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Tax professionals' profiles concerning tax noncompliance and tax complexity: Empirical contributions from Portugal

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Abstract

This paper analyses the profiles of tax professionals with the greatest propensity for tax noncompliant behaviour. Data were collected in 2013 using a questionnaire applied to Portuguese tax professionals. From the profiles we argue that the propensity for noncompliance is greater among professionals responsible for medium-sized enterprises in contexts of high tax complexity. In particular, in terms of voluntary tax noncompliance, we noted greater vulnerability to the pressures exerted by employers/clients for participation in aggressive tax planning schemes among young women, as well as professionals working in in-house departments of accounting and taxation.

Key words: tax noncompliance, tax complexity, tax professionals, Portugal

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1. INTRODUCTION

Nowadays, taxpayers increasingly resort to the use of tax professionals in order to solve problems of complexity and uncertainty surrounding tax laws. As a result, tax professionals[4] have progressively come to substitute for taxpayer's own efforts in order to comply (Hite & Hasseldine, 2003; McKerchar, 2005; OECD, 2008; Saad, 2014).

In the Portuguese case, due to the peculiarities of the tax system, business activities and incomes are mostly required by law to have tax returns prepared by certified accountants.[5] These professionals are the only ones authorized by the Portuguese tax authorities to deal with business tax issues. Moreover, due to the complexity of the Portuguese tax system, many individual taxpayers also pay for professional advice (Lopes, 2008; Pinho et al., 2011; Borrego, 2015).

Consequently, in Portugal, tax professionals (certified accountants), rather than taxpayers, are the ones who deal with tax complexity. Therefore, it is useful for tax policy to investigate the profile of tax professionals and their relationship to tax compliance and perceived tax complexity.

This paper therefore aims to analyse the profile of those Portuguese tax professionals with the highest propensity for intentional (aggressive) or unintentional (non-aggressive) tax noncompliant behaviour. Thus, in 2013, a questionnaire was sent out seeking tax professionals' self-evaluation of their perception of tax compliance and tax complexity. This paper presents the results of 994 responses to this survey from tax professionals in active service.

We believe the conclusions of this survey contribute to current scholarship by presenting new empirical evidence from a country about which there is a lack of previously published studies of this scale. Moreover, this work is innovative, as it identifies the demographic, technical and professional profiles of tax professionals with the greatest tendency to noncompliance, using a multiple correspondence analysis, a methodology traditionally used in other social sciences.

The paper is divided into five parts, not including the introduction: literature review, research hypotheses, research methodology, data analysis and discussion of results. In the final section, we draw some conclusions and suggest further avenues of research.

2. LITERATURE REVIEW

In order to clearly delineate the scope of this study it is important to explore definitions of tax noncompliance contained in previously published tax literature.

According to Devos (2005, p. 223) '… there is no standard all-embracing definition of tax (non)compliance adopted across all tax compliance studies'. Slemrod (2007), who agrees with Devos (2005), sees the major reason for this lack of consensus as the use of

[4] Tax professionals include: tax preparers, tax practitioners, tax agents, tax accountants, tax consultants, tax advisers and tax intermediaries hired by taxpayers to comply with their tax obligations. However, in this paper, notwithstanding the general concept of tax professionals, we use the term tax professionals to refer to certified accountants.

[5] Contabilistas Certificados (CC) or Técnicos Oficiais de Contas (TOC).

a variety of concepts with different meanings, such as 'evasion', 'noncompliance', 'misreporting' and 'tax gap' (Slemrod, 2007).

This study uses the definition of the OECD (2010), which states that tax noncompliance includes all the intentional or unintentional schemes for reducing or avoiding tax payments. Intentional tax noncompliance includes, for example, the underreporting of incomes, the misrepresentation of expenses, and the deliberate misclassification of incomes. Unintentional noncompliance situations involve some errors, mistakes and omissions, as well as the committing of other unintended faux pas by taxpayers, or those who represent them, without any intention of reducing or evading taxes.

These definitions of tax noncompliance help us to understand that the study of tax noncompliance is much more complex and broader than the mere study of tax evasion (and tax fraud), tax avoidance, tax planning, tax shelters,[6] tax flight,[7] and the shadow or cash economy. Tax noncompliance includes all tax compliance failures, whether they are intentional or unintentional.

The study of tax noncompliance in the taxpayer context began in the 1970s, when the first studies based on the traditional theory of tax evasion were undertaken (Allingham & Sandmo, 1972). However, a desire to understand the impact of paid tax professionals' activity on tax compliance only commenced in the 1980s in the United States, later extending to other countries. Although four decades have now elapsed, the role of tax practitioners in tax (non)compliance remains a pertinent issue. This is mainly due to the lack of published studies relative to the impacts of their activity on taxpayers' tax compliance.

In terms of international tax literature, there are some studies which enable us to understand the key role of tax practitioners (tax professionals) in tax systems. The tax issues relating to tax professionals most widely considered in previous studies are the determinants of their profile and attitudes to tax compliance tasks as well as the way they deal with tax complexity (Ayres et al., 1989; Reckers et al., 1991; Green, 1994; Cuccia, 1994, Samelson & Schloemer, 2001; O'Donnell et al., 2005; McKerchar, 2005; Bloomquist et al., 2007; OECD, 2008).

In relation to tax professionals' tax compliance behaviour, as can be seen in Table 1, some studies identify the determinants as having positive and negative effects on their attitudes (Ayres et al., 1989; Reckers et al., 1991; Schisler, 1994, 1995; Sakurai & Braithwaite, 2003; O'Donnell et al., 2005; Ventry & Borden, 2014; Dzienkowski & Peroni, 2016).

The determinants in Table 1 suggest the importance applied to penalties for tax compliance. These indicate that it is possible to apply the traditional theory of tax evasion, as set out by Allingham and Sandmo (1972) and based on the theory of crime from Gary Becker (1968), to the context of tax professionals.

[6] Standardised schemes of very aggressive tax planning involving large amounts. They are designed and sold to their clients by investment bank lawyers and tax advisers.
[7] Relocation of companies aimed at achieving tax savings.

Table 1: Main determinants with impact on tax professionals' tax compliance

Type of impact	Determinants
Positive	• The fear of the possible penalties that they (or their clients/employers) may incur • The perception of tax justice and equity • Specialised tax knowledge • Professional ethic
Negative	• The fear of losing the client or being dismissed • Self-propensity to take risks • The tax aggressiveness of their clients/employers • Perception of tax system complexity • Specialised tax knowledge • In unintentional tax noncompliance behaviour: Clients'/employers' size (smaller) • In intentional tax noncompliance behaviour: Clients'/employers' size (larger)

Source: Ayres et al., 1989; Reckers et al., 1991; Schisler, 1994; 1995; Sakurai and Braithwaite, 2003; O'Donnell et al., 2005; Bloomquist et al., 2007; Ventry & Borden, 2014; Dzienkowski and Peroni, 2016.

In relation to the size of tax professionals' clients (or employers), Ayres et al. (1989) and Bloomquist et al. (2007) establish a relationship between the size of firms in which tax professionals carry out their functions and their propensity to commit mistakes in tax returns, which constitutes unintentional tax noncompliance. They conclude that tax professionals who work for larger firms commit fewer errors (unintentional tax noncompliance) resulting from tax complexity.

Moreover, some studies actually indicate that larger taxpayer entities experience fewer tax complexity problems, and have more ability to derive benefits from tax complexity through aggressive tax planning schemes (intentional tax noncompliance) (OECD, 2001; EC, 2004, 2007; McKerchar et al., 2005; Lopes, 2012).

Regarding the influence of age and gender on tax professionals' attitudes towards tax compliance, there are no studies (as far as we know) which discuss the effects of these two independent variables on tax noncompliance, in the tax preparer´s context. This justifies the absence of these variables in Table 1. However, such studies do exist in relation to taxpayers. According to these studies, older taxpayers and women are less prone to tax noncompliance (Klepper et al., 1991; Long & Caudill, 1993; McKerchar, 2002; Schuetze, 2002; Erard & Ho, 2003; Kastlunger et al., 2010; Torgler & Valev; 2006, 2010; Hofmann et al., 2017).

The role of tax complexity in the creation of opportunities to use ambiguities and loopholes in tax laws for their clients' (employers') benefit (*i.e.* tax aggressiveness) is necessarily related to the individual tax professional's tax knowledge (O'Donnell et al., 2005; Stephenson, 2007). As can be seen in Table 1, the contribution that this specialised tax knowledge makes to tax compliance can be either positive or negative (O'Donnell et al., 2005; Stephenson, 2007; Bonner et al., 1992; Samelson & Schloemer, 2001).

In this context it is important to ask: do tax professionals employ their tax knowledge in order to resolve ambiguity and doubts in tax legislation interpretation created by tax complexity, thus contributing positively to tax compliance, or is the opposite the case?

There are some studies which explore this tripartite relationship: tax knowledge, perception of tax complexity and tax (non)compliance. This research commonly divides the types of relationship into three categories: positive; negative and a combination of both (Reckers et al., 1991; Klepper et al., 1991; Newberry et al., 1993; Erard, 1993; Christian et al., 1994; Cuccia, 1994; Mills et al., 1998; O'Donnell et al., 2005; Stephenson, 2007). These are outlined below:

1. Positive — the studies conclude that a higher level of tax professionals' tax knowledge provides them with greater competence to deal with tax complexity and thus ensure greater compliance. Moreover, a higher level of tax knowledge offers professionals a greater perception of the chance of being discovered and an understanding of the rigorousness of punishment for taxpayers and for themselves.

2. Negative — the studies verify that the greater that tax professionals' tax knowledge is, the more able they are to identify the more complex issues and uncertainties of tax laws. As a result, they can employ this knowledge to favour their customers' or employers' interests (which may increase their clients'/employers' tax noncompliance).

3. A combination of both — with regard to less complex and ambiguous tax matters, tax professionals often use their privileged level of tax knowledge to deal with tax complexity, in order to comply more scrupulously with tax legislation. In contrast, in terms of more complex and ambiguous matters, they also make use of their level of tax knowledge to deal with tax complexity for the benefit of their clients or employers, in order to be less compliant.

This research brings into sharp focus tax professionals' highest level of tax knowledge, in an environment of tax complexity, as a variable which tends to reduce the unintentional tax noncompliance level and increase the conditions for intentional tax noncompliant behaviour, or more aggressive advice (tax aggressiveness). In this context, GAO (2006), Bloomquist et al. (2007) and Laffer et al. (2011) also clearly state that tax complexity provides opportunities for both intentional or unintentional tax noncompliance, from a tax preparer's perspective.

Drawing on the literature review, in the following sections we set out our research hypotheses and methodology. Then we present and discuss the results of our empirical study with regard to Portuguese tax professionals' profiles concerning tax noncompliance and perceptions of tax complexity. We then compare these results with results found in international tax literature.

3. RESEARCH QUESTIONS AND HYPOTHESES

3.1 Research questions

The intention of this paper is to achieve two main goals. Firstly, we will try to design a socio-demographic, professional and technical overview of the Portuguese tax

professionals with the greatest propensity to tax noncompliance. Secondly, we will attempt to ascertain the perception of tax professionals as regards tax complexity and its consequences in terms of tax compliance.

We propose to answer the following research questions:

Question 1: How great is the propensity of tax professionals to engage in tax noncompliant behaviour?

Question 2: What is the demographic, technical and professional profile of Portuguese tax professionals with the greatest propensity to tax noncompliant behaviour?

To address these research questions, we define five research hypotheses as well as two explicative models, as follows.

3.2 Research hypotheses

Regarding the demographic characteristics of age and gender, in prior published research relating to paid tax professionals, there is no evidence to suggest that the propensity to engage in tax noncompliance (unintentional or intentional) is different depending on those characteristics. Nevertheless, in terms of taxpayers' age and gender, there are some studies which conclude that younger taxpayers and as well as men in general are less likely to comply with tax laws (Klepper et al., 1991; Long & Caudill, 1993; McKerchar, 2002; Schuetze, 2002; Erard & Ho, 2003; Kastlunger et al., 2010; Torgler &Valev, 2006, 2010; Hofmann et al., 2017). This study seeks to ascertain whether these differences between taxpayers are also observable among tax professionals. Our neutral research hypotheses are as follows:

H1: Tax professionals' propensity to engage in tax noncompliance (intentional or unintentional) is not related to their age.

H2: Tax professionals' propensity to engage in tax noncompliance (intentional or unintentional) is not related to their gender.

With regard to tax knowledge, there is some empirical evidence to support the existence of a relationship between paid tax professionals' tax knowledge and their capacity to deal with tax complexity, in order to comply or not (Ayres et al., 1989; O'Donnell et al., 2005; Stephenson, 2007). We believe that different levels of tax knowledge are reflected in their attitudes towards tax compliance. Therefore, we present the following neutral research hypothesis:

H3: Tax professionals' propensity for tax noncompliance (intentional or unintentional) is not related to their level of tax knowledge.

To draw a profile of Portuguese paid tax professionals, it is also important to understand whether there is a relationship between the size of their customers'/employers' companies and the way they deal with tax noncompliance opportunities, as well as their probability to commit errors or omissions. The literature suggests that there is a lower propensity to engage in involuntary tax noncompliance in the largest firms, but more ability to derive benefits from tax complexity and ambiguity through tax aggressiveness in those companies (Ayres et al., 1989; OECD, 2001; EC, 2004, 2007; McKerchar et al., 2005; Bloomquist et al., 2007; Lopes, 2012). Our neutral research hypothesis is as follows:

H4: There is no relationship between the size of companies [8] in which tax professionals carry out their functions and their tax noncompliant behaviour (intentional or unintentional).

Concerning the impact of tax complexity on tax noncompliant behaviour (intentional or unintentional), the conclusions of studies present in the literature suggest that they are related. GAO (2006), Bloomquist et al. (2007) and Laffer et al. (2011) conclude that tax complexity increases opportunities for both voluntary and involuntary tax noncompliance. Thus, our next neutral research hypothesis is:

H5: Tax professionals' perception of tax system complexity in general[9] is not related to their tax noncompliant behaviour (intentional or unintentional).

4. RESEARCH METHODOLOGY

In order to collect the data, following the suggestion of Raupp and Beuren (2006), we used a survey addressed to Portuguese paid tax professionals (certified accountants). Our target population was Portuguese certified accountants in active service in February 2013, a total of 38,614 members.

To introduce our questionnaire in paper format, we addressed the 2,391 members present in the regulatory entity's tax seminars of February 2013,[10] thus benefiting from a convenience sample.[11] Furthermore, we placed the same questionnaire online on the forum of the Portuguese Organization of Certified Accountants (OTOC[12] — now named OCC[13]) and in other blogs/forum/websites frequented by Portuguese tax professionals. It is important to emphasise that in this questionnaire, professionals were invited to undertake a self-evaluation of their perceptions and performance in the areas of tax complexity and tax compliance.

The questionnaire (Appendix A), aimed to fulfill the following objectives:

1. To construct a socio-demographic, professional and technical characterisation of the respondents (Questions 1, 2, 3, 4, 5, 6, 7, 8, 9, 10 and 20);

2. To characterise their self-evaluation of their perception regarding tax system complexity (Questions 11, 12, 13, 14, 15, 16, 19 and 22);

3. To evaluate their perceived need for tax updating [14] and how important professionals believe this to be for their activities (Questions 17, 18, 20 and 21);

[8] In order to understand the size of the clients//employers of the tax professionals, we used two indicators: the turnover of the largest customer that they have or have had (Question 10), and the way that certified accountants organise their activity. In Portugal it is the professionals who work in in-house accountancy and taxation departments who are usually responsible for larger companies (Question 8).
[9] By using two ranges: lower complexity and higher complexity.
[10] Tax seminars of voluntary frequency whose objective is to create a forum for permanent tax updating.
[11] The regulatory entity (OCC) was not able to participate in order to obtain a representative (random) sample for this study.
[12] Ordem dos Técnicos Oficiais de Contas — denomination of the regulatory body of the profession in 2013.
[13] Ordem dos Contabilistas Certificados — current denomination of the regulatory body of the profession.
[14] Permanent fiscal update, through frequency of seminars, autonomous study and other means, which are necessary due to the constant fiscal changes.

4. To assess their self-evaluation concerning the impact of tax complexity on their unintentional tax noncompliance (Questions 23, 24, 25 and 26); and

5. To assess their self-evaluation regarding the impact of tax complexity on their propensity to engage in intentional tax noncompliance schemes (Questions 27 and 28).

We collected 1,258 paper questionnaires and 334 online questionnaires, amounting to a total of 1,567 valid questionnaires. Our response rate was about 52% in relation to the professionals present at the tax seminars, and 4.1% in terms of our target population. This is in line with other international studies with 1% (see McKerchar, 2005).[15]

Taking in to consideration our convenience sample (bias and lack of representativeness), we had to deal with the bias of data concerning two important variables: age of the professionals and years of experience in the profession (see Tables I and II, Appendix B). Thus, we used a table of random numbers to generate a smaller but stratified random sample of 994 questionnaires ('new sample'), with similar distribution among the target population (provided by the regulatory entity of the profession, in February 2013).[16]

5. RESULTS AND DISCUSSION

5.1 Tax professionals' profile and perception of tax system complexity

Portuguese tax professionals present some interesting features. Around 44% are more than 50 years old and only 16% are 35 years old or below. With regard to gender, there is a good balance, with men representing 54.8% of professionals currently active.

However, when we categorise age by gender, we observe that in the lower age group there are a greater number of women, while in the older age group there is a preponderance of men; for example, among younger tax professionals (35 years old and below), women outnumber men by more than two to one, whereas among the older professionals (> 65 years old) there are very few women.

Data suggest that although this profession has been predominantly a male domain in the past in the future there will be a preponderance of women, should the observed tendency continue. This is an appealing line for future research. We validated this change by using a crosstab and Pearson Chi-Square, with the result: $\chi 2\ (3) = 204.3$; $p = 0.000 < 0.05$; we verify that the observed difference is statistically significant and quite relevant (contingency coefficient = 0.42).

In relation to the technical and professional characteristics of our sample, we can verify that 75.1% of Portuguese paid tax professionals hold a university degree. This is as a result of the rules of access to the profession. Moreover, 73.7% of professionals have

[15] This questionnaire was applied online, only by including a link in the Australian Taxation Office's Newsletter.

[16] In fact, we used five 'auxiliary variables': gender (2 categories), age (3 categories), geographical dispersion (5 categories), professional experience (2 categories) and academic degree (3 categories). This leads to a rather large number of groups, in order to use the re-weighting method.

more than 10 years' professional experience, which is similar to the 66.5% verified in the United Kingdom (UK) by Green (1994).[17]

As regards the size of customers' (or employers') companies, we can observe that more than half of the tax professional respondents (71.7%) are responsible for small–medium sized enterprises (SMEs) with a turnover of up to €2 million. This is compatible with the data published by the Portuguese National Statistical Institute[18] relative to business size in Portugal, and corroborates data presented in Lopes (2009) from the Portuguese tax professionals' customer portfolio. We can also confirm that tax professional respondents generally work in accountancy and taxation offices (69.9%), a lower percentage than the 88% observed by Green (1994) in the UK, denoting less use of outsourcing services in the case of Portugal. Thus, Portuguese tax professionals work predominantly in firms of accountancy and taxation, mostly responsible for SMEs. The tendency to work in in-house departments of accounting and taxation is slightly higher in men than in women, at 52% and 48%, respectively.

In terms of the time spent in tax updating, the mean is 21.17 hours (21 hrs 10 min.) per month. This is in line with McKerchar's (2005) study in Australia, with 21.6 hours per month (21 hrs 36 min.) spent in tax updating.[19] In contrast, Green (1994) presents this statistic in relative terms — according to her study, UK chartered accountants spend 78% of their professional time in tax updating.

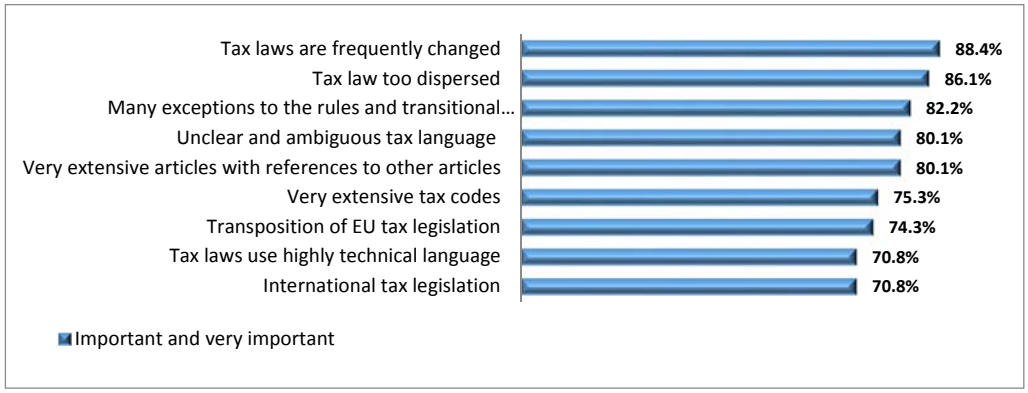
In order to better understand Portuguese certified accountants' level of tax knowledge, we constructed an additive index referred to as the *Tax Knowledge Index*, with a scale ranging from 3 to 12, and using the following variables: 'academic graduation plus curriculum with courses in taxation'; 'time spent on tax updating'; and 'years of tax experience'. As a result of this index, we can verify that there is a high level of tax knowledge among Portuguese paid tax professionals. The majority fall between Levels 8 and 10 on the index (43.2%), while on Level 9 we find the highest number: 246 (24.7%). The median is 9 (Q1 = 8 and Q3 = 10) and the tax professionals at the levels above the mean value (8.85) are 61.1%, which is lower than the 77% verified in McKerchar (2005).

A large majority (89.1%) of respondents classified their perception of tax system complexity in relation to the tax system as a whole as either complex or very complex (a high level of tax complexity perceived), while only 10.9% ranked the Portuguese tax system as straightforward (with a low level of complexity). These results are in line with data from the World Bank (2013a; 2013b), which rates Portugal as one of the top countries in terms of tax bureaucracy in Europe, only surpassed by Italy and some Eastern European countries.

Figures 1 and 2 represent the determinants of tax complexity from the Portuguese tax professionals' perspective: Figure 1 relates to legislative (or legal) tax complexity, while Figure 2 relates to complexity of tax compliance.

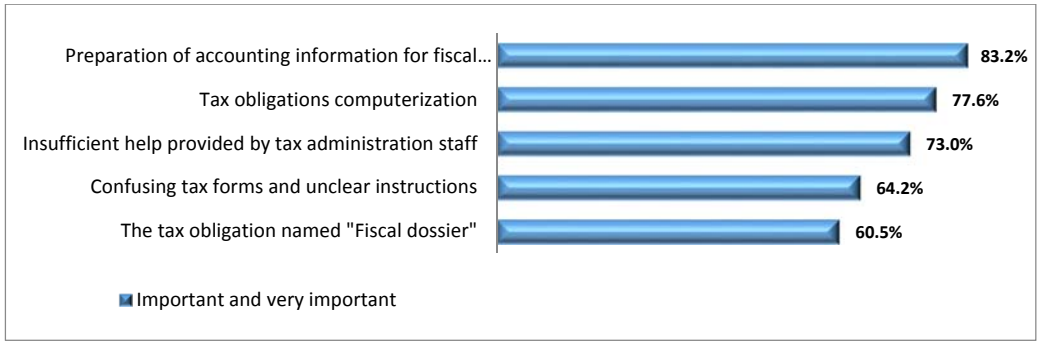
[17] This should be treated cautiously as there is a gap of 20 years between the studies.
[18] Instituto Nacional de Estatística (INE) — the Portuguese National Institute of Statistics.
[19] See note 14 above.

Figure 1: Determinants of legislative tax complexity — professionals' perspectives



With reference to legislative tax complexity (see Figure 1 above), tax professionals allocate a high level of relevance to all determinants, with special emphasis on tax law changes and tax law dispersion, with an 88% and 86% allocation, respectively.

Figure 2: Determinants of complexity of tax compliance — professionals' perspectives



As can be seen from Figure 2, Portuguese certified accountants accord a high level of importance to all determinants, in particular to the preparation of accounting information for fiscal purposes and to tax obligation of adoption of information technology (IT) (computerisation), with 83% and 78%, respectively. This is in line with the previous studies of Long and Swingen (1987), Green (1994) and McKerchar (2005).

According to the self-evaluation undertaken by Portuguese tax professionals, perception of tax complexity might introduce some distortions into tax compliant behaviour, which could potentially impact on their intentional or unintentional tax noncompliance. Approximately half of the certified accountant respondents (45.9%) admitted to a relationship between tax complexity and their unintentional tax noncompliant behaviour (mainly errors, mistakes, misinterpretations and omissions).[20]

Regarding the participation of tax professionals in intentional tax noncompliance schemes (intentional under-reporting of income, intentional misrepresentation of expenses, deliberate misclassification of income and other premeditated means of entirely avoiding or reducing the payment of taxes), and because it is a very sensitive issue, the question was framed from a hypothetical perspective. The survey sought to

[20] Only 4.9% of respondents did not want to answer Question 25 (see Appendix A).

ascertain whether they would agree to participate in aggressive tax planning schemes that take advantage of tax complexity, ambiguities and loopholes in tax laws, if offered the chance. Only 65.6% of the tax professionals surveyed claimed that they would peremptorily refuse to participate in such schemes.[21] The remainder of respondents to this question fell into the categories 'accept' and 'consider whether to accept or not'.[22]

We also considered whether it was important to understand the determinants of the professionals' position with regard to aggressive fiscal planning schemes (intentional tax noncompliant behaviour).

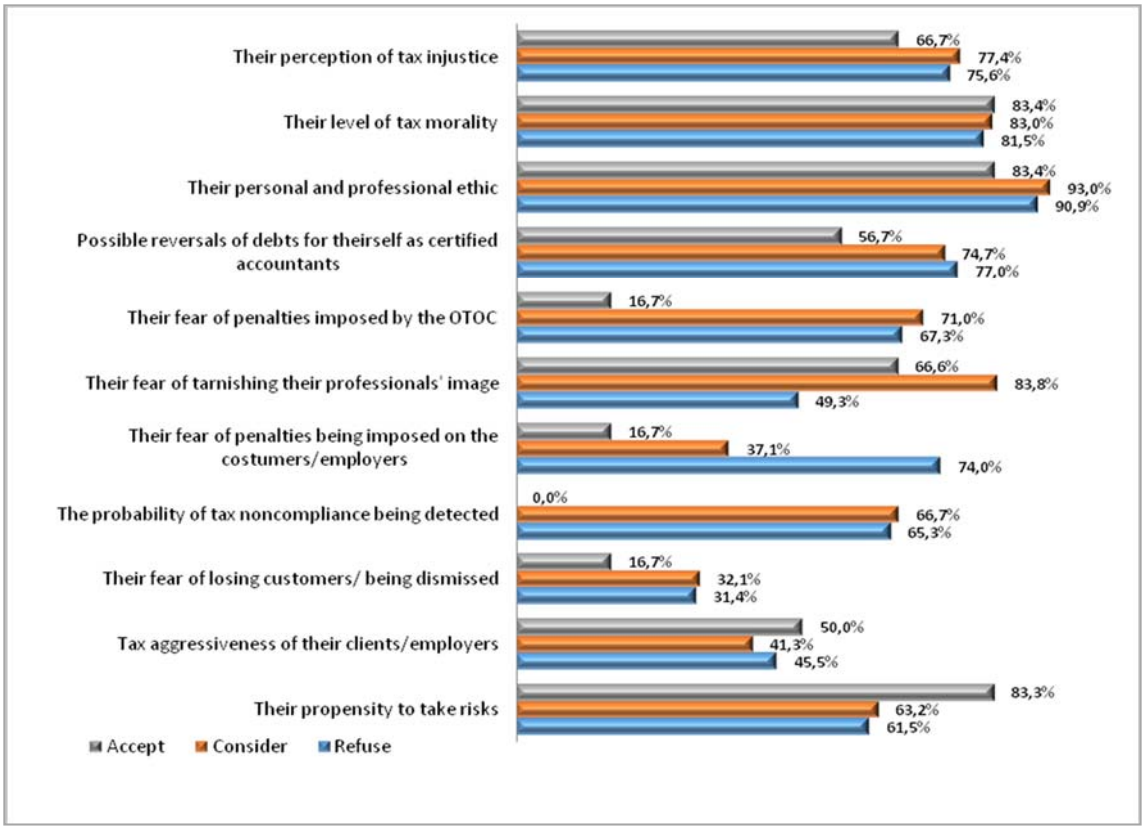
Figure 3 (below) presents the determinants considered by Portuguese certified accountants (self-evaluation) as 'important' or 'very important' for deciding their attitudes towards aggressive tax planning proposals.[23]

According to the self-evaluation undertaken by tax professionals (Figure 3), there are three main determinants in decisions regarding tax aggressiveness made by tax professionals: (i) their sense of personal and professional ethics; (ii) their level of tax morality; and (iii) their need to preserve their professional reputation. It is important to note that these data do not correspond with the international tax literature, which instead highlights a fear of penalties as well as the importance of customers and the apprehension of losing them (or being dismissed). In contrast, these were variables to which the Portuguese paid tax professionals appear to attach relatively little importance. Fear of punishment is thus not a sufficient deterrent in terms of tax compliance in Portugal.

Thus, for tax policymakers and tax authorities alike, as well as for the organisation responsible for regulating this profession (OCC), it is necessary to address alternative means of reducing intentional or unintentional tax noncompliance among Portuguese certified accountants. It should be noted, however, that in Portugal the tax punishments for noncompliance do not fall directly on tax professionals, which could explain the lack of concern regarding such penalties.

[21] Only 7.9% of respondents did not want to answer Question 27 (see Appendix A).
[22] These options are: 'refuse', 'accept' and 'consider', respectively.
[23] Combination of data from answers to Questions 27 and 28 (see Appendix A).

Figure 3: The determinants of tax aggressive behaviour of Portuguese tax professionals, categorised by attitudes towards aggressive tax planning proposals



In the next section, we analyse whether tax professionals' demographic, technical and professional data and their perception of tax complexity are related to their tax noncompliant behaviour, thereby testing our research hypotheses.

5.2 Testing the research hypotheses

In order to test our research hypotheses, we examine the relationship between the independent and dependent variables: unintentional tax noncompliant behaviour and intentional tax noncompliant behaviour (tax aggressiveness). Table 2 presents the statistical hypotheses.

Due to the characteristics of our data (lack of data normality, as well as to the use of nominal and ordinal variables frequently based on five-point type-Likert scales), and in order to analyse the relations between dependent and independent variables, we use the following nonparametric tests: $\chi 2$; the Mann-Whitney test; and the Kruskal Wallis test. Furthermore, to measure the strength and direction of the relation between variables we use the Spearman Correlation.

Table 2: Statistical hypotheses

H		Statistical hypotheses
H1	**H1.1**	**H_0:** There are no differences in tax professionals' propensity for unintentional tax noncompliance, depending on the age of the professional; **H_a:** There are differences in tax professionals' propensity for unintentional tax noncompliance, depending on the age of the professional.
	H1.2	**H_0:** There are no differences in tax professionals' propensity for tax aggressiveness, depending on the age of the professional; **H_a:** There are differences in tax professionals' propensity for tax aggressiveness, depending on the age of the professional.
H2	**H2.1**	**H_0:** There are no differences in tax professionals' propensity for unintentional tax noncompliance, depending on the gender of the professional; **H_a:** There are differences in tax professionals' propensity for unintentional tax noncompliance, depending on the gender of the professional.
	H2.2	**H_0:** There are no differences in tax professionals' propensity for tax aggressiveness, depending on the gender of the professional; **H_a:** There are differences in tax professionals' propensity for tax aggressiveness, depending on the gender of the professional.
H3	**H3.1**	**H_0:** There are no differences in tax professionals' propensity for unintentional tax noncompliance, depending on their level of tax knowledge; **H_a:** There are differences in tax professionals' propensity for unintentional tax noncompliance, depending on their level of tax knowledge.
	H3.2	**H_0:** There are no differences in tax professionals' propensity for tax aggressiveness, depending on their level of tax knowledge; **H_a:** There are differences in tax professionals' propensity for tax aggressiveness, depending on their level of tax knowledge.
H4	**H4.1**	**H_0:** There are no differences in tax professionals' propensity for unintentional tax noncompliant behaviour, depending on the turnover[24] of the largest companies in which professionals carry out their functions; **H_a:** There are differences in tax professionals' propensity for unintentional tax noncompliant behaviour, depending on the turnover of the largest companies in which professionals carry out their functions.
	H4.2	**H_0:** There are no differences in tax professionals' propensity for unintentional tax noncompliant behaviour, depending on the way they organise their activity;[25] **H_a:** There are differences in tax professionals' propensity for unintentional tax noncompliant behaviour, depending on the way they organise their activity.
	H4.3	**H_0:** There are no differences in tax professionals' propensity for tax aggressiveness, depending on the turnover of the largest companies in which professionals carry out their functions;

[24] We use the turnover of the largest company for which the professional is/was responsible as an indicator of the size of the companies with which the professional usually deals.
[25] Measure of size of clients/employers.

H		Statistical hypotheses
		H_a: There are differences in tax professionals' propensity for tax aggressiveness, depending on the turnover of the largest companies in which professionals carry out their functions.
	H4.4	**H_0:** There are no differences in tax professionals' propensity for tax aggressiveness, depending on the way they organise their activity; **H_a:** There are differences in tax professionals' propensity for tax aggressiveness, depending on the way they organise their activity.
H5	**H5.1**	**H_0:** There are no differences in tax professionals' unintentional tax noncompliant behaviour, depending on their perception of tax system complexity;[26] **H_a:** There are differences in tax professionals' unintentional tax noncompliant behaviour, depending on their perception of tax system complexity.
	H5.2	**H_0:** There are no differences in tax professionals' propensity for tax aggressiveness, depending on their perception of tax system complexity; **H_a:** There are differences in tax professionals' propensity for tax aggressiveness, depending on their perception of tax system complexity.

Table 3 presents the relationship between Portuguese tax professionals' characteristics and their unintentional tax noncompliant behaviour (Question 25 — Appendix A). In this analysis we exclude the non-answers to Question 25, since although they represent replies from 4.9% of respondents, the results of the other two options are very well defined, not being dependent on the submissions of this 4.9% of respondents.

[26] By using a dichotomous variable: lower complexity versus higher complexity. Lower complexity includes the ranks: 'very simple' (0.01%), 'simple' (1.29%) and 'neither simple nor complex' (9.6%) and higher complexity includes the ranks 'complex' (49%) and 'very complex' (40.1%).

Table 3: Effects of socio-demographic, professional and technical variables on Portuguese tax professionals' unintentional tax noncompliant behaviour (in a complex tax context)[27]

H	Variables	χ2 (df)	Kruskal-Wallis (df)	Mann-Whitney (df)	*p-value*	Correlation
H1.1	Professionals' age	13.91** (3)	13.89 (920)	—	0.003**	—
H2.1	Professionals' gender	8.03** (1)	—	96173.5 (925)	0.005**	rho=-0.093 p=0.002**
H3.1	Professionals' tax knowledge	3.61 (5)	—	—	0.607	—
H4.1	The size of professionals' customers or employers (turnover)	7.25 (4)	—	—	0.123	—
H4.2	The way professionals organise their activity	1.17 (1)	—	—	0.279	—
H5.1	Professionals' perception of tax system complexity	9.910** (1)	—	76087.5 (895)	0.006**	rho = 0.103; p = 0.002 **

* $p < 0.1$; ** $p < 0.05$; *** $p < 0.001$

As the null hypothesis of H1.1, H2.1 and H5.1 are rejected, the results of the analysis indicate there is a statistically significant relationship between Portuguese tax professionals' unintentional tax noncompliant behaviour (caused by tax complexity) and the following independent variables: (i) tax professionals' perception of tax system complexity; (ii) tax professionals' age; and (iii) tax professionals' gender.

The tax professionals with the highest propensity for unintentional tax noncompliant behaviour are those whose ages range from 35 to 50, while those below that age range demonstrate the lowest propensity.

The tax professionals with the highest propensity for unintentional tax noncompliance are men.

The tax professionals with the highest perception of tax system complexity are those who are assumed to commit more errors, mistakes and omissions (unintentional tax noncompliant behaviour). [28]

In particular, the statistically significant relationship between unintentional tax noncompliance and tax complexity should lead tax policymakers to consider the need to simplify the Portuguese tax system, especially its legal aspects. According to Borrego

[27] Question 25 (see Appendix A).
[28] At this point we must bear in mind that the measurement of this variable is performed by self-evaluation on the part of professionals.

(2015) and Borrego et al. (2015), Portuguese tax professionals perceive a higher level of complexity in tax laws than in compliance tasks.

It thus appears that professionals' tax knowledge and the size of companies in which they carry out their functions have no statistically significant relationship with their unintentional tax noncompliant behaviour (H3.1, H4.1 e H4.2).

Table 4 presents the relationship between tax professionals' characteristics and their intentional tax noncompliant behaviour ('tax aggressive behaviour').

According to the data shown (Table 4), there is a statistically significant relationship between Portuguese tax professionals' propensity for tax aggressive behaviour and their age, the way they organise their activity and the size of professional's customers or employers (H1.2, H4.3 and H4.4).

In an environment of perceived high tax complexity, the relationship between tax aggressive behaviour and specialists' ages is negative: that is, the younger are more likely to engage in intentional tax noncompliant behaviour. In general, this can be explained by the greater propensity of younger people to take risks and the fact that older professionals may possess a higher sense of tax morality (Erard & Ho, 2003; Torgler &Valev, 2006; Alm & Torgler, 2006; Sá, 2014).

These conclusions are in line with the possibility that younger tax professionals are more likely to engage in tax aggressive schemes. We point out that the reason for that, in the specific context of these tax professionals, is the fact that they are more economically dependent on their clients or employers than older professionals with larger customer portfolios. In our opinion, this deserves the attention of both the regulatory authority and academia in terms of future research and tax policy.

The statistically significant influence of the way that tax professionals organise their activity on their tax aggressive behaviour leads us to conclude that those with the highest propensity for tax aggressive behaviour are the ones who work in in-house accountancy and taxation departments.

Table 4: Effects of socio-demographic, professional and technical variables on Portuguese tax professionals' tax aggressive behaviour (in complex tax context)[29]

H	Variables	$\chi 2$ (df)	Kruskal-Wallis (df)	Mann-Whitney (df)	*p-value*	Correlation
H1.2	Professionals' age	23.58*** (3)	23.56 (889)	—	0.000***	*rho* = -0.143; *p* = 0.000 ***
H2.2	Professionals' gender	0.15 (1)	—	—	0.703	—
H3.2	Professionals' tax knowledge	3.63 (5)	—	—	0.603	—
H4.3	The size of professionals' customers or employers (turnover)	8.59* (4)	—	—	0.072*	—
H4.4	The way professionals organise their activity	7.50** (1)	—	76087.5 (895)	0.006**	rho = 0.092; p = 0.006**
H5.2	Professionals' perception of tax system complexity	0.50 (1)	—	—	0.479	—

* $p < 0.1$; ** $p < 0.05$; *** $p < 0.001$

Although we cannot dissociate these results concerning tax aggressiveness from the firms' size (this relation is significant at the level of 10% ($p<0.1$)), we believe they may also primarily be influenced by the greater economic dependence of tax professionals who work in in-house departments on their employers. This is in comparison with those who have their own accountancy and taxation offices with a large portfolio of clients.

Data suggest that Portuguese tax professionals' gender, their tax knowledge and their perception of tax system complexity (Table 4) have no statistically significant relationship with their aggressive tax behaviour (H2.2, H3.2 and H5.2).

Tables 5 and 6 (below) present the findings of our statistical tests with regard to the profiles of the above, and compare them with the results reported in the international tax literature regarding tax professionals (Table 5) and taxpayers (Table 6). Therefore, for each variable Tables 5 and 6 show a first line containing the international literature results, as well as a second line with the new findings, that is, the results of this research.

[29] Question 27 (see Appendix A).

Table 5: Results of statistical tests and their comparison with the Tax Literature Review (I)

Independent variables	Confrontation with literature	Greater propensity for	
		Unintentional tax noncompliance	Tax aggressiveness (intentional tax noncompliance)
Tax knowledge	Literature review	Lower tax knowledge	Higher tax knowledge
	Our findings	No relation	No relation
Clients'/employers' size[30]	Literature review	Work with/in the smallest companies	Work with/in the biggest companies
	Our findings	No relation	Work with/in the biggest companies
Perception of tax complexity	Literature review	More complexity perceived	More complexity perceived
	Our findings	More complexity perceived	No relation perceived

Analysis of data in Table 5 reveals that our conclusions do not corroborate the importance attributed in international literature to the level of tax knowledge in the context of tax professionals' intentional or unintentional tax noncompliant behaviour. However, this difference might be due to differences in how 'tax knowledge' is measured. In addition, in Portugal a degree in accounting (with a considerable emphasis on taxation), followed by continuous updating — two of the three indicators that comprise the professionals' tax knowledge index — are mandatory for those entering this profession. This can slant the results from this indicator towards excessively high values.

In relation to the impact of tax complexity, the results corroborate the literature in the context of unintentional noncompliant behaviour, and contradict it in terms of the scope of tax aggressiveness, because we cannot establish a statistically significant relationship.

As regards the influence of their clients'/employers' size on their tax compliant behaviour, the results corroborate the literature in the tax aggressive behaviour context, and contradict it with regard to the scope of unintentional tax noncompliant behaviour.

In summary, we corroborate:

1. The higher propensity of professionals who work in larger companies for intentional tax noncompliant behaviour;

2. A positive relationship between tax professionals' perception of tax complexity and their propensity for unintentional tax noncompliance.

[30] By using the tax professionals' way of organising their activity (those who work in in-house accountancy and taxation departments usually have responsibility for larger companies) as an indicator.

We do not corroborate:

1. The important role attributed to the level of tax knowledge in the tax professionals' tax compliance context;

2. The higher propensity for professionals who work in small companies to engage in unintentional tax noncompliant behaviour;

3. The relationship between tax professionals' perception of tax complexity and their propensity for intentional tax noncompliance.

Table 6 summarises the results of statistical tests relating to Portuguese tax professionals' age and gender, and compares them with the findings from the literature related to taxpayers (because there are no results in the literature in the tax professionals' context).

Table 6: Results of statistical tests and their comparison with the Tax Literature Review (II)

Independent variables	Taxpayers versus professionals	Greater propensity for	
		Unintentional tax noncompliance	Tax aggressiveness (intentional tax noncompliance)
Age	Taxpayers	—	Younger
	Portuguese tax professionals	Older	Younger
Gender	Taxpayers	—	Men
	Portuguese tax professionals	Men	Without a statistically significant difference

These emphasise the previously mentioned fact that the propensity for tax aggressive behaviour is higher among younger people, be they taxpayers or professionals. Moreover, we were unable to conclude that the professionals' gender had no impact on their behaviour relating to fiscal aggressiveness, contrary to the taxpayer tax literature review.

Regarding the impact of the taxpayers' and professionals' gender and age on their involuntary tax noncompliance, the literature does not present any conclusions. However, the data does suggest a greater propensity among older and male professionals.

After performing this analysis, and being aware that we cannot ignore the fact that the interrelationship between variables could influence the results, we will now proceed to a multivariate analysis in order to complement the profile. The following section therefore offers an analysis of multiple correspondences in order to unite our two dependent variables with the majority of our independent variables in the same profile.

5.3 Analysis of multiple correspondences

Analysis of multiple correspondences is used in terms of nominal categorical data and allows us to detect and represent underlying structures in a data set. This is very useful for drawing behavioural profiles.

We undertook two analyses of multiple correspondences, in order to obtain two profiles: the profile of tax professionals with the greatest tendency for unintentional tax noncompliant behaviour, and the profile of tax professionals with the highest propensity for intentional tax noncompliant behaviour (tax aggressive behaviour).

In relation to the propensity for unintentional tax noncompliance, our analysis allows us to identify two profiles which are more tax noncompliant. Table 7 presents these findings.[31]

From the analysis of data in Table 7, we highlight the relation between higher perception of tax system complexity and the greater propensity for unintentional tax noncompliance. This relation justifies the attention of the tax policymakers to this problem.

The profiles of the most tax noncompliant also deserve the attention of the regulatory authority for this profession and the tax authority, because when we fuse age with gender, those are the groups with more professionals: 54.4% of female professionals are in the age group from 35 to 50 and 48.7% of male professionals are in the 50 to 65 age group.

Table 7: Profiles of tax professionals with the greatest propensity to unintentional tax noncompliance

Profile 1	Profile 2
• Gender: male; • Age: > 50 to 65; • Tax Knowledge Index level: high; • Clients'/employers' turnover: > €2 million; • Perception of tax system complexity: high.	• Gender: female; • Age: > 35 to 50; • Tax Knowledge Index level: medium; • Clients'/employers' turnover: inconclusive; • Perception of tax system complexity: high.

Although the levels of tax knowledge of both profiles are medium and high, the data suggest that these levels of tax knowledge may not be sufficient to deal with the problems created by tax complexity in involuntary tax noncompliant behaviours in the context of tax professionals.

In relation to the professionals' propensity for intentional tax noncompliance, the analysis of multiple correspondences allows us to generate two profiles which are more tax noncompliant (more tax aggressive). Table 8 shows the results of the analysis.[32]

From the analysis of data in Table 8, we emphasise the relationship between a higher perception of tax system complexity and the propensity for more aggressive behaviour

[31] Although the values of reliability analysis obtained through Cronbach's Alpha are low (0.555 and 0.233, for dimension 1 and 2, respectively), it is important to note that there are some factors that may influence these values. First of all, as we are working in the social sciences area, some variables are difficult to measure, for example, the variable 'perception of tax system complexity' (high/low) on a five-point Likert scale. Secondly, we use an index, the *Tax Knowledge Index*, in substitution for three manifest variables, which may also contribute to the decrease in Cronbach's Alpha values.

[32] The values of Cronbach's Alpha are low (0.550 and 0.276, for dimension 1 and 2, respectively). In addition, the notes on the values of Cronbach's Alpha in Footnote 31 are equally valid for this note.

and advice in the taxation field (intentional tax noncompliance). The relationship between tax complexity and tax aggressiveness justifies the attention of the tax policymakers.

Thus, according to the results from the analysis of multiple correspondences, tax professionals who simultaneously meet the requirements of one of the two profiles presented in Table 8 are more prone to intentional tax noncompliant tax behaviour.

It is important to note that the profiles are very similar between men and women, with the exception of the age with the greatest propensity for fiscal aggressiveness. These profiles also represent a very large group among tax professionals.

The propensity for noncompliance (unintentional and intentional) is highest in the professionals responsible for medium-sized enterprises, in contexts of perceived high tax complexity. In particular, in the case of intentional tax noncompliance, we note greater vulnerability to the pressure exerted by employers/clients for professionals' participation in aggressive tax planning schemes among young women and professionals working in in-house departments of accounting and taxation.

Table 8: Profiles of tax professionals with the greatest propensity to intentional tax noncompliance

Profile 1	Profile 2
• Gender: male; • Age: > 35 to 50; • Tax Knowledge Index level: high; • Clients'/employers' turnover: > €2 million; • Perception of tax system complexity: high; • Way of organizing their activity: in-house accountancy and taxation departments.	• Gender: female; • Age: Up to 35; • Tax Knowledge Index: medium; • Clients'/employers' turnover: > €2 million; • Perception of tax system complexity: high; • Way of organising their activity: in-house accountancy and taxation departments.

After defining those profiles, based on the two dependent variables, it seems important to construct models to explain them.

5.4 Tax noncompliance in terms of Portuguese tax professionals: The explicative models

To perform these multivariate analyses, we used logistic regressions (the 'enter' method), since the dependent variables of both models are dichotomous.

Prior to these explanatory models, in order to simplify their creation, we constructed indices with some independent variables, namely:

1. The *Tax Knowledge Index* (an additive index), pp. a latent variable which replaces the following manifest variables: 'academic graduation plus curriculum with courses in taxation'; 'time spent on tax updating'; and 'years of tax experience'.

2. The *Legal*[33] *Tax Complexity Index*, the *Complexity of Tax Compliance Index in the Tax Professionals Context* and the *Complexity of Tax Compliance Index in the Tax Authorities Context*: three synthetic indices (latent variables), which replace the 14 manifest variables presented in Figures 1 and 2, thus reducing their large number. The statistical technique used to create these indices was the Principal Component Analysis.[34]

5.4.1 Model 1 — Tax professionals' unintentional tax noncompliant behaviour

In this model the dependent variable is 'tax professionals' propensity for unintentional tax noncompliant behaviour', a dichotomous variable (yes/no).[35] The independent variables are those presented in Table 9.

Table 9 summarises the results of the explicative model of the predictors of tax professionals' propensity for unintentional tax noncompliant behaviour.

Table 9: Tax professionals' propensity for unintentional tax noncompliant behaviour

Independent variables (Predictors)	B	Wald	Exp(B)
Age **(A)**	0.119	1.419	1.126
Gender (*Dummy*) [(a)] **(B)**	0.409**	5.977	1.506
Tax knowledge Index [36]**(C)**	0.044	0.682	1.045
Customers' (employers') turnover **(D)**	0.112	2.016	1.119
Ways of organising their activity (*Dummy*) [(b)] **(E)**	0.110	0.442	1.116
Legal Tax Complexity Index **(F)**[37]	0.199*	2.791	1.220
Complexity of tax compliance Index — tax professionals' context **(G)**[38]	-0.55	0.287	0.946
Complexity of tax compliance Index — tax authorities' context **(H)**[39]	0.017	0.025	1.017
Perception of tax system complexity (*Dummy*) [(c)] (I)	–0.489*	3.478	0.613
Perception about the relation of tax system complexity with the increase in unintentional tax noncompliance **(J)**	0.420***	24.965	1.521
Relation of tax complexity to the increase in the fear of making errors **(L)**	0.211**	4.108	1.235
Constant	–4.131***	26.340	0.016
Nagelkerke R^2	0.122***		

Reference categories: [(a)]Female; [(b)]In-house tax department; [(c)]High complexity
* $p < 0.1$; ** $p < 0.05$; *** $p < 0.001$

The estimated final model is represented by the following equation:

[33] Or legislative.
[34] Statistical technique which allows us to create synthetic indices.
[35] The proportion of those who said 'Do not want to answer' that question is 4.6%. Those answers were excluded from the analysis.
[36] Index previously created.
[37] Index previously created.
[38] Index previously created.
[39] Index previously created.

-4.131 (*Constant*) + 0.119**A** + 0.409**B** + 0.044**C** + 0.112**D** + 0.110**E** + 0.199**F** -0.55**G** + 0.017**H** - 0.489**I** + 0.420**J**+ 0.211**L**

The model explains 12.2% of the propensity for unintentional tax noncompliant behaviour among Portuguese tax professionals. It is important to note that there are other published studies with similar results. For instance, Cuccia and Carnes (2001) present a model of 25% of explicative capacity, concerning the relationship between tax complexity and tax equity perceptions. In contrast, Kasipillai and Jabbar (2006) use results of 15.9% to explain an association between taxpayers' gender and their tax noncompliant attitudes. Finally, Bonner et al. (1992) show results of 9%, 12%, 14%, 19% and 27%, by using a stepwise method, in a study concerning the ability of tax professionals to identify tax planning opportunities**.**

Furthermore, the model correctly classifies 64.5% of the respondents.

As regards the suitability of the model for the data, we noticed a likelihood ratio, which revealed the model as suitable, because $p < 0.001$ (*p-value* = 0.000) and there are only small differences between the values estimated by the model and the observed values. According to the Hosmer and Lemeshow test, with a *p-value* = 0.234 (> 0.05), this model seems suitable for the data.

We conclude that the independent variables with a statistically significant impact on the propensity of tax professionals for unintentional tax noncompliant behaviour, motivated by tax complexity, have the following effects: (i) men are up to 1.506 times more susceptible to tax noncompliance than women; (ii) the higher their level in the *Legal Tax Complexity Index*, the greater their propensity for tax noncompliance; (iii) tax professionals with a low perception of tax system complexity are up to 0.613 times less likely to engage in tax noncompliance than those who have a higher perception of tax system complexity, thus the high levels of tax complexity have a positive relation with tax noncompliance; and (iv) professionals who have a higher perception of the relationship of tax system complexity to the increase in unintentional tax noncompliance and the increase in the fear of committing errors have a higher propensity (1.521 and 1.235 times, respectively) for tax noncompliant behaviour.

From these results, we conclude that tax complexity provides a statistically significant explanation for some propensity for unintentional tax noncompliant behaviour among Portuguese tax professionals.

5.4.2 Model 2 — Tax professionals' propensity for tax aggressive activities

In this model the dependent variable is 'tax professionals' propensity to engage in tax aggressive activities' (intentional tax noncompliant behaviour), a dichotomous variable (refusal/no refusal).[40] The independent variables are those presented in Table 10.

Table 10: Tax professionals' propensity for tax aggressive behaviour

Independent variables (Predictors)	B	Wald	Exp(B)
Age **(A)**	–0.338**	7.800	0.713
Gender (*Dummy*) [(a)] **(B)**	0.366*	3.452	1.442

[40] 'No refusal' includes those who answered 'accept' and 'consider whether to accept or not'. Those who responded 'Do not want to answer' (7.9%) were excluded from the analysis.

Independent variables (Predictors)	B	Wald	Exp(B)
Tax knowledge Index **(C)**	–0.012	0.034	0.989
Customers' (employers') turnover **(D)**	0.178**	3.864	1.194
Ways of organising their activity (*Dummy*) [(b)] **(E)**	–0.288	2.256	0.749
Legal Tax Complexity Index **(F)**[41]	0.379**	7.144	1.461
Perception of tax system complexity (*Dummy*) [(c)] (G)	–0.099	0.108	0.906
Propensity to take risks (H)	–0.006	0.004	0.994
Clients'/employers' tax aggressiveness **(I)**	–0.087	0.820	0.917
Fear of losing customers/being dismissed **(J)**	0.322***	13.557	1.380
Fear of the probability of noncompliance detection **(L)**	–0.073	0.529	0.930
Fear of punishments imposed by tax authorities on their customers/employers **(M)**	–0.044	0.146	0.957
Fear of tarnishing their professional image **(N)**	–0.099	0.528	0.906
Fear of punishment imposed by OCC[42] **(O)**	0.051	0.217	1.053
Fear of customers'/employers' debts being reversed **(P)**	0.068	0.487	1.070
Personal and professional ethics **(Q)**	–0.104	0.414	0.901
Tax morality **(R)**	–0.443**	11.451	0.642
Perception of tax justice **(S)**	0.005	0.002	1.005
Constant	0.753	0.728	2.124
Nagelkerke R^2	0.151***		

Reference categories: [(a)]Female; [(b)]In-house tax department; [(c)]High complexity
* $p < 0.1$; ** $p < 0.05$; *** $p < 0.001$

The estimated final model is represented by the following equation:

$$0.753\ (constant) - 0.338\mathbf{A} + 0{,}366\mathbf{B} - 0.012\mathbf{C} + 0.178\mathbf{D} - 0.288\mathbf{E} + 0.379\mathbf{F} - 0.099\mathbf{G} - 0.006\mathbf{H} - 0.087\mathbf{I} + 0.322\mathbf{J} - 0.073\mathbf{L} - 0.044\mathbf{M} - 0.099\mathbf{N} + 0.051\mathbf{O} + 0.068\mathbf{P} - 0.104\mathbf{Q} - 0.443\mathbf{R} + 0.005\mathbf{S}$$

Table 10 summarises the results of the model, which explain the propensity to engage in tax aggressive tasks (intentional tax noncompliant behaviour) of tax professionals, in Portugal.

This model correctly classifies 71.5% of the respondents and explains 15.1% of tax professionals' propensity for intentional tax noncompliant behaviour (tax aggressiveness). However, this is a low value, showing some relationship between the variables. This is because it is difficult to explain and measure individual attitudes and perceptions, as highlighted by the results of Bonner et al. (1992) and Kasipillai and Jabbar (2006).

The model is suitable for the data, with $p < 0.001$ (*p-value* = 0.000) (as the Hosmer and Lemeshow test, with a *p-value* = 0.812 (> 0.05), attests); we also found that the values estimated by the model are very close to those observed.

According to the results presented in Table 10, we verify that the independent variables, which have a statistically significant relation to the propensity for tax professionals' intentional tax noncompliance, have the following effects: (i) younger tax professionals are more prone to tax aggressive behaviour; (ii) men are up to 1.442 times more prone

[41] This index was previously created.
[42] It is the regulatory entity of this profession.

to tax aggressive behaviour than women; (iii) those professionals who work for larger firms are most prone to tax aggressive behaviour; (iv) the higher the level in the *Legal Tax Complexity Index* the greater the propensity for tax aggressive behaviour; (v) the greater the fear of losing the client (or of being dismissed) the higher the propensity for tax aggressive behaviour; and (vi) the higher the professionals' level of tax morality, the lower the propensity to be tax aggressive.

We highlight the non-existence of a statistically significant relationship between tax professionals' own propensity to take risks and their propensity for intentional tax noncompliant behaviour. Moreover, we note the absence of any statistically significant relation to their tax aggressiveness of other variables presented in the international tax literature, such as professionals' tax knowledge, their customers' (or employers') tax aggressive behaviour, and all the types of punishments proposed in the questionnaire. Those findings are not in line with the traditional theory of tax evasion (regarding the fear of punishment) in tax professionals' decisions advocated by some scholars (Cuccia, 1994).

6. CONCLUSION

If we study the profile of Portuguese tax professionals, and categorise the age data by gender, we note that there has been an increase in the number of professional women in recent years. This suggests that although it has been predominantly a male domain in the past, if this trend continues, women will come to dominate numbers in the near future.

We also conclude that the majority of tax professionals have a degree, and their level of tax experience is high (73.7% of respondents have more than ten years' experience). Tax professionals mostly organise their activities by outsourcing, via accountancy and taxation offices (69.9%), with customers' portfolios composed essentially of SMEs.

Our *Legal Tax Knowledge Index*, allows us to evaluate specialised fiscal knowledge, classified as medium–high among those surveyed: Levels 8 and 10 of the Index contain the majority of tax professionals (43.2%) while 61.1% of tax professionals are at levels above the mean value. In future, the *Legal Tax Knowledge Index* values will increase, because the tax professionals with the fewest qualifications are mainly those who are nearing retirement age.

Portuguese tax professionals perceive their tax system as having a high level of complexity (89.1%). This result corresponds with international literature on the subject (Green, 1994; McKerchar, 2005).

By means of self-evaluation, 45.9% of tax professionals admitted to having engaged in unintentional tax noncompliance, due to tax complexity, at least once. We can also confirm, through self-evaluation, that only 65.6% of tax professionals report that they peremptorily refuse to engage in tax aggressive schemes. Thus, Portuguese tax professionals demonstrate a moderate tendency to engage in tax noncompliance (intentional or unintentional).

In addition, using the analysis of multiple correspondences, we define the profiles of Portuguese tax professionals most prone to tax noncompliant behaviour (intentional or unintentional).

In terms of the profiles with most propensity to unintentional tax noncompliance, the first profile consists of men whose ages range from '>50 to 65', classified on a high level of the *Legal Tax Knowledge Index*, whose clients (or employers) with the highest turnovers are placed in the category '> €2 million', and who have a high perception of tax system complexity. The second profile is characterised by women whose ages range from '> 35 to 50', on a medium level of the *Legal Tax Knowledge Index*, and whose perception of tax system complexity is high.

The presence of a high level of perceived tax system complexity in both profiles, suggests a relationship between the high perception of tax complexity and the commitment of errors, omissions and other forms of involuntary faux pas. These profiles should therefore command the attention of the entity which represents this profession (OCC) and of the policymakers. Despite the high level of tax knowledge of professionals in these profiles (medium and high levels), the data suggest that technical knowledge is insufficient to solve the problems of involuntary tax noncompliance caused by the high levels of perceived tax complexity.

The results obtained emphasise the importance of simplifying the Portuguese tax system, as well as the need to identify the most problematic areas in tax complexity perceived by professionals.

The profile with most propensity to intentional tax noncompliance consists of men or women whose ages range from '>35 to 50' and 'up to 35', respectively. This group is classified on a high or medium level of the *Legal Tax Knowledge Index*, and has clients (or employers) with the highest turnovers in the category '> €2 million'. They also demonstrate a high perception of tax system complexity. It is important to note the presence of a high level of perceived tax system complexity in this profile, which suggests a relationship between the high perception of tax complexity and the propensity of tax professionals to be tax aggressive.

Significantly, we identify a profile suggesting that younger women have a high propensity for intentional tax noncompliance, although the literature states that in general men are more likely to resort to tax noncompliance than women, particularly in its aggressive form. Evidence suggests that women in this profession are more exposed to pressures from clients and employers; it is possible that many holding their first professional position are thus more apprehensive about losing their jobs. This is an area requiring future research.

It is also important to emphasise that, in the case of women, there is an almost total overlap in the profile of women most susceptible to involuntary tax noncompliance and voluntary tax noncompliance. In other words, they have a propensity for both types of tax noncompliance (voluntary and involuntary), which makes concerns regarding the behaviour of professionals within these profiles even more relevant.

The profile of women with noncompliant behaviour (choices, judgments and counselling) does provide other causes for concern, in particular because the number of women entering this profession has been more than twice that of men in recent years. If this trend continues, the number of tax professionals (women) included in this profile will grow, which could significantly raise the levels of tax noncompliance in the future.

Using the variables of our study, we constructed an explicative model of tax professionals' unintentional tax noncompliant behaviour, that results from tax

complexity. Such behaviour can be predicted based on the following variables: 'gender', with men as the more tax noncompliant, 'legal tax complexity', 'perception of tax system complexity' and the relationship established by tax professionals between the high level of tax system complexity, and the increase in unintentional tax noncompliance, all with positive impacts on tax noncompliance. These results are in line with the tax literature review.

We also constructed an explicative model of tax professionals' propensity for tax aggressive behaviour. We found that 'age' and 'gender', with younger men as the more tax aggressive, 'legal tax complexity', the 'size of taxpayers that engage them', the 'fear of losing customers/being dismissed', all with a positive impact, and tax morality, with a negative impact, are the variables that explain the propensity for tax aggressive behaviour among tax professionals in Portugal. Those results, regarding 'age', 'gender', 'legal tax complexity', 'size of taxpayers that engage them' and 'fear of losing customers/being dismissed' are in line with the international literature.

These constructions lead us to consider the possibility that younger professionals can exhibit more tax aggressive behaviour because of greater dependence on their clients/employers. In addition, if we compare the level of dependence based on the way tax professionals organise their work, those who are employed in in-house departments of accountancy and taxation are more dependent on their employers than those who are self-employed and have a diversified portfolio of customers.[43] These issues are intrinsically linked to the importance attributed to the fear of losing customers/being dismissed.

We highlight the lack of importance of all forms of punishment for tax noncompliance, which suggests that the traditional theory of tax evasion (Allingham & Sandmo, 1972) is not very important in the Portuguese case, particularly in the context of tax professionals. In Portugal, punishment for noncompliance falls directly on tax professionals' clients/employers, not on the professionals themselves, which could explain their lack of concern over penalties. Consequently, the results of this Portuguese study are not consistent with the conclusions in the international tax literature review.

Once again, the high number of male professionals and female professionals ranked within the age range of the professionals classified as the most tax aggressive justifies concern about the fiscal aggressiveness of these professionals. It is important for the regulators of the profession and tax policymakers to consider ways to reduce the tendency of these professionals to be tax aggressive, including instituting principles of fiscal citizenship, as well as increasing fear of losing professional credentials.

In addition, Portuguese tax professionals' tax morality is an important predictor in this model. Our results concerning the importance of tax morality in the behaviour of Portuguese professionals is contrary to those found in the international literature, and thus previous studies around tax professionals' behaviour towards tax compliance do not attach significant importance to this variable. In addition, it is also contrary to the literature on taxpayers' tax morality in Portugal, which shows Portugal as a country with low tax morality (Alm & Torgler, 2006; Sá, 2014).

[43] This is a line of future research that needs to be further investigated to verify whether or not there is a statistically significant relationship, or a correlation caused by the fact that larger firms are most likely to rely on in-house accounting staff.

Conclusions regarding the impact of this variable are significant. According to the self-evaluation carried out by Portuguese tax professionals, the effect of tax morality seems to replace the negative impact that the fear of punishment has in many tax systems, especially in relation to tax aggressiveness.

In relation to the impact of tax complexity on tax professionals' tax noncompliant behaviour (intentional or unintentional), particularly with regard to its legal aspect, tax system complexity emerges as a serious problem. This deserves the attention of policymakers, tax authorities, the regulatory authority for this profession and academia, in order to unite efforts to minimise its negative effects on tax professionals' compliance activities.

Finally, as suggestions for future research, we point out the importance of gender in the behaviour of tax professionals towards tax (non)compliance, particularly with regard to the determination of causes of difference, as well as the vulnerability of young professionals in relation to employer and customer pressures.

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APPENDIX A: QUESTIONNAIRE (ENGLISH VERSION)

Certified Accountants' perception of tax complexity and tax compliance

1 - This questionnaire is part of the research of a doctoral dissertation.
2 - Please note that the information collected is confidential.
3 - You should not fill in this survey if you are not the TOC responsible for, at least, one entity.
4 - Thanks for your cooperation, it is very important.

PART I - IDENTIFICATION AND PROFESSIONAL EXPERIENCE

1. Gender: M F **2. Age:** **3. District of residence:**

4. Complete academic degree:
Up to 9th grade Up to 12th grade University

5. Did you attend any course on tax matters?
Yes No
(Include the years before the profession's regulation)

(You should only answer question 5. if you have chosen the last option in question 4)

6. Indicate approximately the number of hours of external training, in the tax area in 2011/2012:
Up to 24 h >24h to 48h >48h

7. Number of years of experience as TOC:
(Presented by OTOC, APECA, APOTEC, etc)

PART II - PROFESSIONAL ACTIVITY CHARACTERIZATION

8. How do you organize your professional activity?
Office of accountancy/tax. Company of other sector Other _____ (specify)

(You only should answer question 9. if you have chosen the 1st. option in question 8.)

9. What is your customers' portfolio composed of?

	Quantity
Micro companies (≤ 10 employees)	
Small companies (> 10 to 50 employees)	
Medium companies (> 50 to 250 employees)	
Large Companies (> 250 employees)	
TOTAL	

10. Please indicate the turnover of the largest company for which you are/were responsible for, over the last 5 years:

Up to 500,000 €	
> 500,000 € to 2 million €	
> 2 million € to 10 million €	
> 10 million € to 50 million €	
> 50 million €	

PART III - CERTIFIED ACCOUNTANTS' PERCEPTION OF PORTUGUESE TAX SYSTEM COMPLEXITY

11. How do you classify the Portuguese tax system as far as its complexity?
Very simple Simple Neither simple nor complex Complex Very Complex

12. Effects on tax system complexity of the legislative changes in the last 5 years:
Much simpler Simpler Unchanged More complex Much more complex

13. Effects on tax system complexity of the technological changes in the last 5 years:
Much simpler Simpler Unchanged More complex Much more complex

14. In your opinion, what is the most complex tax?

	VAT	Corporate tax	Income tax	Others
In the legislative perspective				
In the compliance perspective				

15. Classify the areas below, according to their importance in the compliance complexity:

	No importance	Very little importance	With some importance	Important	Very important
The tax obligation named "Fiscal dossier"					
Preparation of accounting information for fiscal purposes					
Confusing tax forms and unclear instructions					
Tax obligations computerization					
Insufficient help provided by tax administration staff					
Others: _____					

16. Classify the areas below, according to their importance in the legislative complexity:

	No importance	Very little importance	With some importance	Important	Very important
Unclear and ambiguous tax language					
Tax laws are frequently changed					
Tax laws use highly technical language					
Very extensive tax codes					
Very extensive articles with references to other articles					
Many exceptions to the rules and transitional arrangements					
Tax law too dispersed					
Transposition of EU tax legislation					
International tax legislation					
Others: _____					

17. How often do you rely on the following to ensure you are fiscally updated?

	Never	Rarely	Sometimes	Frequently	Always
Individual study of tax laws and instructions of tax returns					
Exchanges of points of views with other certified accountants					
Contact with local and regional services of tax administration					
Contact with the call center of tax administration					
Contact with the technician office of OTOC					
Frequency of the free seminars provided by OTOC					
Administrative interpretations of tax laws					
Frequency of professional training					
Newspapers and magazines about tax matters					

18. How important is it for you to be fiscally updated on the following?

	No importance	Very little importance	With some importance	Important	Very important
Proper compliance of tax obligations					
Better management/tax planning					
Better knowledge of penalties applied to tax noncompliance					
Others: _____					

19. Up to what extent do you agree with the following statements?

	Strongly disagree	Disagree	I do not agree or disagree	Agree	Strongly agree
Tax complexity is due to the economic complexity					
Tax complexity benefits the State					
Tax complexity benefits the taxpayers					
Tax complexity benefits the major economic groups					
Others: _____					

20. Indicate the number of hours you spend monthly, on average, ensuring that you are fiscally updated:

☐ Hours

21. Considering the time you spent on tax updates, how much time would you say you alocate to each tax?

VAT	Corporate	Income tax	Others	TOTAL
				100%

22. Named possible changes to the Portuguese tax system, which in your opinion might reduce its level of tax complexity:

Legislative stabilization	☐
Simplification and clarification of the legislative language	☐
Simplification of the tax forms and inclusion of examples	☐
Introdution of the prior consultation in the process of legislative change	
Reduction of the exceptions to the rules and the special arrangements	
Simplification of the small companies' tax obligations	☐
Creation of a tax code for non-residents' taxation	☐
Others: _____	☐

23. Up to what extent do you agree with the following statements regarding the impact of tax complexity on the activity conducted by TOC?

	Strongly disagree	Disagree	I do not agree or disagree	Agree	Strongly agree
It increases the involuntary tax noncompliance					
It increases the voluntary tax noncompliance					
It increases the sense of tax injustice and inequity					
It increases the fear of punishment in case of tax noncompliance					

PART IV - CERTIFIED ACCOUNTANTS' PERCEPTION IN RELATION TO TAX (NON)COMPLIANCE

24. Considering the total amount of time you dedicate to your tax activities, indicate, approximately the percentages allocated to:

In compliying with tax obligations	
In tax planning (more advantageous solutions)	
TOTAL	**100%**

25. In the course of your activity, has tax complexity ever resulted in situations of non-aggressive tax noncompliance behaviour?

Yes ☐ No ☐ Do not want to answer ☐

(if your answer is not YES, please skip to question 27)

26. If your answer to the previous question was YES, please classify the statements below regarding frequency, supplementing them with the various options. TAX COMPLEXITY HAS ALREADY LED YOU TO TAX NONCOMPLIANCE DUE TO ...

	Never	Rarely	Sometimes	Frequently	Always
Technical and confusing language of tax laws					
Complexity of tax forms and their instructions					
Ignorance of some tax obligations					
Ignorance of some legislation changes					
Inability to comply with all tax obligations on time					
Differeces in interpretation between tax administration staff and TOC					
Use of tax laws' ambiguities and gaps in taxpayers' favour					
Others: _____					

27. If a customer / employer suggested the use of potencial gaps or ambiguities of the tax laws in abusive scheme of tax planning, what would your reation be?

Refuse ☐ Consider ☐ Accept ☐ Do not want to answer ☐

28. Classify, according to their importance, the factors which you take into account in your decision:

	No importance	Very little importance	With some importance	Important	Very Important
Your propensity to take risks					
Tax aggressiveness of your clients/employers					
Your fear of losing customers/ being dismised					
The probability of tax noncompliance being detected					
Your fear of penalties being imposed on the costumers/employers					
Your fear of tarnishing your professionals' image					
Your fear of penalties imposed by the OTOC					
Possible reversals of debts for yourself as certified accountant					
Your personal and professional ethic					
Your level of tax morality					
Your perception of tax injustice					
Others: _____					

29. Please state any suggestions you may have to improve. If you desire, you can make suggestions for improvement of the tax system, to reduce legislative and administrative tax complexity and to increase voluntary tax compliance

Thank you for your cooperation.

NOTES:

TOC [*Técnico Oficial de Contas*]: the denomination of Portuguese Certified Accountants in 2013

OTOC [*Ordem dos Técnicos Oficiais de Contas*]: the denomination of TOCs' regulatory entity, in 2013.

AECA and APECA are accountants professional associations.