

TAX COMPLIANCE AND SLIPPERY SLOPE FRAMEWORK: COMPARATIVE ANALYSIS OF PORTUGUESE AND SWISS TAXPAYERS

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**TAX COMPLIANCE AND SLIPPERY SLOPE FRAMEWORK: COMPARATIVE
ANALYSIS OF PORTUGUESE AND SWISS TAXPAYERS**

Abstract: This research aims to assess the perception of Portuguese and Swiss individual taxpayers in relation to various aspects of their relationship with tax authorities and the respective impact on tax evasion. The results show that trust presented the greatest number of significant differences, considering the control variables sex, age, country, tax return submission, tax education, conjugality, Current Feeling of Belonging to a Religion, religion and degree of comfort with the income. We also found that voluntary tax compliance, trust and legitimate power, are statistically significant and negatively correlated with tax evasion. In addition, we also found that there is a positive and statistically significant correlation between tax evasion and the dimensions enforced tax compliance and coercive power.

JEL Classification: H20, H24 and H26.

Keywords: Tax compliance, power, trust, slippery slope framework.

1 Introduction

Tax authorities influence taxpayer's behaviour to comply with tax law through displaying power and/or establishing a trust relationship. Therefore, it is crucial to understand what influences taxpayers' attitudes towards tax compliance. Trust, perceptions of fairness and corruption have consistently been identified as playing a crucial role in tax compliance (Torgler, 2003, 2004; Wenzel, 2003; Sonnur *et al.*, 2019). Where governments are seen to be fair, not corrupt and treat citizens with respect, taxpayers are likely to trust them and show more willingness to comply and honestly pay their fair share in taxes (Feld & Frey, 2007). Concurrently, power displayed by authorities has also been identified as a main contributor to compliance namely the sanctions used to enforce tax compliance.

According to the Slippery Slope Framework (SSF) (Kirchler, 2007; Kirchler & Wahl, 2010; Muehlbacher & Kirchler, 2010) the effectiveness of economic and non-economic factors depends on the relationship between taxpayers and tax authorities. In a trustful climate, trust-building measures may be more important than in a relationship that is based primarily on the power of authorities, where deterrence may be the right policy (Muehlbacher *et al.*, 2011). In the SSF, two different forms of tax compliance are assumed: (i) voluntary tax compliance and (ii) enforced tax compliance (Kirchler, 2007).

Based on these definitions, we test the relationship between tax evasion and enforced tax compliance, voluntary tax compliance, trust, legitimate power and coercive power in Portugal and Switzerland. Switzerland has been chosen by two main reasons, first, the central government takes a low share of total tax revenues when compared to other OECD countries, (e.g., in 2018, 27.9 percent, OECD average countries, 34.3 percent). Secondly, Switzerland had the lowest average size, 7.2 percent of GDP of shadow economy from a set of 158 countries over the period 1991 to 2015 (e.g., the average of the 158 countries was 31.9 percent of GDP while in Portugal was 21.9 percent of GDP (Medina & Schneider, 2018).

The primary research question is "What are the determinant dimensions in tax evasion?". In addition, we considered secondary research questions based on nine control variables (sociodemographic and religion) which are widely used by other authors (McKerchar, 2003; Torgler, 2007; Devos, 2014). The secondary research question is "Which control variable(s) lead to statistically significant differences in relation to the defined dimensions".

The results obtained point to country as the variable with more dimensions that have statistically significant differences in means (7 out of 8). We also estimated an econometric model for tax evasion and we found that voluntary tax compliance, trust and legitimate power are statistically significant and negatively correlated with tax evasion. In addition, we also found that there is a positive and statistically significant correlation between tax evasion and the dimensions enforced tax compliance and coercive power.

2 Literature Review

2.1 Tax compliance

Tax compliance is verified when taxpayers timely declare income earned and expenses incurred in a timely manner so that the income tax settlement amount is accurate, respecting the tax rules in force and the prevailing jurisprudence at each moment in time (Roth *et al.*, 1989). (Devos, 2014) completes this definition by introducing the definition of tax non-compliance (which does not include tax planning situations (legal tax invoice reduction within the terms of the law) or tax avoidance (when tax invoice reduction is performed through use of loopholes which can create ambiguity in the tax law). Tax non-compliance is operationalized in two major forms: income under-declaration (e.g. sales suppression) and over-declaration of expenses (e.g. false invoices or inclusion of ineligible personal expenses, in countries where such expenses allow deductions or rebates) (OECD, 2017). These two forms of tax non-compliance are detrimental to the public accounts of any country and contribute to widening the tax gap.

There are two major trends in the field of study of tax compliance or tax avoidance/tax evasion. One trend is based on economic theory assume that taxpayers are rational and aim to maximize their expected utility by guiding their strategic decisions with this goal in mind. If the probability of detection or audit is not too high and the fines or penalties are not too severe, taxpayers will tend to under-report income and / or over-declare expenses, thus entering intentionally in tax non-compliance. The other trend for the study of tax compliance and / or tax evasion and fraud is associated with models of social and tax psychology whose pioneering work was (Schmolders, 1959). Furthermore, other authors reinforced the relevance of behavioural aspects to the study of the theme in question (Pickhardt & Prinz, 2014).

With tax payments being a duty of all citizens, tax authorities have the primary function of ensuring that taxpayers pay taxes due to meet the state's financial needs and for a fair redistribution of income and wealth. Tax authorities will safeguard tax compliance in two ways: (i) taxpayers voluntarily pay their taxes because they understand that it is their moral duty or (ii) taxpayers pay their taxes because they are obliged through enforced power of the tax authorities (Braithwaite, 2003 and Kogler *et al.*, 2013). The first situation corresponds to voluntary tax compliance and the second to enforced tax compliance (Kogler *et al.*, 2013).

2.2 The tax game and the interaction between taxpayers and tax authorities

From (Pickhardt & Prinz, 2014) perspective, tax (non) compliance, as well as tax evasion, are processes in which individuals relate, directly or indirectly, to each other. The authors present the “tax game” identifying the various players: taxpayers, tax legislators (law makers), tax practitioners (accountants) and tax authorities. The authors point the Taxpayers vs Tax Authorities – one of the subgames as the most important game, the authors highlight three aspects: power, the level of service provided and trust. The power is linked to the of an audit and detection of evidence of tax evasion / fraud and the fines imposed for such behaviour. The level of service provided refers to taxpayer assistance with regard to tax information (doubts / aid in interpreting tax law and other services available). In turn, trust, together with the two aspects mentioned earlier, is crucial for assessing the degree of cooperation between taxpayers and the tax authorities.

The relationship between taxpayers and tax authorities - one of the tax games identified by (Pickhardt & Prinz, 2014) is a function of the perception of the other party's objectives and strategies (Kirchler, 2007 and Alm *et al.*, 2010), and three paradigms are proposed to study this relationship: 1) “cops and robbers” and 2) service providers and clients and 3) trust. The cops and robbers' paradigm postulates that tax authorities act as “cops” and view taxpayers as potential offenders' "robbers" and is somehow aligned with economic deterrence models. Tax non-compliance will thus be curbed by resorting to tax audits and by the imposition of fines and penalties (Alm *et al.*, 2010; Allingham & Sandmo, 1972; Srinivasan, 1973; Yitzhaki, 1974; Kirchler, 2007 and Diogo, 2018). Assuming that taxpayers are rational human beings and maximize their expected utility, if taxpayers feel indicted as potential defaulters, they can in fact take that stance and lower the amount of taxes payable through recourse to tax loopholes or risk if the benefits of tax default outweigh the associated costs (Kirchler, 2007).

The management style of tax authorities is often traditional and focused on command and control, with automatic fines and penalties on non-compliant taxpayers (Kirchler, 2007).

The service provider and customer attempts to design a relationship based on trust, empathy and other values (e.g. communication and reputation) with a view of achieving a high level of voluntary tax compliance. means that tax authorities treat taxpayers as clients, taking their needs into account in order to promote voluntary tax compliance. The actual success of the tax authorities or other state organizations will depend on their legitimacy (Easton, 1965; Karakus, 2017 and Robins & Kiser, 2017). Perception of legitimacy is important for fostering law enforcement and promoting cooperation between institutions and citizens and encouraging reporting of practices that go against the spirit of the law (Jackson *et al.*, 2012; Karakus, 2017; Murphy & Cherney, 2012; Murphy, Tyler & Curtis, 2009; Sunshine & Tyler, 2003; Tyler, 1997, 2006; Tyler, Schulhofe & Huq, 2010).

The paradigm of trust can be divided into two types: 1) reason-based trust which arises as a result of a deliberate rational decision of the trustor based on four factors: and 2) implicit trust (also called identification-based trust, habitual trust, social trust or affective trust). In general, evidence shows that trust in tax authorities is positively correlated with tax payments (Hammar *et al.*, 2009; Torgler, 2003). Trust in authorities exists if taxpayers perceive authorities' treatment as respectful, fair and transparent (Kirchler, 2007; Kirchler *et al.*, 2008). Additional findings of (Feld & Frey 2002, 2007) show that trust in authorities and perceived treatment by tax authorities positively influences the relationship between authorities and taxpayers, thus enhancing tax compliance levels. Furthermore, when authorities display accountability, transparency and low corruption levels, taxpayers perceive them as trustworthy.

Nothing precludes the coexistence of the 3 mentioned paradigms at the same time in a given tax jurisdiction, especially if we consider that there are multiple types of taxpayers.

2.3 Power

Power can be defined as the potential and perceived ability of one party to influence another's behaviour (Gangl, Hofmann & Kirchler, 2015). The power of the tax authorities is linked, on one hand, to tax law and the funding it obtains from the state budget for the exercise of its functions and, on the other hand, to the information it provides, for example through the data it provides about defaulting tax payers (Kirchler, Hoelzl & Wahl, 2008).

There are two fundamental theories about the exercise of power: enforced power as conceived in the work of (Becker, 1968), which points to the control of citizens and their punishment as tools for shaping their behaviour towards authorities' goals and legitimate power concept based on the works of (Turner, 2005) and (Tyler, 2006), in which authorities are "accepted" by citizens (through information provided, charisma, legitimacy and level of experience), arguing their advocates that is a more effective and appropriate way to influence and shape the behaviour of individuals (Gangl, Hofmann & Kirchler, 2015).

2.4 The SSF

The concept of SSF was firstly introduced by Henk Elffers at a conference in Leiden (The Netherlands), "Managing and Maintaining Tax Compliance", in 2006 (Kirchler, Hoelzl & Wahl, 2008). The concept of the SSF assumes that tax compliance can be achieved by two means: 1) economic deterrent measures, such as tax audits and fines / penalties, and 2) fostering a trust-based relationship with providing assistance to taxpayers. promote voluntary tax compliance (Prinz *et al.*, 2014). The first is associated with the "cops and robbers" paradigm. The second, the synergistic environment, is associated with the service provider and client paradigm, where there is a greater social cooperation between taxpayers and tax authorities, as well as a higher level of trust between both parties, predominating voluntary tax compliance, the tax authorities exercises greater legitimate and non-enforced power, leading taxpayers to recognize the competence and role of the tax authorities by cooperating voluntarily with it (Tyler, 2006).

The level and type of tax compliance will depend on tax authorities' power levels: enforced tax compliance with increasing tax authorities' power and voluntary tax cooperation with increasing authorities trust (Kirchler, Hoelzl & Wahl., 2008). Following the reasoning, (Kirchler, Hoelzl & Wahl., 2008) assume that the impact of changing the level of one variable will depend on the level of the other variable. It is also assumed that the variables power and trust regulate each other, that is, the impact of increasing the tax authorities' level of trust will be greater for lower levels of tax power. Similarly, the impact of increasing tax authorities' level of power will be greater for lower trust levels. The SSF is shown in Figure I below.

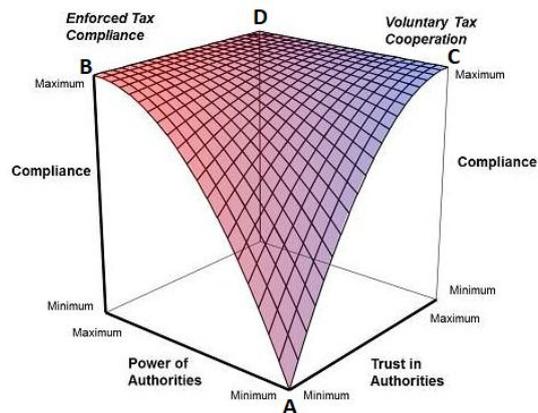


Figure 1 SSF graphical representation

(Source: Kirchler, Hoelzl & Wahl, 2008)

In conclusion, the power of and trust in tax authorities will determine the type of interaction environment between tax authorities and taxpayers (Gangl *et al.*, 2013; 2015).

3 Research question and hypotheses

In order to assess the perception of Portuguese and Swiss individual taxpayers in relation to the various aspects of their relationship with tax authorities and the respective impact on tax evasion (dependent variable). Based on the main objective of identifying the tax evasion factors, we formulated the following hypotheses:

- H1: There is a relationship between taxpayers' perception of enforced tax compliance and tax evasion;
- H2: There is a relationship between taxpayers' perception of voluntary tax compliance and tax evasion;
- H3: There is a relationship between taxpayers' perception of trust and tax evasion;
- H4: There is a relationship between taxpayers' perception of legitimate power of tax authorities and tax evasion;
- H5: There is a relationship between taxpayers' perception of coercive power of tax authorities and tax evasion;

In addition to the primary question, secondary research questions, are intended to provide a better understanding of the previously mentioned primary question (McKerchar., 2003 and

Devos., 2014). Thus, we considered nine control variables (sociodemographic and religion): sex, age, conjugality, religion, CFBR, tax education, type of employment relationship, degree of comfort with earned income and the usage of services of a tax agent to submit the tax return which are widely used by other authors (McKerchar., 2003; Torgler., 2007; Devos., 2014).

4 Methodology and Data

4.1 Data collection

The first step was to draft a questionnaire based on questions (indicators) previously elaborated and tested by other authors in other countries. The questionnaire survey is one of the data collection processes suggested by (Saunders, Lewis & Thornhill., 2009 and Sekaran & Bougie., 2010). The questionnaire form was derived from (Kastlunger *et al* 2013) study with Italian taxpayers. To ensure that all questions were properly understood by the respondents, as well as to ensure that there were no problems with the writing or the scale, the second step consisted of pre-testing the questionnaire applying it to a handful of volunteers (suggested by Sekaran & Bougie, 2010).

The questionnaire was applied to individuals tax residents in Portugal that had submitted at least one tax return in Portugal in the five previous fiscal years, the same principle was used for Switzerland. The questionnaire was made available online during 2019 using the google forms platform and was shared across multiple social media platforms.

Participation in the study was voluntary and the participants were assured that their answers would be kept confidential. The questionnaire was translated from English into Portuguese for the Portuguese sample and used in English for the Swiss sample. The participants were asked to indicate their degree of agreement with certain statements.

With the intention of achieving the proposed objectives, the questionnaire was designed taking into account the type of questions, the nature of the variables and the scales of attitudes (Hill & Hill, 2008). In view of the literature review carried out it is expected that the taxpayer's attitudes, perceptions, as well as the interaction with tax authorities, are influenced by a set of variables, the influence of which should be verified through a direct effect. Additionally, there could be an influence of sociodemographic and religion variables on the variables under study.

4.2 Target population and sample characterization

The target population for this research work is made up of single taxpayers' that had submitted a tax return in Portugal or Switzerland for personal income at least once during the previous five years. Regarding the sample, 179 responses were collected (97 in Switzerland and 82 in Portugal). The sample include individuals aged 18 years or over, with different professions and different levels of education. In terms of characterization of the sample, about 50.3% are male and 49.7% female.

Most of the respondents 141 (80.1%) affirm to have submitted a tax return by themselves while the remaining 35 (19.9%) submitted their tax return with the support of an accountant or a similar situation. Note that of the 3 respondents affirmed that they should have submitted a tax return but did not. Thus, they were excluded from the analysis.

As for age, respondents are between 18 and 64 years old, with an average age of 33 years. In terms of age groups, due to the sample size two age groups were formed one from 18 up to 32 years old and another from 33 to 64 years old. About 53.1% of respondents are aged up to 32 years; 46.9% are aged between 33 and 64 years old.

Regarding conjugality status, the largest group of respondents affirms to not live in conjugality (59.8%) while the remaining respondents (40.2%) affirms to live in conjugality.

Regarding the level of education, 90.5% of the respondents affirm to have a university degree while the remaining 9.5% not. In relation to tax education, 56.4% of the respondents affirm to have a had some type of tax training while the remaining 43.6% had no tax training.

In professional terms, more than 89.4% affirm to be employed while the remainder respondents affirm to be in a different situation. Regarding the current or past professional situation, most respondents work / worked for others (91.6%) with the remainder respondents worked for themselves (8.4%).

In the characterization of the sample, an important point concerns to the income of the household. However, given the reluctance of many respondents to answer questions of this nature, the question about household income has been replaced by another question about the degree of comfort provided by the income, according to the European Values Survey (EVS). In these terms, almost half of the respondents (49.7%) answered that the household income is enough for them to live. The others replied that it is possible for them to live comfortably (27.4%), that it is difficult or very difficult to live on the income they have (22.9%).

Regarding questions of a religious nature, 110 respondents (61.5%) have a current positive feeling of belonging to a religion. The remaining 69 respondents say they didn't feel of belonging to a religion. The respondents were further scrutinized about their religion, 30 as very religious (16.8%), 83 as somewhat religious (46.4%) and 66 as not belonging to any religion/atheists (36.8%).

5 Results and discussion

5.1 Descriptive analysis of the questionnaire and the creation of dimensions

This chapter aims to analyse and discuss results. It integrates a descriptive analysis of the administered questionnaires (composed of a set of indicators, organized by sections linked to the variables under study). The indicators, components of each dimension, will be those that maximize Cronbach's alpha. In order to highlight the robustness of the analysis - taking into account both the sample size and the thematic nature of the present research work - we will not consider dimensions whose Cronbach's alpha is less than 0.60 [value suggested by Marôco & Garcia -Marques (2006), Stephenson (2010) and Silva (2015)]. For, if this happened, the dimension's validity would be questioned (Marôco & Garcia-Marques, 2006). The constituent indicators for dimension mentioned in "5.2" is subject to a five-point Likert scale, where 1 = highly unlikely and 5 = very likely, while from "5.3 to 5.9" 1 = Strongly disagree and 5 = Strongly agree.

5.2 Tax Evasion

For the analysis of tax evasion, the indicators of the two administered questionnaires were measured, which are presented in the following table, with their descriptive statistics.

Table 5.1. "Tax Evasion"

	Indicator	N	Min	Max	Avg	SD
1	A customer paid in cash and did not require an invoice. You could intentionally omit this income on your income tax return. How likely is it that you would omit this income?	179	1	5	2.21	1.44
2	You bought some of your goods privately. You could resell those goods later to established customer and omit the profit from this sale on your income tax return. How likely would you be to omit the profit from this sale on your income tax return?	179	1	5	2.06	1.34
3	You could intentionally declare restaurant bills for meals you had with your friends as business meals. How likely would you be to declare those restaurant bills as business meals?	179	1	5	2.75	1.54
4	You have been abroad to meet relatives and to have a	179	1	5	3.07	1.45

	short meeting with one of your suppliers. Regardless of this you could declare your expenses for the hotel and for the meals you invited your relatives to, as business travel and a business meal. How likely would you be to declare your expenses as business travel or a business meal?					
5	Recently you took part in a project in an acquaintance's company. Now you could conceal this taxable additional income on your income tax return. How likely is it that you would conceal this additional income?	179	1	5	2.77	1.54
Tax Evasion		179	1	5	2.57	1.24

As we can see from the table 5.1, from the set of 5 indicators related to people who would not declare all their income, only indicator number four (4) presents an average higher than the centre of the scale, which appears to indicate that there is a low tendency for evading taxation in both countries. The “Tax Compliance” index was then created using the arithmetic mean of the indicators relating to the likelihood of tax avoidance (1 to 5), obtaining a Cronbach's Alpha of 0.905, considered excellent reliability (George & Mallery, 2003 and Stephenson, 2010). The results obtained show that “Tax Evasion” presents an average lower than the centre of the scale (3), revealing a favourable tax attitude of taxpayers towards their tax obligations. In comparative terms, we will evaluate “Tax Evasion” according to several variables: country, tax return submission, gender, tax education level, conjugality, the current feeling of belonging to a religion (CFBR), age and degree of comfort with the income earned by the household. The results obtained are shown in the tables below.

Table 5.2 “Tax Evasion” – T Test

Variables		Descriptive Statistics			T Test	Cronbach's Alpha
Designation	Groups	Average	Standard Deviation	Obs.	$\sigma_x \neq \sigma_y$	
Country	Switzerland	2.42	1.14	97	-1.78*	0.905
	Portugal	2.75	1.34	82		
Tax Return Submission	Self	2.39	1.16	141	-4.36***	
	W/support	3.40	1.24	35		
Sex	Female	2.58	1.17	89	0.08	
	Male	2.56	1.32	90		
Tax Education	No	2.75	1.14	78	1.76*	
	Yes	2.43	1.30	101		
Conjugality	No	2.46	1.18	107	-1.49	
	Yes	2.74	1.32	72		
CFBR	No	2.95	1.32	69	3.18***	
	Yes	2.34	1.14	110		
Age	18-32	2.51	1.31	95	-0.72	
	33-64	2.64	1.17	84		

* $p < 0,10$; ** $p < 0,05$; *** $p < 0,01$

Table 5.3 “Tax Evasion” – Scheffé Test by Religion

Groups	Descriptive Statistics			ANOVA Test		Scheffé Test	
	Average	Standard Deviation	Obs.	Teste F	Bartlett	Very	Somewhat
Very	2.64	1.25	30	3.65**	3.31	-	-
Somewhat	2.32	1.10	83			-0.32	-
Not +Atheist	2.86	1.36	66			0.22	0.54**

* $p < 0,10$; ** $p < 0,05$; *** $p < 0,01$

Table 5.4 “Tax Evasion” – Scheffé Test by Degree of comfort with the income

Groups	Descriptive Statistics			ANOVA Test		Scheffé Test	
	Average	Standard Deviation	Obs.	Teste F	Bartlett	Comfortable	Ok
Comfortable	2.27	1.13	49	7.89***	0.97	-	-
Ok	2.45	1.26	89			0.18	-
Dif or V.Dif	3.21	1.14	41			0.94***	0.76***

* $p < 0,10$; ** $p < 0,05$; *** $p < 0,01$

The results shown through tables 5.1-5.4, that “Tax Evasion” is higher in Portugal than in Switzerland. In relation to the other variables, “Tax Evasion” is higher among those who do not submit a tax return by themselves, the female gender, do not have tax training, those who live in conjugality, those who are not religious and those who have more than 32 years old. There is a statistically significant difference in the variable tax return submissions and religion. Note that in the Scheffé test by religion, the hypothesis of inequality of variances is rejected for a significance level of 0.01.

5.3 Enforced Tax Compliance

For the analysis of tax compliance, the indicators of the two administered questionnaires were measured, which are presented in the following table, with their descriptive statistics.

Table 5.5 “Enforced Tax Compliance”

	Indicator	N	Min	Max	Avg	SD
1	When I pay my taxes as required by the regulations, I do so because a great many tax audits are carried out.	179	1	5	3.48	1.27
2	When I pay my taxes as required by the regulations, I do so because the tax office often carries out audits.	179	1	5	3.45	1.29
3	When I pay my taxes as required by the regulations, I do so because I know that I will be audited.	179	1	5	2.88	1.30
4	When I pay my taxes as required by the regulations, I do so because the punishments for tax evasion are very severe.	179	1	5	3.89	1.17
5	When I pay my taxes as required by the	179	1	5	3.13	1.47

	regulations, I do so because I do not know exactly how to evade taxes without attracting attention.					
Enforced Tax Compliance		179	1	5	3.37	1.04

The data in table 5.5 allows us to conclude that, on average, the enforced tax compliance is higher than the centre of the scale. When we take a closer look at the individual indicators, we can see that indicator number four “When I pay my taxes as required by the regulations, I do so because the punishments for tax evasion are very severe.” presents the higher average in both countries, which indicates that the severity of the punishments from tax authorities in case of tax noncompliance seems to be the strongest factor for enforcing tax compliance.

As with the other subsections of the questionnaire previously analysed, a new dimension was created - “Enforced Tax Compliance”. The dimension in question was calculated based on the arithmetic mean of the five indicators present in table 5.5, whose Cronbach's alpha is 0.857, indicating an excellent reliability. The results are listed in the bottom row of table 5.6. From its analysis we can conclude that this dimension presents an average above the centre of the scale for Switzerland and at the centre for Portugal, revealing a high degree of enforced tax compliance in the Swiss case and average degree of tax compliance in the Portuguese case.

Table 5.6 “Enforced Tax Compliance” – T Test

Variables		Descriptive Statistics			T Test	Cronbach's Alpha
Designation	Groups	Average	Standard Deviation	Obs.	$\sigma_x \neq \sigma_y$	
Country	Switzerland	3.68	0.89	97	4.50***	0.857
	Portugal	3.00	1.09	82		
Tax Return Submissions	Self	3.27	1.07	141	-2.43**	
	W/support	3.69	0.88	35		
Sex	Female	3.29	1.01	89	-1.01	
	Male	3.44	1.07	90		
Tax Education	No	3.50	0.90	78	1.59	
	Yes	3.26	1.13	101		
Conjuality	No	3.20	1.03	107	-2.61**	
	Yes	3.61	1.01	72		
CFBR	No	3.12	1.14	69	-2.49**	
	Yes	3.52	0.94	110		
Age	18-32	3.24	1.00	95	-1.68*	
	33-64	3.50	1.07	84		

* $p < 0,10$; ** $p < 0,05$; *** $p < 0,01$

Table 5.7 “Enforced Tax Compliance” – Scheffé Test by Religion

Groups	Descriptive Statistics			ANOVA Test		Scheffé Test	
	Average	Standard Deviation	Obs.	Teste F	Bartlett	Very	Somewhat
Very	3.75	0.93	30	7.21***	7.39**	-	-
Somewhat	3.51	0.87	83			-0.24	-
Not +Atheist	3.01	1.18	66			-0.74***	0.50**

* $p < 0,10$; ** $p < 0,05$; *** $p < 0,01$

Table 5.8 “Enforced Tax Compliance” – Scheffé Test by Degree of comfort with the income

Groups	Descriptive Statistics			ANOVA Test		Scheffé Test	
	Average	Standard Deviation	Obs.	Teste F	Bartlett	Comfortable	Ok
Confortable	3.27	1.13	49	1.04	2.70	-	-
Ok	3.33	1.05	89			0.06	-
Dif or V.Dif	3.57	0.88	41			0.30	0.24

* $p < 0,10$; ** $p < 0,05$; *** $p < 0,01$

The results shown through tables 5.5-5.8, that “enforced tax compliance” is higher in Switzerland than in Portugal. In relation to the other variables, “Enforced Tax Compliance” is higher among those who do not submit a tax return by themselves, the male sex, do not have tax training, those who live in conjugality, those who are religious and those who have more than 32 years old. There is a statistically significant difference in the variable country. Note that in the Scheffé test by religion, the hypothesis of inequality of variances is rejected for a significance level of 0.01.

5.4 Voluntary Tax Compliance

For the analysis of Voluntary tax compliance, the indicators of the two administered questionnaires were measured, which are presented in the following table, with their descriptive statistics.

Table 5.9 “Voluntary Tax Compliance”

	Indicator	N	Min	Max	Avg	SD
1	When I pay my taxes as required by the regulations, I do so because, to me, it's obvious that this is what you do.	179	1	5	3.80	1.23
2	When I pay my taxes as required by the regulations, I do so to support the state and other citizens.	179	1	5	3.81	1.24
3	When I pay my taxes as required by the regulations, I do so because I like to contribute to everyone's good.	179	1	5	3.64	1.27
4	When I pay my taxes as required by the regulations, I do so because, for me, it's the natural thing to do.	179	1	5	4.15	1.13
5	When I pay my taxes as required by the regulations, I do so because I regard it as my duty as a citizen.	179	1	5	4.25	1.06
Voluntary Tax Compliance			1	5	3.93	1.01

The data in table 5.9 allows us to conclude that, on average, the respondents tend to cooperate with tax authorities with averages above the centre of the scale.

As with the other subsections of the questionnaire previously analysed, a new dimension was created - "Voluntary Tax Compliance". The dimension in question was calculated based on the arithmetic mean of the five indicators present in table 5.9, whose Cronbach's alpha is 0.91, indicating an excellent reliability. The results are listed in the bottom row of table 5.9. From its analysis we can conclude that this dimension presents an average above the centre of the scale for both countries, explicitly revealing the high cooperation by taxpayers with the tax authorities.

Table 5.10 "Voluntary Tax Compliance" – T Test

Variables		Descriptive Statistics			T Test	Cronbach's Alpha
Designation	Groups	Average	Standard Deviation	Obs.	$\sigma_x \neq \sigma_y$	
Country	Switzerland	4.19	0.94	97	3.94***	0.905
	Portugal	3.61	1.01	82		
Tax Return Submissions	Self	3.92	1.02	141	0.17	
	W/support	3.89	1.02	35		
Sex	Female	3.93	1.11	89	-0.01	
	Male	3.93	0.92	90		
Tax Education	No	4.13	0.93	78	2.35**	
	Yes	3.78	1.05	101		
Conjuality	No	3.88	1.08	107	-0.83	
	Yes	4.00	0.91	72		
CFBR	No	3.77	1.07	69	-1.68*	
	Yes	4.03	0.97	110		
Age	18-32	3.99	1.02	95	0.92	
	33-64	3.85	1.00	84		

* $p < 0,10$; ** $p < 0,05$; *** $p < 0,01$

Table 5.11 "Voluntary Tax Compliance" – Scheffé Test by Religion

Groups	Descriptive Statistics			ANOVA Test		Scheffé Test	
	Average	Standard Deviation	Obs.	Teste F	Bartlett	Very	Somewhat
Very	3.94	1.01	30	0.35	0.02	-	-
Somewhat	3.99	1.01	83			0.05	-
Not +Atheist	3.85	1.03	66			-0.09	-0.14

* $p < 0,10$; ** $p < 0,05$; *** $p < 0,01$

Table 5.12 "Voluntary Tax Compliance" – Scheffé Test by Degree of comfort with the income

Groups	Descriptive Statistics			ANOVA Test		Scheffé Test	
	Average	Standard Deviation	Obs.	Teste F	Bartlett	Comfortable	Ok
Confortable	4.09	0.94	49	14.97***	18.43***	-	-
Ok	4.16	0.74	89			0.07	-
Dif or V.Dif	3.22	1.28	41			-0.87***	-0.94***

* $p < 0,10$; ** $p < 0,05$; *** $p < 0,01$

The results shown through tables 5.9-5.12, that "voluntary tax compliance" is higher in Switzerland than in Portugal. Swiss taxpayers have an especially high voluntary tax

cooperation (4.19) while Portuguese Taxpayers have a slightly lower value (3.61). In relation to the other variables, “voluntary Tax Compliance” is higher among those who do submit a tax return by themselves, do not have tax training, those who live in conjugality, those who are religious and those who have less than 33 years old. There is a statistically significant difference in the variable country.

5.5 Trust

For the analysis of trust, the indicators of the two administered questionnaires were measured, which are presented in the following table, with their descriptive statistics.

Table 5.13 “Trust”

Indicator		N	Min	Max	Avg	SD
1	The tax authorities have supported the taxpayers	179	1	5	3.42	1.27
2	The tax authorities are treating citizens correctly	179	1	5	3.41	1.35
3	The tax authorities are a trustworthy institution	179	1	5	3.58	1.12
4	The tax authorities are a reliable institution	179	1	5	3.70	1.08
5	The tax authorities are treating citizens in a respectful manner	179	1	5	3.57	1.22
Trust		179	1	5	3.54	1.10

The results obtained in the table above related to the trust in tax authorities show that the respondents, on average, have trust in TA. The fourth dimension “Trust” was created, based on the eleven indicators analysed in table above. With the aggregation of these indicators, through their arithmetic mean, a Cronbach's alpha of 0.946 was obtained, considered as excellent (Marôco & Garcia-Marques, 2006 and Stephenson, 2010). The results linked to the descriptive statistics are presented in the last line of table 5.13 The “Trust” dimension is evaluated, in comparative terms, through the various variables, the results of which are presented below.

Table 5.14 “Trust” – T Test

Variables		Descriptive Statistics			T Test	Cronbach's Alpha
Designation	Groups	Average	Standard Deviation	Obs.	$\sigma_x \neq \sigma_y$	
Country	Switzerland	4.20	0.63	97	11.22***	0.946
	Portugal	2.75	1.01	82		
Tax Return Submissions	Self	3.45	1.11	141	-1.81*	
	W/support	3.79	0.99	35		
Sex	Female	3.47	1.03	89	-0.77	
	Male	3.60	1.16	90		
Tax Education	No	3.75	0.94	78	2.42**	
	Yes	3.37	1.19	101		
Conjugality	No	3.34	1.06	107	-3.01***	
	Yes	3.83	1.09	72		
CFBR	No	3.23	1.26	69	-2.85***	
	Yes	3.73	0.94	110		

Age	18-32	3.38	1.14	95	-2.09**
	33-64	3.72	1.03	84	

* $p < 0,10$; ** $p < 0,05$; *** $p < 0,01$

Table 5.15 “Trust” – Scheffé Test by Religion

Groups	Descriptive Statistics			ANOVA Test		Scheffé Test	
	Average	Standard Deviation	Obs.	Teste F	Bartlett	Very	Somewhat
Very	3.41	1.10	30	3.97**	8.16**	-	-
Somewhat	3.78	0.90	83			0.37	-
Not +Atheist	3.29	1.26	66			-0.11	-0.49**

* $p < 0,10$; ** $p < 0,05$; *** $p < 0,01$

Table 5.16 “Trust” – Scheffé Test by Degree of comfort with the income

Groups	Descriptive Statistics			ANOVA Test		Scheffé Test	
	Average	Standard Deviation	Obs.	Teste F	Bartlett	Comfortable	Ok
Confortable	3.69	1.21	49	2.39*	4.80*	-	-
Ok	3.60	0.95	89			-0.09	-
Dif or V.Dif	3.22	1.21	41			-0.47	-0.42

* $p < 0,10$; ** $p < 0,05$; *** $p < 0,01$

The results shown through tables 5.13-5.16, that “trust” is higher in Switzerland than in Portugal. In relation to the other variables, “trust” is higher among those who do submit a tax return with support, the male sex, do not have tax training, those who live in conjugality, those who are religious and those who have more than 32 years old. There are statistically significant differences in the variable’s country, conjugality and religion. Note that in the Scheffé test by religion and Degree of comfort with the income, the hypothesis of inequality of variances is rejected for a significance level of 0.01.

5.6 Legitimate Power

For the analysis of legitimate power, the indicators of the two administered questionnaires were measured, which are presented in the following table, with their descriptive statistics.

Table 5.17 “Legitimate Power”

	Indicator	N	Min	Max	Avg	SD
1	Tax Evasion is detected in a high percentage of the cases	179	1	5	2.70	1.05
2	Tax authorities combat tax crimes in an efficient way	179	1	5	2.92	1.08
3	Tax evasion is likely to be detected	179	1	5	3.19	0.90
4	Tax authorities control frequently and profoundly	179	1	5	3.23	1.05
5	Due to their knowledge and competence, tax authorities are able to detect every act of tax evasion	179	1	5	2.38	1.17
Legitimate Power		179	1	5	2.88	0.76

The data in table 5.17 allows us to conclude that, on average, the respondents perceive that the tax authorities legitimate power is moderately low. However, indicator number 4 presents an average value of 3.23 which appears to indicate that taxpayers admit that tax authorities control frequently and profoundly.

As with the other subsections of the questionnaire previously analysed, a new dimension was created “Legitimate Power. The dimension in question was calculated based on the arithmetic mean of the five indicators present in table 5.17, whose Cronbach's alpha is 0.769, indicating an acceptable reliability. The results are listed in the bottom row of table 5.18. From its analysis we can conclude that this dimension presents an average above the centre of the scale for Switzerland, while for Portugal it indicates an average below the centre of the scale, explicitly revealing the low perception by Portuguese taxpayers on tax authorities’ “Legitimate Power”.

Table 5.18 “Legitimate Power” – T Test

Variables		Descriptive Statistics			T Test	Cronbach's Alpha
Designation	Groups	Average	Standard Deviation	Obs.	$\sigma_x \neq \sigma_y$	
Country	Switzerland	3.05	0.75	97	3.19***	0.769
	Portugal	2.69	0.73	82		
Tax Return Submissions	Self	2.85	0.78	141	-0.98	
	W/support	2.98	0.68	35		
Sex	Female	2.69	0.76	89	-3.51***	
	Male	3.08	0.71	90		
Tax Education	No	2.94	0.68	78	0.95	
	Yes	2.84	0.81	101		
Conjuality	No	2.72	0.73	107	-3.55***	
	Yes	3.12	0.74	72		
CFBR	No	2.86	0.82	69	-0.39	
	Yes	2.90	0.72	110		
Age	18-32	2.88	0.71	95	-0.07	
	33-64	2.89	0.81	84		

* $p < 0,10$; ** $p < 0,05$; *** $p < 0,01$

Table 5.19 “Legitimate Power” – Scheffé Test by Religion

Groups	Descriptive Statistics			ANOVA Test		Scheffé Test	
	Average	Standard Deviation	Obs.	Teste F	Bartlett	Very	Somewhat
Very	2.93	0.72	30	0.16	0.22	-	-
Somewhat	2.90	0.77	83			-0.03	-
Not +Atheist	2.85	0.77	66			-0.08	-0.05

* $p < 0,10$; ** $p < 0,05$; *** $p < 0,01$

Table 5.20 “Legitimate Power” – Scheffé Test by Degree of comfort with the income

Groups	Descriptive Statistics			ANOVA Test		Scheffé Test	
	Average	Standard Deviation	Obs.	Teste F	Bartlett	Comfortable	Ok

Confortable	3.14	0.77	49			-	-
Ok	2.85	0.73	89	5.32***	0.21	-0.29*	-
Dif or V.Dif	2.64	0.74	41			-0.50***	-0.21

* $p < 0,10$; ** $p < 0,05$; *** $p < 0,01$

The results shown through tables 5.17-5.20, that “Legitimate Power” is higher in Switzerland than in Portugal. In relation to the other variables, “Legitimate Power” is higher among those who do submit a tax return with support, the male sex, do not have tax training, those who live in conjugality, those who are religious and those who have more than 32 years old. There are statistically significant differences in the variable’s country, sex and conjugality.

5.7 Coercive Power

For the analysis of Coercive power, the indicators of the two administered questionnaires were measured, which are presented in the following table, with their descriptive statistics.

Table 5.21 “Coercive Power”

Indicator		N	Min	Max	Avg	SD
1	Tax authorities primarily aim to punish	179	1	5	2.42	1.33
2	Tax authorities investigate as long as they find something	179	1	5	3.36	1.17
3	Tax authorities' interventions are too severe	179	1	5	3.41	1.06
4	Tax authorities nurture hostile feelings towards taxpayers	179	1	5	2.53	1.36
5	Tax authorities interpret tax laws in order to punish the highest number of taxpayers	179	1	5	2.64	1.34
Coercive Power		179	1	5	2.87	0.88

The data in table 5.21 allows us to conclude that, on average, the perceive that the tax authorities has a low coercive power. However, indicators 2 and 3 present average values of 3.36 and 3.41, respectively, these medium values above the centre of the scale allow us to conclude that taxpayers admit that tax authorities investigate as long as they find something and that tax authorities’ interventions are severe.

As with the other subsections of the questionnaire previously analysed, a new dimension was created - “Coercive Power. The dimension in question was calculated based on the arithmetic mean of the five indicators present in table 5.21, whose Cronbach's alpha is 0.741, indicating an acceptable reliability. The results are listed in the bottom row of table 5.21. From its analysis we can conclude that this dimension presents an average below the centre of the scale for both countries, explicitly revealing the low perception by taxpayers on tax authorities’ use of “Coercive Power”.

Table 5.22 “Coercive Power” – T Test

Variables		Descriptive Statistics			T Test	Cronbach's Alpha
Designation	Groups	Average	Standard Deviation	Obs.	$\sigma_x \neq \sigma_y$	

Country	Switzerland	2.91	0.92	97	0.58	0.741
	Portugal	2.83	0.84	82		
Tax Return Submissions	Self	2.85	0.90	141	-1.58	
	W/support	3.07	0.71	35		
Sex	Female	2.88	1.00	89	0.16	
	Male	2.86	0.75	90		
Tax Education	No	2.88	0.95	78	0.09	
	Yes	2.87	0.83	101		
Conjuality	No	2.72	0.86	107	-2.83***	
	Yes	3.09	0.88	72		
CFBR	No	2.95	0.91	69	0.92	
	Yes	2.82	0.86	110		
Age	18-32	2.74	0.85	95	-2.06**	
	33-64	3.01	0.90	84		

* $p < 0,10$; ** $p < 0,05$; *** $p < 0,01$

Table 5.23 “Coercive Power” – Scheffé Test by Religion

Groups	Descriptive Statistics			ANOVA Test		Scheffé Test	
	Average	Standard Deviation	Obs.	Teste F	Bartlett	Very	Somewhat
Very	2.93	0.72	30	0.20	2.77	-	-
Somewhat	2.83	0.89	83			-0.10	-
Not +Atheist	2.90	0.95	66			-0.03	0.07

* $p < 0,10$; ** $p < 0,05$; *** $p < 0,01$

Table 5.24 “Coercive Power” – Scheffé Test by Degree of comfort with the income

Groups	Descriptive Statistics			ANOVA Test		Scheffé Test	
	Average	Standard Deviation	Obs.	Teste F	Bartlett	Comfortable	Ok
Confortable	2.85	0.79	49	4.31**	2.33	-	-
Ok	2.73	0.84	89			-0.12	-
Dif or V.Dif	3.20	0.99	41			0.35	0.47**

* $p < 0,10$; ** $p < 0,05$; *** $p < 0,01$

The results shown through tables 5.21-5.24, that “Coercive Power” is higher in Switzerland than in Portugal. In relation to the other variables, “Coercive Power” is higher among those who do submit a tax return with support, the female sex, do not have tax training, those who live in conjuality, those who are not religious and those who have more than 32 years old. There is a statistically significant difference in the variable conjuality.

5.8 Key takeaways from of the results obtained

With the previous analysis of the dimensions, below we summarize the variables with higher impact on the average of each dimension.

Table 5.25 “Dimensions vs Variables” – Mean Differences

	Country	Tax return submission	Sex	Tax Education	Conjuality	CFBR	Age	Religion	Degree of comfort with the income	Total
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Tax Evasion	X	X		X		X		X	X	6
Enforced Tax Compliance	X	X			X	X	X	X		6
Voluntary Tax compliance	X			X		X			X	4
Trust	X	X		X	X	X	X	X	X	8
Legitimate Power	X		X		X				X	4
Coercive Power					X		X		X	3
Total	5	3	1	3	4	4	3	3	5	31

The results obtained point to country and degree of “degree of comfort with the income” as the variable with more dimensions that have statistically significant differences in means (5 out of 6). It would be a good topic for further research to find what leads to these differences. Additionally, the degree of comfort with the income was found as key socio demographic variable, as it is common for the income to be a decisive factor in regards to topics related to tax compliance.

The dimensions with most differences of statistically significant means, the dimensions “Tax Evasion”, “Trust” and “Enforced Tax Compliance” are the ones with most differences in means across the various groups, with respectively, 6, 8 and 6 sociodemographic variables.

5.9 Econometric model analysis

Table 5.26 presents the output of the regression model with “Tax Evasion” as the dependent variable. Regarding voluntary tax compliance, trust and legitimate power, we found that these variables are statistically significant and negatively correlated with tax evasion, thus corroborating H2, H3 and H4. On the other hand, there is a positive and statistically significant correlation between tax evasion and the variables enforced tax compliance and coercive power, which allows corroborating H1 and H5 of the study. The p-value for each variable in the model is identified and that tests individual significance ($p > |z|$). All variables are statistically significant, since the p-value is lower than the α of 10%. From the table we can also assess the beta values, we observe that enforced tax compliance and coercive power exert a positive impact on tax evasion while voluntary tax compliance, trust and legitimate power exert a negative impact on tax evasion. and the remaining identified dimensions will be the respective independent variables. The global model is statistically

robust (F-value = 17.292, p-value = 0.000). All independent variables have VIF values less than 2.

Table 5. 26 “Output” Coefficients

Model		Unstandardized Coefficients		Standardized	t	Sig.
		B	Std. Error	Coefficients		
1	(Constant)	2,897	,502		5,776	,000
	Enftaxcomp	,351	,082	,293	4,281	,000
	Voltaxcomp	-,261	,097	-,213	-2,686	,008
	Trust	-,272	,105	-,217	-2,596	,010
	Legpow	-,221	,114	-,134	-1,932	,055
	Coerpow	,367	,099	,260	3,689	,000

6 Conclusions, limitations and topics for future research

6.1 Conclusions

Results suggest that people with different tax residency approach tax compliance and tax evasion in very specific ways. The non-compliant tax behaviours (i.e., tax avoidance) in the analysis are stronger among Portuguese tax payers than with Swiss taxpayers. This could account for some results, such as the fact that Portuguese (compared to the Swiss) expressed lower levels of voluntary compliance. In this regard, we might guess that, because of their higher levels of enforced compliance, Portuguese taxpayers might be more inclined to avoid taxes, following Kirchler and Wahl’s (2010) assumption that “when trust is low, but authorities’ power to effectively audit and sanction wrong behaviour is strong”.

Swiss, in particular, express very high levels of voluntary tax compliance and seem more inclined to consider tax compliance a civic duty, pointing out the collective consequences of tax evasion. This pathway of the slippery slope framework is the one deriving from trust, that influenced tax compliance significantly.

The present findings suggest that the evaluation by taxpayers of the way public resources are managed might be another antecedent of their trust in tax authorities, and consequently of their voluntary cooperation. These findings suggest that the authorities should act in correspondence to the beliefs and attitudes of the taxpayers to increase their cooperation in

a responsive regulation approach (Braithwaite, 2003). More specifically, tax authorities may use different methods and strategies to enhance tax compliance.

Among Swiss taxpayers, who show higher levels of voluntary cooperation, authorities should be careful when auditing and fining taxpayers to avoid creating an antagonistic climate, because these individuals are more sensitive to the power dimension, a strong display of which might decrease their cooperation. For the Swiss a “service and client” approach is more effective to increase the level of tax compliance, whereas excessive deterrence might backfire. Among Portuguese taxpayers, on the other hand, it could be relevant to find ways to increase their voluntary cooperation by increasing their trust and paying attention to the perception of the way public expenditures are managed.

These practical implications might be useful, both for tax and political authorities, when trying to promote taxpayer compliance. However, the fact that the same policies may meet differential responses among different groups of taxpayers enhances one of the basic assumptions of the slippery slope framework: that maintaining or achieving a high level of tax compliance in a social system is like operating on a slippery slope, because of the complex interaction of trust and power (Kirchler, 2007; Kirchler *et al.*, 2008).

As the analysis is based on self-reports its limitations must be mentioned, results have to be interpreted in this light, and socially desirable responses cannot be ruled out. As tax non-compliance is an illegal and prosecuted behavior, self-reports may rather comply with tax law than reflect actual tax behavior. Nevertheless, an enforced tax compliance and voluntary tax compliance have to be assessed with questionnaires, as there is no measurable difference in actual behavior between these factors, the current approach seems the most promising.

In the slippery slope framework (Kirchler, 2007; Kirchler *et al.*, 2008), an interaction of perceived power and trust is assumed. In the current study, this interaction was not tested due to the small sample size. It might be that in the current sample several interactions are effective. As mentioned above, the interaction of power and trust can have several different characteristics and various impacts on tax payments.

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