The Ethics of Tax Evasion:
An Approach on Variables Using Principal Component Analysis

César Ribeiro
Universidade Europeia

Carlos Santos Pinho
Universidade Aberta
Universidade Europeia

The literature encompasses a relatively wide range of arguments regarding the perception of tax evasion as an ethical procedure. Each of these arguments stands for a valid variable for study, leading to an equally wide range of variables. Our study is aimed at addressing these variables using the Principal Component Analysis (PCA) and at identifying subsets of variables that may be strongly correlated with one another. As a result, regarding the eighteen initial eigenvalues, it was possible to create three new composite variables, all of them with satisfactory internal consistency results.

Keywords: tax evasion, ethics, principal components, variables

INTRODUCTION

The literature review encompasses a relatively wide range of arguments regarding the perception of tax evasion as an ethical procedure. Each of these arguments stands for a valid variable for study, leading to an equally wide range of variables. Our study is aimed at addressing these variables using the Principal Component Analysis (PCA) and at identifying subsets of variables that may be strongly correlated with one another, thus allowing for the reduction in the number of variables as well as complexity related to their use. Therefore, we will employ the eighteen arguments contained in the eighteen statements that express the three views of ethics in tax evasion used by McGee & Benk (2011), which we will address in this study. The difference, regarding these authors, for our study, is the research's recipient. Instead of using business management professors and students and assessing whether their responses differ significantly from state to state, we will use the responses from professors and students from higher management and non-management courses.

LITERATURE REVIEW

The number of concepts that have been developed within the tax world is noteworthy. That is, these concepts have been developed in such a fashion that some of them seem to overlap one another, aiming to demonstrate the same reality. Others seem to arise from a focus on a specific aspect, whether devised by the creativity of the citizen or by the need for revenue collection by the Government. Some of these

concepts are: *Planeamento Fiscal* [Tax Planning] (Guimarães, 2001; Castro 2007), *Elisão* [Avoidance] (Xavier, 2007), *Evasão* [Evasion] (Xavier, 2007; Pombo 2007; Lourenço, 1999; Guimarães, 2001; Sá Gomes, 2000), *Fraude* [Fraud] (Guimarães, 2001; Castro 2007; Lourenço, 1999), *Branqueamento de Capitais* [Money Laundering] (Reis *et al.*, 2008) and *Preços de Transferência* [Transfer Prices] (Dourado, 2016). Because of these wide-ranging concepts, defining and clarifying them is of utmost relevance, as well as for contextualizing our study.

A Conceptual Approach

As aforementioned, it is important to focus on the definition and clarification of four concepts, as the other concepts consist only of different ways of realizing the same reality. The four concepts are *Tax Planning, Avoidance, Evasion* and *Fraud*.

Tax Planning

The Tax Planning concept arises from a forecasting need (Ribeiro, 2011) or from the economic study of an investment, in an attempt to reduce costs and maximize profits. It appears as a serious and indispensable step towards the success of any business activity (Guimarães, 2001). Castro (2007:3) takes a step further and states that "individuals and companies must adopt a lawful and righteous posture, which can and must include tax planning or management, minimizing, for instance, the tax costs of a company as well as any commercial, industrial, financial, labour, energy costs, etc." Hence, tax savings must be performed in a legal and transparent manner, as we are dealing with a lawful procedure (Castro, 2007). In summary, Tax Planning is any scheme or action aimed at obtaining tax advantages. However, it is based on a lawful and acceptable attitude displayed by taxpayers.

Avoidance

The Portuguese definition for the word Elision or Deletion (*Elisão* in Portuguese) is the "act of deleting; suppression" (Barreira, 1955). Eliding means "suppressing; deleting; omitting". According to Xavier (2007), when referring to Elision or Deletion as an international concept, an unlawful act is not necessarily in question, but the practice of (in principle) lawful acts. This idea seems to be related to existing gaps in the tax system itself, allowing for the possibility of some tax savings (Sá Gomes, 1993). The concept of Elision or Deletion is also called "lawful flight", "tax avoidance" (Sanches, 1985), or "legal tax evasion", where the taxpayer seeks a more favourable legal regime without infringing tax laws and rules (Castro, 2007). However, tax freedom abuse is at stake, as this is not the goal pursued by lawmakers. Regarding the concept of *avoidance*, Cressey (1950) addresses it, justifying that each taxpayer is entitled to reduce and minimize their tax burden by legitimate means. This means that, while doing so, taxpayers should not hide or distort facts. In this case, the selection of the "best methods", which lead to a reduced tax value, should be properly informed and their effects should be reflected.

Evasion

According to Pombo (2007), tax evasion is the result of an especially cunning legal-tax action or omission, aimed at obtaining a more favourable tax status. The objective is to avoid the payment of taxes, reducing them or delaying their payment, which leads to a conflict of interest between the taxpayer and the Tax Administration (Lourenço, 1999). The difference between evasion and avoidance, as presented earlier, is related to the time or date when the act or omission takes place. If the act is performed after the taxable event, we are dealing with tax evasion. If the act or omission is performed before the taxable event, we are faced with tax avoidance (Guimarães, 2001). According to the latter author, the overall doctrine tends to consider that tax evasion is illegal, therefore, being a criminal conduct (Castro, 2007).

Fraud

According to Castro (2007), tax fraud also consists of criminal conduct, such as tax evasion. In fraud, an unlawful act breaches the fundamental ethical good set out by law (Guimarães, 2001). Costa & Wood (2012), in their study on corporate fraud, state that fraud must be perceived as a process, in order to

understand how it happens. The authors add that fraud stems from coordinated actions that occur over time. Jones (2013) presented fraud as the act of tampering with relevant facts, or silence, when, in good faith, it would require vocalizing, resulting in material damage (obtaining something of value from another person by means of deceit). Moreover, it is defined as an intentional irregular behaviour by taxpayers with the specific intent of defrauding the tax system. According to Article 103 of the Portuguese General Regime of Tax Infractions (RGIT), tax fraud is unlawful conduct aimed at the non-settlement, non-delivery or non-payment of tax obligations. It also includes improper obtainment of tax benefits, refunds or other asset advantages that may cause a decrease in tax revenues.

Ethics

That said, with the technical concepts being elucidated, it is worth analysing the concept of ethics. However, our study shall not address it from a philosophical point of view or carry out an in-depth literature review in such regard. At this stage, the main point of interest is to define and relate it to other realities. Ethics consists of a set of rules of conduct for an individual or a group (www.dicionario.priberam.org). It is a branch of Philosophy that deals with the foundations of moral theory (correctness, decency, honesty, integrity, fairness, etc.). The theme of our study marries the concepts of Evasion and Ethics. The first being unlawful behaviour and the second being correct, honest and fair conduct; it will not be easy to describe a relationship between them. However, there may be sufficiently valid arguments for this.

Demographic Aspects and an Approach From an Ethical Point of View

McGee & Gelman (2009) point out some explanations for behaviours aimed at avoiding the payment of taxes that differ from country to country, such as gender, age, level of education and religious beliefs. Other possible situations are the political system or the level of income of a country. Culture also plays a role in this matter. The results of the study by the latter authors indicate that some people will circumvent taxes if they have the opportunity to do so. However, many will not. As an example, the level of education is not a major differentiator for the Latin American countries included in the study, as well as the United States. As for Australia and New Zealand, the authors demonstrate that as individuals have a higher level of education, they tend to display less aversion to tax evasion. Considering the positive correlation between level of education and income level, the authors conclude that as Australians and New Zealanders become wealthier, there is a strong tendency towards tax evasion. However, the same conclusion cannot be drawn regarding the more affluent classes in Latin American countries, given that the level of education plays no significant role in their attitude towards tax evasion. In another study by McGee (1999), the author states that various religions have differing views on how unethical tax evasion can be. It is tempting for those more "accommodating" to choose the most convenient view instead of a more sensible view. According to McGee, the rationalist approach on the tax evasion issue acknowledges that not all taxes are automatically fair. When a tax is deemed unfair, there is probably no ethical obligation to pay it. Rationalists would recognize that what is illegal cannot necessarily be considered as unethical. They may even differ on considering the definition of unfair tax. However, the premise is the same, that is, people are ethically obliged to pay fair taxes only. A more in-depth analysis of what fair taxation means (McGee, 1999) reveals that few taxes, if any, fall into this category. According to Mittone & Bosco (1997), the taxpayer's choice will be affected by their preferences - mainly regarding their attitude towards risk-taking actions – as well as the return on risk-adjusted capital established by the tax structure. This includes the tax rate and fines in the case of evasion. However, the "fair play" model seems to be unsatisfactory on several levels. In the latter authors' opinion, it neglects the psychological aspects stemming from the decision to evade taxes, excluding any feelings of shame regarding the tax evasion itself or shame in being discovered or punished. In other words, the model does not take into account the moral constraints involved in the tax evasion decision.

The 18 Statements: Three Views of Ethics in Tax Evasion

McGee & Benk (2011) developed a research instrument based on the issues that have been discussed and the arguments that have arisen in the literature on ethics in tax evasion for the past 500 years. Similar research instruments have been used to test population samples in Bosnia, Romania and Guatemala. As part of the same study, the research was distributed to international business professors and business students from universities in Turkey. The research instrument consists of 18 statements that reflect the three views of ethics in tax evasion that have emerged over the centuries. The study had questions related to the gradients of agreement with each of the statements, with scores from 1 to 7 (1 = totally agree; 7 = totally disagree). A comparison in the results was made to determine whether the responses were significantly different from state to state. The 18 statements are referred to in Table 1 (appendix), as well as the average response recorded for each one. Over the centuries, three basic points of view have emerged on the ethics of tax evasion (McGee & Benk, 2011). The first considers that tax evasion is always, or nearly always, unethical. There are basically three fundamentals supporting this belief. One reasoning is the belief that individuals have a duty to pay the State for any taxes levied. This view mainly prevails in democracies where there is a strong belief that individuals must comply with a majority government. The second justification for an ethical duty to pay taxes is because the individual has a duty towards other members of the community. This view holds that individuals should not make use of services provided by the State without contributing to the payment of taxes. The third reason is that we owe God the payment of taxes, that is, God has ordered us to pay our taxes. This view may not be accepted by among atheists, though it is strongly held in some religious circles. In addition, following the study of the latter authors, the second point of view can be referred to as the anarchist's view. This view holds that there never is any obligation to pay taxes because the State is illegitimate, simply a thief, with no moral authority to take anything from anyone. The State is nothing more than a mafia organisation, hiding under the guise of democracy, with official leaders. Anarchist literature does not directly address the ethics of tax evasion, but discusses the individual's relationship with the State. The issue of tax evasion is only one aspect of that relationship. There is no social contract according to this position. Where there is no explicit agreement regarding the payment of taxes, there are no taxes. All taxation necessarily involves the seizure of property by force, or the threat of force, without the permission of the owner (namely theft). The third view holds that tax evasion can be ethical in some circumstances and unethical in others. This is the predominant view. There is some moral support for tax evasion. However, some arguments are stronger than others. As different demographic groups emphasize contrary historical arguments differently, the cultural dimension must be taken into account. Some of the respondents are more opposed to tax evasion in some cases than in others, which has political implications. The authors demonstrate that tax evasion aversion is weaker in cases where the government is viewed as corrupt or oppressive, or where the system is perceived as being unfair. Thus, it may be possible to reduce the depth of tax evasion by reducing government corruption and oppression, as well as the perceived injustice of the tax system.

Main Currents of Thought

After the literature review, the following currents of thought can be highlighted:

a) Tax evasion is the result of an especially cunning legal-tax action or omission, aimed at a specific tax status - Pombo (2007);

b) Many academic studies do not find a correlation between tax levels and the various key measures of economic performance - Mazerov (2013);

c) The traditional paradigm postulates that taxpayers weigh the expected utility of the benefits arising from successful tax evasion with the prospective risk of being discovered and punished - Maciejovsky (2012);

d) Over the centuries, three basic points of view have emerged on the ethics of tax evasion (McGee & Benk, 2011);

e) A possible feature that leads to behaviours aimed at avoiding the payment of taxes is the country's political system - McGee & Gelman (2009);

f) The rationalist approach acknowledges that not all taxes are automatically fair - McGee (1999).

METHODOLOGY

The data collection of our study used a questionnaire addressed to professors and students in higher management and non-management courses. This instrument was based on the eighteen statements that express the three views of ethics in tax evasion used by McGee & Benk (2011). Thus, we questioned the respondents about their level of agreement with each of the statements, with scores from 1 to 5 (1 = "strongly agree"; 5 = "strongly disagree") on the Likert scale. This scale was also used by other authors, some of them in very recent studies (Arslan et al., 2018; Leite et al., 2018; Cardwell et al., 2019; Frezatti et al., 2007; White et al., 2015), including studies on the perceptions of students and teachers regarding ethics, accounting and education issues. Hence, the Likert scale seemed to be appropriate for our data collection instrument. The eighteen statements aforementioned can be found in Table 2 (translated).

Sample Calculation

To calculate the size of our sample, it was necessary to collect information about higher education teachers and students. We used Pordata's website (pordata.pt) to assess the information contained in Tables 3 and 4. Using the most current data from each of the tables, that is, teachers in 2017 (34,227) and students in 2018 (372,753), we found a population of 406,980 individuals. The fact that we used different years, and that values may change, did not seem to be relevant for the analysis, as the sample value would not vary, pursuant to the calculation simulator (raosoft.com). Thus, considering a population of 406,980 individuals, a 95% confidence interval and a 5% margin of error, the recommended sample size would be 384 individuals. Whilst analysing the authors' statements and the way they refer to their content, we found that each statement was called an *argument*. In other words, depending on each argument, citizens consider tax evasion as ethical or not. This argument is nothing more than a reason that justifies the respondent's perception.

Principal Component Analysis (PCA)

As abovementioned, the research instrument developed by McGee & Benk (2011) consists of eighteen statements that express the three views of ethics in tax evasion that have arisen over the centuries. Hence, because of the dimension and complexity that an analysis model could have, we subjected the eighteen variables to the Principal Component Analysis (PCA). PCA, as a factor analysis multivariate method (Carvalho & Ávila, 2019), allows for the identification of subsets of variables that are strongly correlated with one another. This exploratory analysis enables the partition of input variables into different themed subgroups. Thus, it is possible to identify latent dimensions and reduce information through the establishment of new variables (in smaller numbers). One of the requirements for performing a PCA is the level of measurement of the input variables, which must be metric, or treated as such (on a Likert scale), as it was in our case. Therefore, this requirement was met. Conversely, input variables must be correlated with one another (multicollinearity), as the goal is to identify combinations between original variables. The sample size is also worthy of attention. It should be large enough as regression coefficients are unreliable when estimates are made from small samples. According to Carvalho & Ávila (2019), the literature makes several recommendations regarding the minimum number of observations by reference to the number of variables. Thus, they point to the need for at least five times more cases in relation to the number of variables. In our study, if we considered the eighteen arguments as eighteen variables, we would need at least ninety cases (18 X 5). As it was possible to collect 452 responses to our questionnaire (for a sample of 384), we can also consider that this requirement has been met. As aforementioned, input variables should be correlated, that is, to assess the suitability of the input matrix to perform the PCA. This analysis was performed using the Kaiser-Meyer-Olkin (KMO) test, which allows for quantifying the level of inter-correlations between variables. By comparing the KMO grid (see Table 5) presented by Reis (1997) with the values achieved with our data (see Table 6), we could conclude on the PCA quality.

Hence, with a KMO value of 0.906, the quality of our PCA will be "marvellous". Therefore, one further requirement was met. The principal components are calculated in descending order of the importance of the contribution for the total variance explained of the data (Carvalho & Ávila, 2019). Thus, the first component is a linear combination that mostly explains the total variance of the original data. On the other hand, the last component will be the one that least contributes to the total variance explained. Whilst applying the PCA, the total variance (TV) will be equal to the number of variables involved in the analysis multiplied by one. In this case, the TV will be equal to eighteen, as we can confirm from the information in Table 7. Eigenvalues correspond to the variance explained by each of the principal components, whose sum is equal to the TV (eighteen). In our case, the eighteen components fully explain the total variance of the eighteen input variables. That said, as the reason for using the PCA has been justified and the respective requirements have been met, the time has come to decide how many components should be extracted. The "Kaiser criterion" is part of the set of extraction criteria, which is the one that the SPSS software uses by default. This criterion selects the components with eigenvalues greater than the unit. By using Table 7 again, we can clearly see that three principal components are in play. The "proportion of variance explained" criterion is also part of the extraction criteria. If we take this criterion as a basis, or if we need to confirm the decision based on the Kaiser criterion, we will see that we have reached the same conclusion. This second criterion greatly depends on the nature of what is being studied (Carvalho & Ávila, 2019). The authors state that we can usually consider a solution that has a score of 60% of total variance explained as satisfactory. In our case, the three principal components shown in Table 7 achieved a 62.2% score, which also meets the second criterion. Once the principal components are identified (in our case, only three), it is necessary to interpret them. Therefore, we must pay attention to the component matrix in Table 8. For this specific table, the component matrix is represented "after rotation" to obtain a simplified structure in order to facilitate interpretation. According to Carvalho & Ávila (2019), one of the most widely used rotation methods is "Varimax", which is the method proposed by Kaiser. The objective is to define a solution in which each variable has a loading close to "-1" or "1" in a single component. This situation indicates the existence of an association between variables and components, or the opposite, when loading is close to "zero". Regarding the component matrix in Table 8, the values presented therein correspond to the weight of input variables for each of the extracted components, which measures the correlation between components and original variables (Reis, 1997). Thus, variables with the greatest weight were selected. The closer to |1|, the stronger the association between each variable and component, that is, the more representative the variable is in that component (Carvalho & Ávila, 2019). In summary, weights greater than zero indicated the existence of a positive correlation and weights lesser than zero indicate the existence of a negative correlation. The abovementioned selection can be seen more clearly in Table 9. Thus, the first extracted component will include seven variables (those with the greatest weight). The second component will include eight variables and the third component will include three variables only.

The Establishment of New Variables

Thus, we can establish new variables (in lesser numbers), allowing for the division into different themed subgroups, the identification of latent dimensions and data reduction, as aforementioned. For this, we will make use of indexes (via summated scales), creating new composite variables through the mean variables that weigh the most in each component. Hence, we will have only three variables, instead of the initial eighteen. Whilst analysing Table 9, it is possible to assign a name to each of these three new variables considering the initial eigenvalues on which they were based. Therefore, we have made their reading and analysis easier. Thus, the first variable will be called "Always Ethics", the second, "Waste, Corruption and Injustice" and the third variable can be described as "Discrimination and Oppressive Regimes". Once our three composite variables have been created, we can measure their internal consistency, so we will resort to Cronbach's alpha calculation for each of them (see Tables 10, 11 and 12). Considering that there is consistency for alpha values > 0.7, or, in certain exploratory studies, at least > 0.6 (Carvalho & Ávila, 2019), the internal consistency of our indexes (0.887, 0.850 and 0.862) is confirmed.

RESULTS AND CONCLUSIONS

The population of our study consisted of 406,980 individuals. The sample size calculation recommended a number of 384 individuals. However, it was possible to obtain 452 responses to our questionnaire. In summary, it was possible to conclude the following:

1. The literature review shows very few articles that discuss the ethical aspects of evasion.
2. Some authors point out the need for more research.
3. Our research instrument consisted of a questionnaire addressed to professors and students of higher education courses.
4. The questionnaire used a 5-point Likert scale.
5. The use of this scale was justified with reference to other authors in recent research, including studies on perception, students, teachers and ethics.
6. The population of our study consisted of 406,980 individuals.
7. The sample size calculation recommended a number of 384 individuals.
8. It was possible to obtain 452 responses to our questionnaire (56% women and 44% men).
9. The Principal Component Analysis (PCA) was used, and the requirements for carrying out the analysis were met.
10. The Kaiser-Meyer-Olkin (KMO) test and the measurement grid presented by Reis (1997) were used to assess the suitability of the input matrix to perform the PCA ("marvellous" score).
11. The "Kaiser criterion" was used to extract the principal components. The "proportion of variance explained" criterion confirmed the result.
12. **Thus, instead of the eighteen initial eigenvalues, it was possible to use only three, described as *"Always Ethical"*, *"Waste, Corruption and Injustice"* and *"Discrimination and Oppressive Regimes"*, as demonstrated by the PCA.**
13. We measured the internal consistency of the three composite variables by calculating Cronbach's Alpha. The results were as follows: 0.887, 0.85 and 0.862.

As a limitation to our study, it is worth mentioning our objective was not aimed at analysing and concluding that the arguments contained in the statements have an effect on the perception of tax evasion as an ethical procedure. Nor, if this effect varies, pursuant to the *age, sex, academic degree* or *level of income* of the respondents (although these appeared in the questionnaire), which is why no results or conclusions were presented in this sense.

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APPENDIX

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TABLE 1
THE 18 STATEMENTS | MEANS

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S#	Statement	Mean
1	Tax evasion is ethical if tax rates are too high	4.238
2	Tax evasion is ethical even if tax rates are not too high because the government is not entitled to take as much as it is taking from me	5.735
3	Tax evasion is ethical if the tax system is unfair	3.945
4	Tax evasion is ethical if a large portion of the money collected is wasted	3.766
5	Tax evasion is ethical even if most of the money collected is spent wisely	5.890
6	Tax evasion is ethical if a large portion of the money collected is spent on projects that I morally disapprove of	4.471
7	Tax evasion is ethical even if a large portion of the money collected is spent on worthy projects	6.038
8	Tax evasion is ethical if a large portion of the money collected is spent on projects that do not benefit me	5.653
9	Tax evasion is ethical even if a large portion of the money collected is spent on projects that do benefit me	5.931
10	Tax evasion is ethical if everyone is doing it	5.619
11	Tax evasion is ethical if a significant portion of the money collected winds up in the pockets of corrupt politicians or their families and friends	3.609
12	Tax evasion is ethical if the probability of getting caught is low	5.699
13	Tax evasion is ethical if some of the proceeds go to support a war that I consider to be unjust	4.031
14	Tax evasion is ethical if I can't afford to pay	4.638
15	Tax evasion is ethical even if it means that if I pay less, others will have to pay more	5.760
16	Tax evasion would be ethical if I lived under an oppressive regime like Nazi Germany or Stalinist Russia	3.855
17	Tax evasion is ethical if the government discriminates against me because of my religion, race or ethnic background	3.951
18	Tax evasion is ethical if the government imprisons people for their political opinions	4.035
	Average score	4.826

Source: McGee & Benk (2011:255)

TABLE 2
AS 18 AFIRMAÇÕES

#	AFIRMAÇÃO
1	A evasão fiscal é ética se as taxas de imposto forem muito elevadas.
2	A evasão fiscal é ética mesmo que as taxas de impostos não sejam muito elevadas porque o governo não tem o direito de exigir de mim o que está a exigir.
3	A evasão fiscal é ética se o sistema tributário for injusto.
4	A evasão fiscal é ética se uma grande parte do valor arrecadado for desperdiçada.
5	A evasão fiscal é ética mesmo que a maior parte do valor arrecadado seja gasta com sabedoria.
6	A evasão fiscal é ética se uma grande parte do valor arrecadado for gasta em projetos que eu desaprovo moralmente.
7	A evasão fiscal é ética mesmo que uma grande parte do valor arrecadado seja gasta em projetos dignos.
8	A evasão fiscal é ética se uma grande parte do valor arrecadado for gasta em projetos que não me beneficiam.
9	A evasão fiscal é ética mesmo que uma grande parte do valor arrecadado seja gasta em projetos que me beneficiam.
10	A evasão fiscal é ética se todos a estiverem a praticar.
11	A evasão fiscal é ética se uma parcela significativa do valor arrecadado for encaminhada para os bolsos de políticos corruptos ou das suas famílias e amigos.
12	A evasão fiscal é ética se a probabilidade de ser descoberta for baixa.
13	A evasão fiscal é ética se alguns dos rendimentos forem para apoiar uma guerra que eu considero ser injusta.
14	A evasão fiscal é ética se eu não puder pagar.
15	A evasão fiscal é ética, mesmo que signifique que, se eu pagar menos, outros terão que pagar mais.
16	A evasão fiscal seria ética se eu vivesse sob um regime opressivo como o "Nazi Germany" ou "Stalinist Russia".
17	A evasão fiscal é ética se o governo me discriminar por causa da minha religião, raça ou origem étnica.
18	A evasão fiscal é ética se o governo deter os cidadãos por causa da sua opinião política.

Source: Drafted by the authors ("statements" translated to Portuguese from McGee & Benk, 2011)

TABLE 3
HIGHER EDUCATION STUDENTS: TOTAL AND PER SEX (2010 – 2018)

Years	Sex		
	Total	Males	Females
2010	383 627	179 151	204 476
2011	396 268	184 627	211 641
2012	390 273	181 515	208 758
2013	371 000	173 745	197 255
2014	362 200	168 252	193 948
2015	349 658	162 323	187 335
2016	356 399	166 117	190 282
2017	361 943	167 919	194 024
2018	372 753	172 235	200 518

Source: DGEE/MEd – MCTES – DIMAS/RAIDES | Pordata (adapted)

TABLE 4
HIGHER EDUCATION TEACHERS: TOTAL AND PER EDUCATIONAL SUBSYSTEM (2010 – 2017)

Years	Education subsystem		
	Total	Public	Private
2010	38 064	26 410	11 654
2011	37 078	25 849	11 229
2012	35 482	25 528	9 954
2013	33 528	24 745	8 783
2014	32 346	24 493	7 853
2015	32 580	25 142	7 438
2016	33 160	25 699	7 461
2017	34 227	26 579	7 648

Source: DGEEC/MEd – MCTES – Inquérito ao Registo Biográfico de Docentes do Ensino Superior (REBIDES) | adapted from Pordata)

TABLE 5
KMO GRID

KMO	ACP
1 – 0,90	Muito Boa
0,80 – 0,90	Boa
0,70 – 0,80	Média
0,60 – 0,70	Razoável
0,50 – 0,60	Má
<0,50	Inaceitável

Source: Reis (1997, 279)

TABLE 6
KMO READING (COLLECTED DATA)

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		,906
Bartlett's Test of Sphericity	Approx. Chi-Square	4174,182
	df	153
	Sig.	,000

Source: Drafted by the authors using SPSS software

TABLE 7
VARIÂNCIA EXPLICADA ("TOTAL VARIANCE EXPLAINED")

Component	Initial Eigenvalues		
	Total	% of Variance	Cumulative %
1	6,799	37,774	37,774
2	3,179	17,664	55,438
3	1,223	6,794	62,231
4	,872	4,843	67,074
5	,695	3,860	70,934
6	,646	3,590	74,524
7	,563	3,130	77,654
8	,534	2,969	80,623
9	,497	2,762	83,385
10	,474	2,631	86,016
11	,447	2,484	88,500
12	,431	2,395	90,895
13	,367	2,040	92,935
14	,320	1,778	94,713
15	,288	1,601	96,314
16	,271	1,508	97,822
17	,211	1,174	98,996
18	,181	1,004	100,000

Extraction Method: Principal Component Analysis.

Source: Drafted by the authors using SPSS software

TABLE 8
ROTATED COMPONENT MATRIX

	Component		
	1	2	3
P7.9 – A evasão fiscal é ética mesmo que uma grande parte do valor arrecadado seja gasta em projetos que me beneficiam.	,876	,101	,005
P7.7 – A evasão fiscal é ética mesmo que uma grande parte do valor arrecadado seja gasta em projetos dignos.	,870	-,060	,022
P7.5 – A evasão fiscal é ética mesmo que a maior parte do valor arrecadado seja gasta com sabedoria.	,837	,081	,024
P7.2 – A evasão fiscal é ética mesmo que as taxas de impostos não sejam muito elevadas porque o governo não tem o direito de exigir de mim o que está a exigir.	,731	,251	-,091
P7.8 – A evasão fiscal é ética se uma grande parte do valor arrecadado for gasta em projetos que não me beneficiam.	,702	,356	,074
P7.10 – A evasão fiscal é ética se todos a estiverem a praticar.	,673	,137	,083
P7.15 – A evasão fiscal é ética, mesmo que signifique que, se eu pagar menos, outros terão que pagar mais.	,563	,365	,196
P7.4 – A evasão fiscal é ética se uma grande parte do valor arrecadado for desperdiçada.	,223	,786	,169
P7.11 – A evasão fiscal é ética se uma parcela significativa do valor arrecadado for encaminhada para os bolsos de políticos corruptos ou das suas famílias e amigos.	-,113	,711	,321
P7.3 – A evasão fiscal é ética se o sistema tributário for injusto.	,162	,697	,202
P7.1 – A evasão fiscal é ética se as taxas de imposto forem muito elevadas.	,393	,696	,029
P7.13 – A evasão fiscal é ética se alguns dos rendimentos forem para apoiar uma guerra que eu considero ser injusta.	,099	,575	,324
P7.6 – A evasão fiscal é ética se uma grande parte do valor arrecadado for gasta em projetos que eu desaprovo moralmente.	,427	,542	,127
P7.14 – A evasão fiscal é ética se eu não puder pagar.	,088	,521	,467
P7.12 – A evasão fiscal é ética se a probabilidade de ser descoberta for baixa.	,467	,492	,163
P7.18 – A evasão fiscal é ética se o governo detiver os cidadãos por causa da sua opinião política.	,007	,214	,892
P7.17 – A evasão fiscal é ética se o governo me discriminar por causa da minha religião, raça ou origem étnica.	,071	,220	,853
P7.16 – A evasão fiscal seria ética se eu vivesse sob um regime opressivo como o "Nazi Germany" ou "Stalinist Russia".	,049	,250	,798

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.[a]

a. Rotation converged in 6 iterations.

Source: Drafted by the authors using SPSS software

TABLE 9
ROTATED COMPONENT MATRIX (ADAPTED)

		Componente		
		1	2	3
P7.9 - A evasão fiscal é ética **mesmo que** uma grande parte do valor arrecadado seja gasta em projetos que me beneficiam.	**SEMPRE ÉTICA**	0,876	0,101	0,005
P7.7 - A evasão fiscal é ética **mesmo que** uma grande parte do valor arrecadado seja gasta em projetos dignos.		0,87	-0,06	0,022
P7.5 - A evasão fiscal é ética **mesmo que** a maior parte do valor arrecadado seja gasta com sabedoria.		0,837	0,081	0,024
P7.2 - A evasão fiscal é ética **mesmo que** as taxas de impostos não sejam muito elevadas porque o governo não tem o direito de exigir de mim o que está a exigir.		0,731	0,251	-0,091
P7.8 - A evasão fiscal é ética se uma grande parte do valor arrecadado **for gasta** em **projetos que não me beneficiam**.		0,702	0,356	0,074
P7.10 - A evasão fiscal é ética **se todos a estiverem a praticar**.		0,673	0,137	0,083
P7.15 - A evasão fiscal é ética, mesmo que signifique que, **se eu pagar menos, outros terão que pagar** mais.		0,563	0,365	0,196
P7.4 - A evasão fiscal é ética se uma grande parte do **valor** arrecadado for **desperdiçada**.	**DESPERDÍCIO, CORRUPÇÃO E INJUSTIÇA**	0,223	0,786	0,169
P7.11 - A evasão fiscal é ética se uma parcela significativa do valor arrecadado for encaminhada para os bolsos de políticos **corruptos** ou das suas famílias e amigos.		-0,113	0,711	0,321
P7.3 - A evasão fiscal é ética se o sistema tributário for **injusto**.		0,162	0,697	0,202
P7.1 - A evasão fiscal é ética se as **taxas** de imposto forem **muito elevadas**.		0,393	0,696	0,029
P7.13 - A evasão fiscal é ética se alguns dos rendimentos forem para **apoiar uma guerra** que eu considero ser **injusta**.		0,099	0,575	0,324
P7.6 - A evasão fiscal é ética se uma grande parte do valor arrecadado for gasta em **projetos que eu desaprovo** moralmente.		0,427	0,542	0,127
P7.14 - A evasão fiscal é ética **se eu não puder pagar**.		0,088	0,521	0,467
P7.12 - A evasão fiscal é ética se a **probabilidade de ser descoberta** for baixa.		0,467	0,492	0,163
P7.18 - A evasão fiscal é ética se o governo deter os cidadãos por causa da sua **opinião política**.	**DISCRIMINAÇÃO E REGIMES OPRESSIVOS**	0,007	0,214	0,892
P7.17 - A evasão fiscal é ética se o governo me discriminar por causa da minha **religião**, **raça** ou **origem étnica**.		0,071	0,22	0,853
P7.16 - A evasão fiscal seria ética se eu vivesse sob um **regime opressivo** como o "Nazi Germany" ou "Stalinist Russia".		0,049	0,25	0,798

Source: Drafted by the authors

TABLE 10
CRONBACH'S ALPHA | "ALWAYS ETHICAL" COMPOSITE VARIABLE

Case Processing Summary

		N	%
Cases	Valid	438	96,9
	Excluded[a]	14	3,1
	Total	452	100,0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,887	,888	7

Summary Item Statistics

	Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance	N of Items
Item Means	3,955	3,758	4,119	,361	1,096	,016	7
Item Variances	1,140	,884	1,479	,595	1,673	,049	7
Inter-Item Correlations	,532	,379	,738	,358	1,945	,009	7

Source: Drafted by the authors using SPSS software

TABLE 11
CRONBACH'S ALPHA | "WASTE, CORRUPTION AND INJUSTICE"
COMPOSITE VARIABLE

Case Processing Summary

		N	%
Cases	Valid	442	97,8
	Excluded[a]	10	2,2
	Total	452	100,0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,850	,852	8

Summary Item Statistics

	Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance	N of Items
Item Means	3,727	3,425	4,267	,842	1,246	,070	8
Item Variances	1,394	,922	2,153	1,231	2,336	,134	8
Inter-Item Correlations	,419	,283	,617	,335	2,183	,007	8

Source: Drafted by the authors using SPSS software

TABLE 12
CRONBACH'S ALPHA | "DISCRIMINATION AND OPRESSIVE REGIMES"
COMPOSITE VARIABLE

Case Processing Summary

		N	%
Cases	Valid	444	98,2
	Excluded[a]	8	1,8
	Total	452	100,0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,862	,861	3

Summary Item Statistics

	Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance	N of Items
Item Means	3,438	3,405	3,500	,095	1,028	,003	3
Item Variances	1,826	1,754	1,935	,180	1,103	,009	3
Inter-Item Correlations	,674	,590	,775	,185	1,313	,007	3

Source: Drafted by the authors using SPSS software