of Business Tax Compliance (Baseline Model)

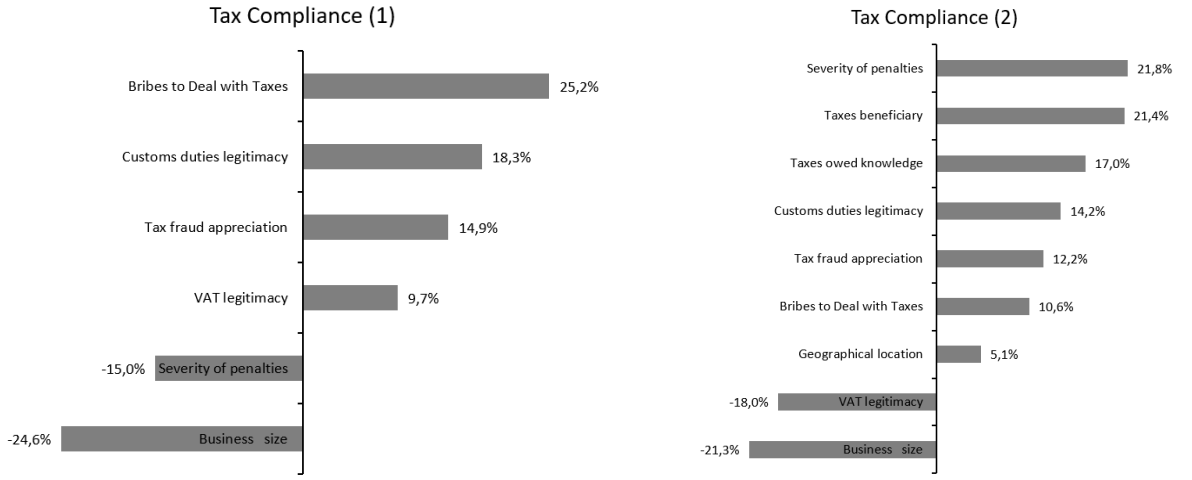


Figure 6: Determinants of Business Tax Compliance By Business Size (Small)

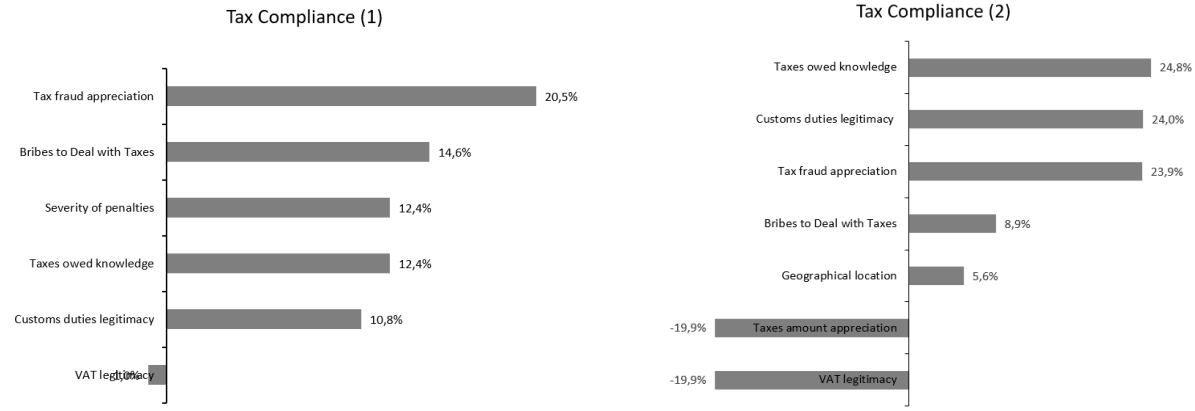


Figure 7: Determinants of Business Tax Compliance By Business Size (Medium)

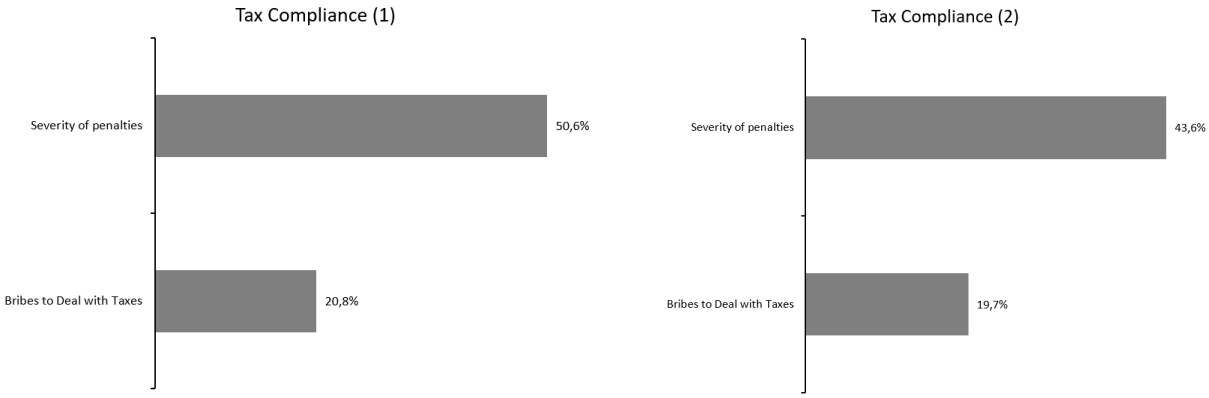


Figure 8: Determinants of Business Tax Compliance By Business Size (Large)

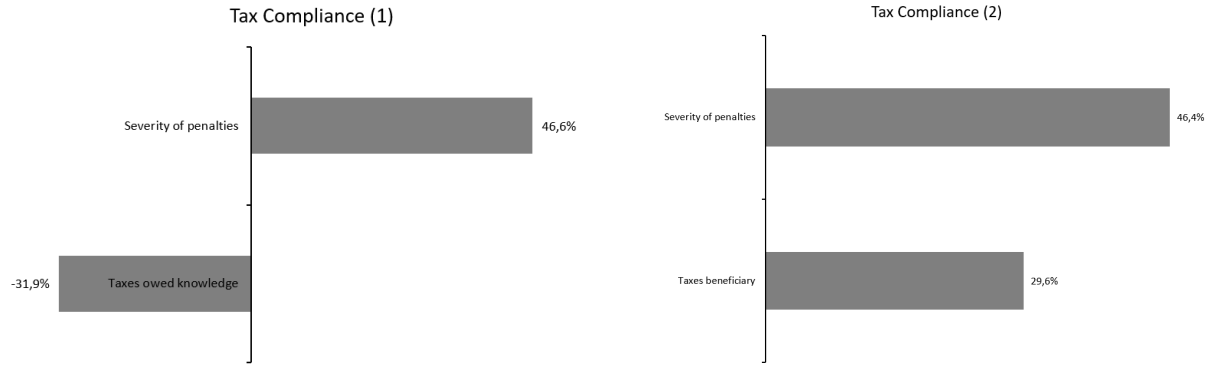


Figure 9: Determinants of Business Tax Compliance By Region (Maritime)

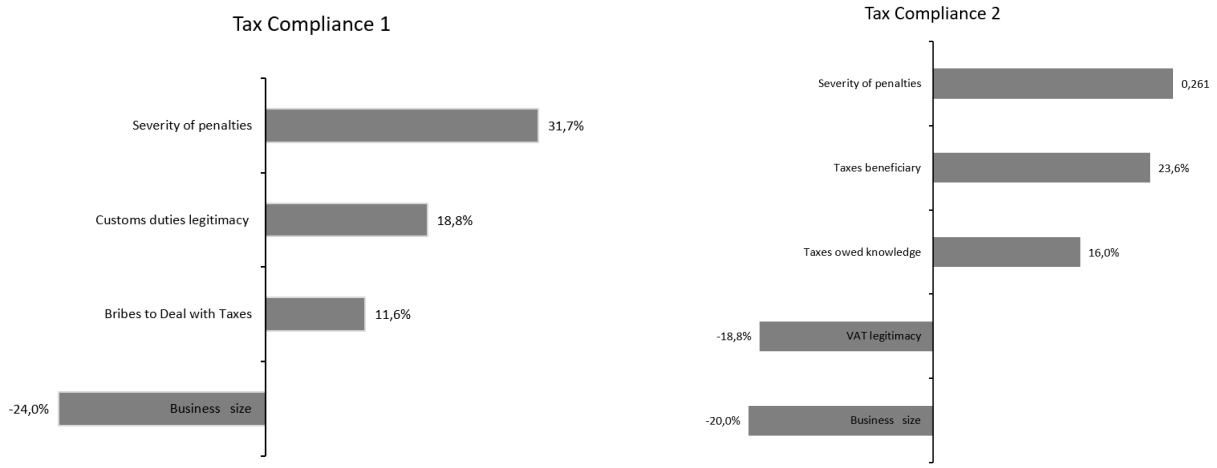
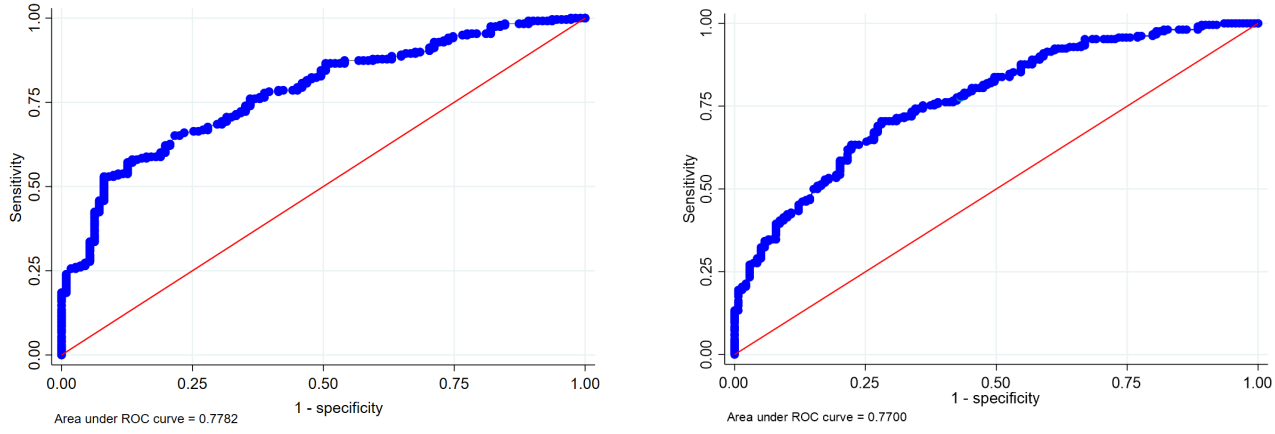


Figure 10: Area Under ROC Curve



(a) Tax Compliance 1

(b) Tax Compliance 2

Table 10: Descriptive statistics

Variables	Obs	Mean	Std.Dev.	Min	Max
Tax Compliance	361	0.687	0.464	0	1
Geographical location	413	1.392	1.027	1	5
Business size	413	1.656	0.823	1	3
Tax fraud appreciation	360	2.356	0.685	0	3
Bribes to Deal with Taxes	397	2.327	0.717	0	3
tax laws amendment (2019)	367	0.548	0.498	0	1
tax knowledge	401	0.658	0.475	0	1
Tax beneficiaries	361	0.468	0.500	0	1
Severity of penalties	400	0.777	0.416	0	1
Customs duties legitimacy	400	0.725	0.447	0	1
VAT legitimacy	400	0.848	0.360	0	1
Taxes amount appreciation	402	2.410	0.691	1	3
Tax burden	396	2.720	1.260	1	5

Table 11: Variance inflation factor (VIF)

Variables	VIF	1/VIF
tax laws amendment (2019)	2.00	0.500
Business size	1.96	0.509
Customs duties legitimacy	1.62	0.617
Taxes owed knowledge	1.60	0.626
Geographical location	1.37	0.732
VAT legitimacy	1.29	0.775
Severity of penalties	1.22	0.820
Bribes to Deal with Taxes	1.20	0.835
Tax beneficiaries	1.19	0.840
Taxes amount appreciation	1.11	0.898
Tax fraud appreciation	1.11	0.901
Tax burden	1.07	0.933

Table 12: Surveys administered to businesses

Variables	Questions	Modalities
Tax compliance (503)	Are you currently proud to pay your taxes ?	1 = Yes 2 = No
Tax compliance (501)	If you had the opportunity to pay less by negotiating with an OTR collectors for a gift, would you do it ?	1 = Yes 2 = No
Tax compliance (502)	If you had the opportunity to use gaps in the law to pay less, would you exploit them ?	1 = Yes 2 = No
Size	Classification according to reported turnover.	1 = Large 2 = Medium 3 = Small
Taxes owed knowledge	Do you know all the taxes you are subject to ?	1 = Yes 2 = No
Geographical location	According to the administrative division of the country.	1 = Maritime 2 = Plateaux 3 = Centrale 4 = Kara 5 = Savanes
Severity of penalties	In your opinion, with the advent of the OTR, is the tax administration more intransigent when fraudulent behavior is discovered ?	1 = Yes 2 = No
Bribes	How do you judge negotiation with OTR collectors to pay less tax ?	1 = Very poor 2 = Poor 3 = Indifferent 4 = Good
Tax beneficiaries	Do you think that the taxes paid serve more :	1 = Whole Togolese nation 2 = Public authorities
Tax amount appreciation	What is your impression of the amount of taxes you pay in Togo ?	1 = Largely supportable 2 = Acceptable 3 = Too high
Tax fraud appreciation	Do you think a citizen should use gaps in the law to pay less tax ?	1 = Very poor 2 = Poor 3 = Indifferent 4 = Good
Tax burden	How much of your income is from the taxes you personally paid for 2018 ?	1 = Less de 5% 2 = Enter 5 and 10% 3 = Enter 10 and 25% 4 = Ente 25 and 50% 5 = More 50%
tax laws amendment (2019)	Are you informed of the tax changes introduced by the 2019 management finance law ?	1 = Yes 2 = No
VAT legitimacy	Do you think it is legitimate to impose the following taxes on taxpayers in Togo ?	1 = Yes 2 = No
Costoms duties legitimacy	Do you think it is legitimate to impose the following taxes on taxpayers in Togo ?	1 = Yes 2 = No