

### **MASTER**

### ACCOUNTING

### **MASTER'S FINAL WORK**

### DISSERTATION

TRUST IN TAX AUTHORITIES, TAXPAYER AWARENESS, AND TAXPAYER

COMPLIANCE – EVIDENCE FROM MICRO AND SMALL ORGANIZATIONS IN

EAST TIMOR

CLAUDINA DE JESUS CONCEIÇÃO ALVES XIMENES

### **SUPERVISION:**

PROF. SOFIA MARGARIDA MORAIS LOURENÇO MARCH-2024



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#### **ABSTRACT**

This study investigates the relationships between trust in tax authorities, taxpayer awareness, and taxpayer compliance of small businesses in Dili, East Timor. This is an important issue because it can help governmental bodies, particularly the tax administration, to understand taxpayers' perspective about the tax system and regulations, as well as to create transparency and cultivate trust between taxpayers and tax authorities.

To explore these relationships, a survey, targeting business owners, was manually distributed. Survey data was analysed using regression analysis.

The findings of this study show that trust in tax authorities is positively associated with taxpayer compliance. Conversely, taxpayer awareness is only partially positively associated with taxpayer compliance. Specifically, taxpayer awareness regarding tax rate and tax reporting is positively related to taxpayer compliance, but no statistically significant relationship is found between taxpayer awareness regarding tax audit and penalties and taxpayer compliance,

**Keywords:** Small business, taxpayer compliance, trust in tax authorities, taxpayer awareness

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### CLAUDINA DE JESUS

# TRUST IN TAX AUTHORITIES, TAXPAYER AWARENESS, AND TAXPAYER COMPLIANCE – EVIDENCE FROM MICRO AND SMALL ORGANIZATIONS IN EAST TIMOR

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### LIST OF ABBREVIATIONS

ADB - Asian Development Bank KMO - Kaiser-Meyer-Olkin

OECD - The Organization for Economic Cooperation and Development

SME - Small and Medium Enterprises

#### 1 INTRODUCTION

East Timor is a young country that has become independent in recent decades. Less tax revenue might cause governments in developing countries to rely on external grants and natural resources (Besley & Persson, 2014). Because tax revenue is the primary resource to finance government expenditures (Gobena & Dijke, 2016), taxpayer compliance is particularly relevant.

In this regard, the government of East Timor, particularly the taxation department, tries to ensure that taxpayers comply with rules and regulations. However, ensuring taxpayers comply is challenging, especially in a country lacking transparency and productivity in the government system (Nkundabanyanga et al., 2017). Moreover, taxpayer compliance is complex because many factors can influence this behaviour. For example, prior research shows that it is essential to consider non-economic factors such as social norms and perceived fairness in their society because individuals tend to comply when they view others doing so (Kirchler et al., 2003). In addition, some research suggests that shadow economy or cash transactions in small businesses, particularly in developing economies, may lead to tax evasion (Chan et al., 2023; Schneider, 2004). Therefore, the main goal of this research is to study factors that can explain taxpayers' compliance in East Timor, particularly taxpayer awareness and trust in tax authorities.

This study uses 96 responses to a hand collected survey and regression analysis to analyse them. The findings of this study show that trust in tax authorities is positively associated with taxpayer compliance. Conversely, taxpayer awareness is only partially positively associated with taxpayer compliance. Specifically, taxpayer awareness regarding tax rate and tax reporting is positively related to taxpayer compliance, but no

statistically significant relationship is found between taxpayer awareness regarding tax evasion and penalties and taxpayer compliance.

This study contributes to the literature by exploring taxpayer compliance in a developing country - East Timor. Prior research has analysed this phenomenon in Cambodia and Ethiopia. For example, Youde & Lim (2019) combine economic and non-economic factors such as taxpayer awareness and trust in tax authorities to investigate the determinants of tax compliance in Cambodia for Small and Medium Enterprises (SMEs). Other empirical studies have focused solely on non-economic factors such as trust in tax authorities and power to investigate tax compliance in small businesses in Ethiopia (e.g., Gobena & Dijke, 2016). This study contributes to the abovementioned literature by focusing only on non-economic factors - taxpayer awareness and trust in tax authorities - in micro organizations in a different developing country – East Timor. Therefore, it responds to a call in the literature to consider taxpayer awareness when studying taxpayer compliance (e.g., Kamleitner, Korunka, & Kirchler, 2010)

The results of this study can also contribute to policy making in East Timor, as they open the black box of taxpayer compliance by highlight the role of taxpayer awareness and trust in tax authorities.

This study consists of five chapters. After this introduction - chapter one - chapter two presents the literature review and hypotheses. Chapter three describes the methodology of this study. Chapter four presents the results. Finally, chapter five describes conclusions, limitations, and future research.

#### 2. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

### 2.1 Background

Prior research suggests that economic aspects such as tax auditing, tax rate, and penalties, as well as non-economic aspects such as taxpayer assessment about public service and social norms are crucial factors explaining tax compliance (Alm et al., 1995). Some authors argue that many empirical studies have been conducted on tax evasion (Kirchler, 2010), most of them inspired in the seminal work conducted by Allingham & Sandmo (1972). This seminal study explores the likelihood of auditing and penalties to explain tax evasion. However, there are still few studies drawing on social and psychological aspects to explain tax evasion or compliance. In fact, some authors argue that non-economic aspects can be strong predictors of tax evasion/compliance. For example, a study conducted by Richardson (2006) with 45 countries suggested that non-economic factors such as taxpayer knowledge about income tax laws and their perception of how tax authorities enforce taxpayer compliance strongly influenced tax evasion. Other studies, such as Kirchler et al. (2008) and Kirchler (2007), highlight the role of trust in tax authorities in explaining taxpayer compliance, specifically whether it is voluntary compliance (non-economic aspect) or enforcement compliance (economic aspect). These studies also suggest that taxpayers will most likely pay their taxes when they realize the risk of being caught by the tax authorities when they engage in tax evasion. This phenomenon occurs in countries with high enforcement and can be only temporary. Conversely, when taxpayers perceive that the government and relevant public authorities have shown high interest in their people and act with honesty and integrity, taxpayers are

more likely to comply voluntarily, and this behaviour will last for an extended period (e.g., Kirchler, 2007; Kirchler et al., 2008; Kogler et al., 2013)

Therefore, non-economic factors are particularly important, specially in developing countries that have limitations in the economic resources they can use to prevent tax evasion. Understanding the behavior of the citizens towards the taxation system is crucial in this regard (Kogler, 2013). Moreover, when small businesses in developing countries fullfill their tax obligations in accordance with laws and regulation it will increase tax revenues. These countries can utilize these revenues to fund infrastructure and education expenses which play a significant role in contributing to economic development, job employment, and welfare (Acs et al., 2008).

Trust in tax authorities and taxpayer awareness are commonly used factors to studytax compliance (e.g., Kirchler, 2007; Kirchler et al., 2008; Kirchler et al., 2010 Gobena & Dijke, 2016; Youde & Lim, 2019). Some empirical studies have combined economic and non-economic aspects to explore the determinants of tax compliance for SMEs (Youde & Lim, 2019), but non-economic factors are particularly important in developing countries, such as East Timor.

### 2.2 Taxpayer Compliance

The earliest empirical study about taxpayer compliance has been conducted by Allingham & Sandmo (1972). Since then, many studies have combined economic and non-economic factors to study taxpayer compliance (e.g., Devos, 2013; Youde & Lim,

2019). According to Kirchler & Wahl (2010) taxpayer compliance can be either voluntary, based on taxpayer assessment and ethical standards, or enforced, based on economic factors such as the probability of audit and fines (e.g., Youde & Lim, 2019). Few empirical studies explore taxpayer compliance using non-economic factors, such as social and psychological variables (e.g., Kirchler & Wahl, 2010). Prior studies suggest that when taxpayers are aware of the tax system and tax regulations tax compliance increases (e.g., Kirchler et al., 2006). Additionally, other empirical studies show that taxpayer compliance increases when taxpayers understand the consequences of engaging in tax evasion (e.g., Youde & Lim, 2019). In addition to taxpayer awareness, trust in tax authorities emerges as another non-economic factor influencing taxpayer compliance. Specifically, when taxpayers trust tax authorities their attitudes towards tax obligations will improve and lead to tax compliance (e.g., Kirchler, Hoelzl, & Wahl., 2008).

Therefore, this study will focus on social and psychological aspects of taxpayer compliance by investigating the role of taxpayer awareness and trust in tax authorities.

### 2.3 Taxpayer Awareness

Research from prior empirical studies shows that taxpayer awareness influences taxpayer compliance (e.g., Youde & Lim, 2019). That is, when taxpayers are aware of tax system and regulations, they will comply more (Youde & Lim, 2019). Taxpayer awareness refers to knowledge about tax laws and systems such as tax payments, tax rates,

tax files, tax penalties, the consequences of tax evasion, and the use of tax revenues, namely their contribution for the country's development.

Prior empirical studies conducted in Cambodia for small and medium enterprises suggest that improving taxpayer awareness of the tax system and regulations, including the classification of tax payments and tax rates, is an efficient method to increase tax compliance (Youde & Lim, 2019). This finding corroborates prior evidence from Korea, suggesting that individual taxpayer awareness about the tax system reduces tax non-compliance (Park & Hyun, 2003).

Owners and managers who are aware of the tax system, such as tax reporting and penalties, will tend to comply with tax laws (Okpeyo et al., 2019). Small business owners avoid their obligations when they do not understand the tax system (Kamleitner et al., 2010). Hence, some authors suggest that studying tax compliance can sometimes be tricky and complex and cannot only be explained by a purely rational economic approach (Kirchler et al., 2008; Kirchler et al., 2010;). Therefore, other factors, such as tax knowledge, should be considered to obtain a complete understanding of the tax compliance phenomenon. Other authors, suggest that owners and managers of SMEs would change their tax non-compliance behaviour if they realized the consequences of not filing their reports accurately (Oladipupo & Obazee, 2016). In this regard, Park & Hyun (2003) suggest that that when taxpayers understand the consequences of unlawful tax avoidance, their tax compliance increases.

Of course, some tax non-compliance is impossible to eliminate as taxpayers sometimes behave intentionally. For example, they may try to reduce their companies'

tax payments by increasing their expenditures and reducing their income. Small businesses have more opportunity to cheat their tax payments because they can report it directly to tax authorities (e.g., Kirchler et al., 2003)

Based on the previous arguments, I propose the following hypothesis:

H1: There is a positive relationship between taxpayer awareness and taxpayer compliance.

#### 2.4 Trust in Tax Authorities

Prior research shows that the behavior of SMEs in complying with tax regulations is influenced by factors such as trust in tax authorities (Youde & Lim, 2019). It also suggests that positive views of taxpayers towards tax agencies reduces tax evasion and encourages tax compliance. When taxpayers disobey their obligation, they usually perceive tax authorities as less competent and less transparent (Kogler et al., 2013).

Trust in tax authorities refers to taxpayers' perception of the tax administration's transparency, honesty, and professionalism when conducting their duties. Taxpayers are likelier to comply with their tax obligations when they assess that tax authorities are deliberately unbiased, competent, trustworthy, and fair when performing their tasks. Prior empirical studies suggested that taxpayers will voluntarily comply when they perceive an honest, fair, and just behaviour of the tax authorities (Kirchler et al., 2008).

According to the theory of planned behavior, individuals tend to behave correctly when their perception of how others treat them is fair and just (Ajzen, 1991). Aligned

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with this theory, some studies suggest that when taxpayers perceive no bias or favoritism in tax authorities, their trust in the government increases (Fjeldstad, 2004; Kirchler et al., 2008; Torgler, 2003), which will raise their tax compliance. When taxpayers have confidence in their government, their ethical attitudes towards the tax system will be more positive, which leads to an increase in tax compliance (Koumpias et al., 2020).

Cross country comparative analysis is consistent with these arguments. Specifically, in countries with greater accountability and transparency tax revenues are higher (e.g., Bird et al.,2008; OECD, 2013). Also, in countries where the government and its officials perform their responsibilities with honesty and credibility, the number of tax evasion cases is smaller (Torgler & Schneider, 2007).

Based on the above discussion, I state my second hypothesis:

H2: There is a positive relationship between trust in tax authorities and taxpayer compliance.

### 3. METHOD

### 3.1 Data Description and Survey Design

To empirically test the aforementioned hypotheses, I conducted a questionnaire targeted at owners, managers, and employees with the responsibility to fulfil tax

obligations of micro and small organizations in East Timor.<sup>1</sup> Micro and small organizations are a significant part of the organizations' population in a developing country like East Timor. Moreover, these organizations play a crucial role in contributing to the country's development (Gobena & Dijke, 2016). Around 70% of the private sector in East Timor are micro and small organizations (according to ADB's estimation).<sup>2</sup> This percentage indicates that micro and small organizations play significant roles in the economic development of the country. For this reason, and to assure some degree of comparability between the responses, this study targets only micro and small organizations.<sup>3</sup> Prior to data collection and to ensure the clarity and readability of the questionnaire a pilot test was conducted. To ensure that the survey instrument was understandable and comprehensible to the target audience, the questionnaire was translated into the native language (Tetum) because the majority of the individuals in East Timor communicates in the local dialect and not in English. After the translation, I manually distributed twenty questionnaires to owners/managers/employees with tax responsibilities of small organizations in Dili (the capital city of East Timor) in August

<sup>&</sup>lt;sup>1</sup> According to ADB's report simplifying business registration in East Timor https://development.asia/insight/simplifying-business-registration-timor-leste

<sup>&</sup>lt;sup>2</sup> https://development.asia/insight/simplifying-business-registration-timor-leste

<sup>&</sup>lt;sup>3</sup> ADB's project about Simplifying Business Registration in East Timor (https://development.asia/insight/simplifying-business-registration-timor-leste) they defined this as small enterprises because most respondents have fewer than thirty employees.

2023.<sup>4</sup> Altogether, I obtained twenty responses and used their feedback to improve the readability, length, and clarity of the instrument.

After this pilot, the data collection started in September 2023 and lasted until December 2023. In total, I distributed 150 questionnaires. Out of this number, I obtained 98 responses as some respondents refused to participate or complete the survey. Therefore, the responses rate of this survey is 65%. From the 98 responses, I removed two observations due to missing data in key variables. Thus, I am left with 96 valid responses. I used STATA to analyze the data collected.

The descriptive statistics of the respondents are presented in Table 1. The respondents' ages fell within the early thirties, with a mean age of 30.16. Organizations in the sample have a mean of 6.3 employees (median is 6). The largest organization in the sample has 30 employees. 41% of the respondents are women, and 59% are men. The majority of the respondents in the sample are employees with tax responsibilities (51%), followed by owners (30%), and managers (17%). The remaining 2% have finance-related positions. In terms of type of organizations, non-profit organizations dominate the sample (71%), while profit and state-owned companies represent 16% and 13%, respectively. As for the legal structure of the business, limited liabilities organizations are 17% of the sample, sole traders represent 37%, and single-member limited liability organizations 46%. Independent organizations constitute nearly 86% of the sample, while organizations

<sup>4</sup> East Timor has 13 administrative districts, including Dili. I am only focusing on Dili for this study because most small businesses operate there.

belonging to a group and state-owned companies represent 6% and 8%, respectively. Respondents who stated that their businesses used accounting systems constitute 47%, while 53% do not use accounting software. Concerning tax obligations, most of the respondents are required to pay taxes (91%). In terms of year of establishment, around 19% of organizations in the sample began operations between 1999 and 2012. While 81% were established from the year 2013 to 2022. Finally, most businesses report that they do not hire accounting professionals for tax matters (79%), and only 21% state that they hire tax accountants.

Panel A: Demographic and Employement Charactheristic of Respondents						
Variable	N	Min	Mean	Med	Max	St Dev
Age (years)	96	20	30.15	28	54	7.47
NOE	95	1	6.3	6	30	4.12
WE	96	1	4.26	3	30	3.46
Panel B: Gender Distribution of Responden	t: Number	%				
Female	39	0.41				
Male	57	0.59				
Total	96	1				
Panel C: Title of Respondents	Number	%				
Owner	29	0.30				
Manager	16	0.17				
Staff	49	0.51				
Other/Finance Officer	2	0.02				
Total	96	1				
Panel D: Type of Company	Number	%				
Nonprofit	64	0.71				
Profit	14	0.16				
so	12	0.13				
Total	90	1				
Panel E: Legal Structure of the Company	Number	%				
Single member limited liability company	44	0.46				
Soletrader	35	0.37				
LDA	16	0.17				
Total	95	1.00				
Panel F: Nature of the Company	Number	%				
Group Company	5	0.06				
Independent Company	74	0.86				
Stateowned Company	7	0.08				
Total	86	1				
Panel G: Utilization of Accounting System						
(YES/NO)	Number	%				
Accounting System (YES)	45	0.47				
Accounting System (NO)	51	0.53				
Total	96	1				
Panel H: Tax Exemption (YES/NO)	Number	%				
Tax Obligation (YES)	86	0.91				
Tax Obligation (NO)	8	0.09				
Total	94	1				
Panel I: Type of Tax	Number	%				
Witholding Tax	5	0.06				
Income Tax	70	0.85				
Service Tax	7	0.09				
Total	82	1				
Panel J: Hiring Accounting Professional for						
Tax reporting (Yes or No analysis)	Number	%				
Professional Accounting (YES)	20	0.21				
Professional Accounting (NO)	75	0.79				
Total	95	1				
Panel K: Year of Establishment	Number	%				
1999-2012	18	0.19				
2013-2022	18 77	0.19				
2013-2022 Total	95	1.00				

### 3.2 Variable Measurement

In this study, I use previously validated scales to increase the reliability of the instrument (e.g., Devos, 2013; Gobena & Dijke, 2016; Kirchler et al. 2010; Youde & Lim,

2019). Nevertheless, I evaluate the content and construct validity by conducting some empirical assessments. For example, I use exploratory factor analysis to check the internal consistency of the constructs (Nunnally , 1978). Furthermore, I examine whether each survey item robustly correlates with its intended factor (consistent validity) by confirming a substantial factor loading, typically exceeding 0.50 (Hair et al., 2014). Further, to test the adequacy of the sample, I use the KMO statistics to ensure that data are adequate for factor analysis.

The measurement of variables is discussed in the following sections and presented in Table 2. Table 3 shows the items and questions used for each variable.

TPC	
0.87	-0.16
0.88	-0.01
0.72	0.31
0.62	0.04
-0.00	0.97
0.80	
0.50	
0.71	
2.52	1.17
	0.87 0.88 0.72 0.62 -0.00 0.80 0.50 0.71

	Factor 79%	
	TPA_R	TPA_S
Taxpayer Awareness		
TPA1	-0.08	0.91
TPA2	0.16	0.77
TPA3	0.77	-0.03
TPA4	0.88	-0.06
TPA5	0.70	0.22
Alpha	0.71	0.62
Variance (%)	0.36	0.43
KMO	0.72	
Eginvalues	2.15	1.80
	T	
Trust in Tax Authority		
T1	0.80	
T2	0.84	
T3	0.67	
T4	0.60	
Alpha	0.71	
Variance (%)	0.54	
KMO	0.67	
Eginvalues	2.18	

together.

Table 3 Survey Items	
<b>Taxpayer Compliance</b> (1= Strongly disagree, 7 = Strongly agree) Please select the level of your agreement with each of the follow	ing statements:
Item	Label
When my company pays taxes as required by the regulations, my company does so because to me it's obvious that this is what the company should do	TPC1
When my company pays taxes as required by the regulations, my company does so to support the state and the citizens	
	TPC2
When my company pays taxes as required by the regulations, my company does so because my company likes to contribute to	
everyone's good	TPC3
When my company pays taxes as required by the regulations, my company does so because for my company it's the natural thing	
to do	TPC4
When my company pays taxes as required by the regulations, my company does so because my company regards it as the	
company's duty as a citizen	TPC5
Taxpayer Awareness (1= Know nothing, 5 = Know a lot) Please select your level of knowledge regarding each of the follow	wing questions:
Item	Label
Do you know what type of taxes does your company must pay?	TPA1
What do you know about the company tax rate?	TPA2
Do you know what is the likelihood of your company being	
audited (i.e., have an auditor inspect your company records or	
conduct an interview)?	TPA3
Do you know what the penalties for companies who evade tax are?	
	TPA4
Do you know the deadline for each type of company tax for declaration and payment?	
acciaration and payments	TPA5
Trust in Tax Authority (1= Strongly disagree, 5 = Strongly agree) Please select your level of agreement with each of the following:	statements:
Item	Label
Tax officials approach their jobs with professionalism and dedication	
I can talk freely to these officials about the difficulties I am	T1
having regarding company taxes and know that they will want to listen.	T1
If I shared my problems with these officials, I know they would respond constructively and caringly.	т1
We would feel a sense of loss if we could no longer work	T1

T1

### 3.2.1 Taxpayer Compliance

Taxpayer compliance is the dependent variable of this study. To measure this variable I used a scale developed by Kirchler et al. (2010). The authors designed various items to measure voluntary tax compliance and enforced tax compliance in their study. These authors suggest that voluntary tax compliance is based on the willingness of the citizen towards tax obligations while enforced tax compliance is based on the power of the tax authority to force citizens to pay taxes due to the risk of audits, fines and penalties. In this study, I will use only the items to measure voluntary tax compliance which is aligned with my hypothesis. The original scale had eight items, but due to research context of this study – micro and small organizations - I only used 5 items. I ask respondents their level of agreement with several tax behaviours and attitudes (e.g., "when my company pays taxes as required by the regulations, my company does so because, to my company, it is evident that this is what the company should do") on a 7-point Likert scale (1=strongly disagree and 7 =Strongly Agree).

The exploratory factor analysis with oblique rotation suggests the retention of two factors. The eigenvalues for these factors are 2.52 (F1) and 1.17 (F2) respectively. As can be seen in the table, items 1 to 4 load in F1. This first factor explains 50% of the variance and has a Cronbach Alpha of 0.80. F2 is a single item factor and it will not be used in this study as regression analysis requires a single dependent variable. The Kaiser-Meyer-Olkin test (KMO) used to evaluate the adequacy of the sample was performed, yielding an overall result of 0.71. This result indicates that items for measuring TPC are associated with each other.

#### 3.2.2 Taxpayer Awareness

To measure Taxpayer Awareness (TPA) I used a scale developed by Devos (2013) and adapted by Youde & Lim (2019). I used this adapted scale, where respondents are instructed to express their level of understanding regarding the taxation system, specifically in aspects like auditing, penalties, and tax rates, using a 5-point Likert scale where options ranged from *I* (*know nothing*) to 5 (*know a lot*). As an illustrative example, one of the items asked "*Do you know what type of taxes your company must pay?*".

The exploratory factor analysis with oblique rotation shows two factors with eigen values greater than one. The eigenvalue for factor one is 2.15 and for factor two 1.80. TPA1 and TPA2 load on one factor (factor loadings of 0.91 and 0.77, respectively), with a variance explained of 43%. These two items are mainly about tax types and rates; for instance, TPA1 relates to the type of tax, and TPA2 is associated with the tax rates. Therefore, I created a factor related with taxpayer awareness of the tax types and rates, which I labelled TPA\_S (Cronbach Alpha of 0.62).

Conversely, TPA3, TPA4, and TPA5 load on another factor (loadings of 0.77, 0.88, and 0.70, respectively). These items explain 36% of the variance. These items refer to tax rules. Specifically, TPA3 refers to tax audits and auditor, TPA4 to penalties, and TPA5 to the due date for each type of tax. As such I created a factor related with taxpayer awareness of the tax rules, which I labelled TPA\_R (Cronbach Alpha of 0.71).

#### 3.2.3. Trust in Tax Authorities

To measure trust in tax authorities (T) I used a scale developed by Gobena & Dijke (2016) and later used by Youde & Lim (2019). The original scale differentiated trust into two categories: i) trust based on the taxpayer assessment, such as fairness, competencies, and reliability of tax administration (cognition-based trust), and ii) an emotional feeling related to caring and affection toward the trustee (affect-based trust). However, Gobena & Dijke (2016) declared that affect-based trust will not be relevant to study tax compliance in a developing country because when tax authorities enforce compliance with tax laws, it may lead to tax resistance among taxpayers. In this situation, taxpayers are less likely to have an emotional attachment or care towards tax authorities. Hence, these authors focus mainly on cognition-based trust. Hence, I employed the items used by Youde and Lim (2019) to measured trust in tax authorities. Participants responded on a 5-point Likert scale ranging from *1=strongly disagree to 5=strongly agree*. One example of the items asked is: "*Tax officials approach their jobs with professionalism and dedication*".

The exploratory factor analysis with oblique rotation shows a single factor with eigen value of 2.18. All items have factor loadings greater than 0.50 and together they account for 54% of the variance. The KMO test indicates a moderate sampling adequacy of 0.67. The Cronbach Alpha is 0.71, which suggests a good internal consistency.

### 3.2.4 Control Variables

In some of the analyses, and to evaluate the robustness of my results, I included control variables, selected according to prior literature. I now describe these variables also obtained via the questionnaire.

Gender. Some empirical studies include gender in studies on tax compliance. For example, Kastlunger et al. (2010) study the effect of gender on tax audit revealed that females, will be more likely to comply with taxes when they do not have strategies for tax audit. At the same time, men are more aggressive in avoiding their tax payments. Gender is a binary variable coded as 1 for females and 0 for males.

Working Experience. I asked respondents to indicate the number of years of their working experience (WE). The behavior of individuals with working experience regarding tax compliance is intricate. For example, empirical studies on tax morale state that individuals' compliance with tax laws is influenced by their values (e.g., Randlane 2016), which can be affected by their working experience.

*Number of employees*. I asked respondents to indicate the number of employees (NOE) working in their organization. The rationale to include this variable is that tax behavior may differ according to the size of the organization.

Accounting System. The use of accounting software (AS) is a binary control variable in this study. The questionnaire asks respondents whether their company utilizes an accounting system, to which respondents could answer either YES or NO. Incorporating

this dummy binary variable will allow me to understand if small businesses using an accounting system differ in their tax compliance behavior from those that do not use such systems. In fact, some authors suggest that in some countries, compliance costs have a significant impact on small businesses because these organizations have to acquire resources such as accounting software (e.g., Chittenden et al., 2005; Kamleitner et al., 2010;). Therefore, these businesses may not comply with their tax obligations due to these additional costs.

Accounting Professional. I measured Accounting Professional (AP) as a dummy variable. This variable is included as a control factor because small and medium organizations which hire tax practitioners for tax purposes may want to avoid error and mistakes. A tax expert may help in this regard, as well as advise the company in tax matters. Hence, the reports from these companies may be more in line with tax laws and regulations and they are less likely to engage in tax non-compliance (Youde & Lim, 2019). Therefore, in my survey I asked participants whether they have employed an accounting professional for handling tax matters, and the response options were YES or NO.

#### 4. RESULTS

### 4.1 Descriptive Statistic and Exploratory Analyses

Table 4 shows the descriptive statistics of the main variables. On average, individuals report a TPC of 4.54 with a median of 5 (on a scale of 1, minimum, to 7, maximum). This

result implies that TPC is slightly above the midpoint of the scale. Regarding TPA\_R, mean is 2.33 and the median is 2 (on a scale of 1, minimum, to 5, maximum). This variable refers to tax audits and penalties, and, therefore, data shows a weak knowledge about these components. Regarding the variable TPA\_S, which refers to participants' knowledge about the tax system, the average is 2.9 and a median of 3 (on a scale of 1, minimum, to 5, maximum). This implies that knowledge about the tax rate and type of tax is roughly in the midpoint on the scale and, hence, that participants have a medium understanding of the tax system. Finally, regarding T participants report an average of 3.2 and a median of 3 (on a scale of 1, minimum, to 5, maximum). Therefore, T is slightly above the midpoint of the scale.

Table 4. Descriptive Statistics of Variables

Data 1: Main Variables							
Variable	Range	N	Min	Mean	Med	Max	St Dev
TPC	1-7	96	1	4.54	5	7	1.58
TPA_R	1-5	96	1	2.33	2	4	1.08
TPA_S	1-5	96	1	2.90	3	5	1.12
T	1-5	96	1	3.20	3	5	1.11

Table 5 shows the correlations among the main and continuous control variables - age, working experience, and number of employees. This table provides first evidence on the relationships among the variables. Specifically, the table shows that there is a positive and statistically significant correlation between TPC and TPA\_S (r=0.48, p<0.001) and between TPC and T (r=0.53, p<0.001). Conversely, there is neither a statistically significant correlation between TPC and TPA\_R, nor between TPC and the control

variables. Additionally, the table shows some statistically significant correlations among the independent variables and/or the control variables. Namely, TPA\_S and TPA\_R (r=0.35, p<0.001), T and TPA\_S (r=0.26, p<0.001). However, there is no statistically significant correlation between T and TPA\_R. Additionally, there is a statistically significant correlation between Age and both TPA\_S (r=0.20, p<0.1) and TPA\_R (r=0.17; p<0.1). Similarly, there is a statistically significant correlation between WE and both TPA\_S (r=0.24, p<0.05) and TPA\_R (r=0.18, p<0.1). Finally, there is a statistically significant negative correlation between T and NOE (r=-0.17, p<0.1).

Table 5 Correlation between main variables and continuous control variables

Variable	1	2	3	4	5	6	7
1 TPC	1						
2 TPA_S	0.48	1					
	0.00***						
3 TPA_R	0.08	0.35	1				
	0.41	0.00***					
4 T	0.53	0.26	0.03	1			
	0.00***	0.00***	0.72				
5 WE	0.03	0.24	0.18	0.08	1		
	0.73	0.01**	0.06*	0.43			
6 Age	-0.11	0.20	0.17	-0.05	0.65	1	
	0.28	0.05*	0.09*	0.63	0.00***		
7 NOE	-0.17	-0.15	0.13	-0.17	0.00	-0.16	1
	0.10	0.13	0.21	0.09*	0.98	0.11	

Note \*, \*\*, \*\*\* indicate the statistical significance at the 10%, 5%, and 1%, respectively

Table 6 presents the T-test for mean differences of the dependent variable according to the binary control variables, namely Gender, Accounting System and Professional Accountant, collected in the survey. The results show that TPC differs by gender (t-

test=1.84; significant p<0.1), with women reporting a higher tax compliance than men. Conversely, there are no statistically significant differences between PA and AS suggesting that hiring a professional accountant or having an accounting software are not related with tax compliance behavior. These results are somewhat different from prior research (e.g., Youde & Lim, 2019) and may reflect the specificities of the sample (in a developing country and dominated by non-profit organizations).

Table 6. T-test comparing the mean difference with TPC

Variable		n	Mean	T-test	Pvalue
	Male	57	4.30		
Gender	Female	39	4.90	1.84	0.06*
PA	Yes	75	4.65		
FA	No	20	4.05	1.52	0.13
AS	Yes	51	4.68		
AS	No	45	4.37	0.95	0.34

Note  $\star$ ,  $\star\star$ ,  $\star\star\star$  indicate the statistical significance at the 10%, 5%, and 1%, respectively

### 4.2. Analysis

After conducting the previous bi-variate analyses about the relationships between the independent variables and the dependent variable, I now test my hypotheses using regression analysis. My first model is the following:

$$TPC = \beta 0 + \beta 1TPA S + \beta 2TPA R + \beta 3T + \epsilon i$$

(Equation 1)

where the names of the variables are those described before, and \(\varepsilon\) is the error term.

In addition to this first model and given that TPA and T will likely not explain all the variance in TPC, I also run a second model by adding some control variables. The choice of these variables obeyed to prior literature, as previously described, as well as to multicollinearity considerations (as some variables are highly correlated) and degrees of freedom of the sample (as sample size is limited).

The control variables included in the model are the following: WE, NOE, AS, PA and gender. Therefore, the second model (in abbreviated form) is the following:

TPC= 
$$\beta$$
0 +  $\beta$ 1TPA\_S +  $\beta$ 2TPA\_R+  $\beta$ 3T +  $\sum \mu$  Controls +  $\epsilon$ 

(Equation 2)

Table 7 shows the OLS regression estimates, with robust standard errors, for equations 1 and 2. Column 1 estimates equation 1 and shows that TPA\_S is positive and significantly associated with TPC (a one-unit increase in awareness is associated with a 0.55 increase in TPC). Similarly, T is positive and significantly associated with TPC (a one-unit increase in trust is associated with a 0.69 increase in TPC). Conversely, TPA\_R is not statistically associated with TPC. These results corroborate H2 but only partially confirm H1. Column 2 estimates equation 2 and corroborates the previous results as the sign and the significance of the coefficients remains the same. All other control variables are not statistically significant in explaining the variance of TPC.

These findings partially support the argument that micro and small organizations which have a limited understanding of the type of tax and tax rates are less likely to exhibit tax compliance behaviour (Youde & Lim, 2019). Additionally, the analyses support the argument that when taxpayers trust tax authorities, they are more likely to comply with tax requirements (e.g., Kogler, et al., 2013; Youde & Lim, 2019).

Table 7. Regression analysis of taxpayer compliance

	Predicted			Column 3	Column 4
	Sign				
Sample		Full	Full	Full	Full
Jampie			Sample	Sample	Sample
TPA_S	+	0.55***	0.55***		
		(0.12)	(0.13)		
TPA_R	+	-0.10	-0.08		
		(0.12)	(0.14)		
TPA	+			0.27**	0.35**
				(0.12)	(0.13)
T	+	0.69***		0.72***	0.84***
		(0.01)	(0.16)	(0.11)	(0.13)
Controls:					
WE			-0.04		-0.04
			(0.04)		(0.03)
NOE			-0.01		-0.02
			(0.03)		(0.03)
AS			-0.15		-0.42
			(0.32)		(0.31)
PA			0.34		0.16
			(0.4)		(0.38)
gender			0.11		0.30
			(0.27)		(0.26)
N		96	94	96	94
F-model		22.24***	8.46***	23.98***	9.57***
Adjusted R-squared		0.40	0.40	0.32	0.40

Note: The regression coefficients are reported together with standard errors enclosed in parentheses.\*,\*\*,\*\*\* indicate statistical significance at the significance level 0.1, 0.05, and 0.01, respectively

#### 4.3 Robustness Tests

Given that not all constructs of the main variables are aligned with the original scales, I run two additional regressions (with and without controls) using the original scales. Columns 3 and 4 of Table 7 show the estimates of these regressions. Overall, the regressions are overwhelmingly consistent with those reported in columns 1 and 2, as the sign and significance of the coefficients are similar. Specifically, I find evidence that TPA and T are positively and significantly related with TPC. For example, in column 3, for one unit increase in TPA, TPC is expected to increase by 0.27, while one unit increase in T increases TPC by 0.72. Column 4 shows similar results.

### 5. CONCLUSION, LIMITATIONS, AND FUTURE RESEARCH

Many empirical researchers have explored noncompliance of taxpayers (e.g., Kirchler & Wahl, 2010). Some of these studies focus on tax compliance in some specific countries and specific taxpayers, and they combine economic and non-economic factors to explain tax compliance (e.g., Park & Hyun, 2003; Richardson, 2006; Youde & Lim, 2019;). Trust in tax authority (e.g., Kirchler et al., 2008; Kogler et al., 2013) and taxpayer awareness (e.g., Kamleitner, Korunka, & Kirchler, 2010) are among the most relevant non-economic factors identified to explain taxpayer compliance. Therefore, this dissertation investigates the role of these factors in explaining taxpayer compliance for micro and small organizations in Dili, the capital of East Timor. Based on 96 responses from owners,

managers, and staff of micro and small organizations, the results indicate that taxpayer awareness related to the different types of tax and tax rates is positively associated with taxpayer compliance.

This finding partially supports the argument that the tax behavior of micro and small organizations is influenced by their (limited) understanding of the tax reporting system (e.g., Youde & Lim, 2019). Furthermore, the results also indicate that trust in tax authorities is positively associated with taxpayer compliance. This finding supports the argument that taxpayers from micro and small organizations in developing countries will comply voluntarily when they perceive that tax authorities are credible, transparent, competent, and trustworthy (e.g., Gobena & Dijke, 2016; Kirchler et al., 2008; Kogler et al., 2013; Youde & Lim, 2019).

Based on the evidence of this study, the tax authorities in East Timor can invest in training and communication regarding the tax system as these are likely to increase taxpayers awareness. By being aware of the different types of tax and tax rates, taxpayers are more likely to comply with tax payments. Moreover, by developing and cultivating a culture of transparency, trustworthiness, competency and credibility, tax authorities will increase the trust taxpayers have on them. This trust will also imply a greater tax compliance.

This study is not without limitations, and therefore, the results must be interpreted with caution. First, the results are based on a small number of responses from micro and small organizations, particularly from the non-profit sector, in Dili. Therefore, the results may not generalize for the rest of the country and to medium and large for-profit

organizations. Second, there may be response bias regarding tax behavior (e.g., Kirchler & Wahl, 2010). To encourage honest responses, the participants were assured the anonimity of their responses but social desirability bias may have still played a role. Third, and even though the door-to-door data collection method intended to identify the person responsible for filling in the taxes in the organization, there is still the risk that the respondent was not the adequate person and s/he may not had a clear understanding of the questions.

This study offers multiple avenues for future research. For example, new studies may combine economic and non-economic factors to explain taxpayer compliance. Future studies can also compare taxpayer behavior in different regions in East Timor. Additionally, it would also be interesting to explore differences in tax compliance of small, medium, and large enterprises, as well as for-profit and non-profit organizations.

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