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TAXPAYERS' ATTITUDE TOWARDS TAX AVOIDANCE: CASE OF THE LITHUANIA

Abstract:

The main aim of the paper is to analyze factors, which might have an impact on taxpayers' attitude towards tax avoidance. As taxes are the main source of state financial recourses it is important to perceive country's taxpayers, their preferences and their opinion, which forms their behavior. Data from a three-year survey of the Lithuania taxpayers (natural persons) were used to evaluate taxpayers' tolerance to tax avoidance, the main reasons of such attitude and the incentives for fairer tax payments. Differences between demographic characteristics groups and changes over time were examined by using chi square and logistic regression methods. The analysis showed declining tolerance for tax avoidance in Lithuania during 2017-2019.

Keywords:

Taxes, Taxpayers' behavior, Tax avoidance

JEL Classification: D10, H26, H29

1. Introduction

The topic of taxation is undoubtedly relevant in both practical and theoretical terms. From the state's point of view, taxes are the main source of funds required for the implementation of its functions and a powerful instrument for the implementation of fiscal policy. For taxpayers - individuals and businesses - taxes are an unavoidable obligation and a reason for the reduction in funds available to meet their needs.

The budgets of the many countries are highly dependent from taxes and countries ability to collect them effectively. When evaluating tax revenue, many authors analyze various economic reasons that determine the collection of tax revenue, but no less important, but often overlooked factor is taxpayers, who are affected by the same economic phenomena, but there are other reasons that determine taxpayers' behavior as well. The clarification of these reasons, their proper management and impact in the desired direction is vital to ensure the efficient collection of tax revenue. Given the wide range of reasons, it is not enough to know common reasons and common measures, but it is necessary to take into account the specificities of each country, including cultural, social and others. For such analysis it is popular to use various surveys, for example European Social Survey, World Social Survey and others. In this paper, for the first time data from annual State Tax Inspectorate Under the Ministry of Finance of the Republic of Lithuania survey is used to perceive Lithuania taxpayers (natural persons).

The main **aim** of this paper is to analyze socio-demographic factors, which might have an impact on taxpayers' attitude towards tax avoidance. The chosen research methods are the analysis and summary of Lithuanian and foreign scientific literature, legal documents, grouping of statistical data, the models of logistic regression.

2. Literature review

Tax collection and the factors determining taxpayers' behavior are widely discussed in the scientific literature. There are many different factors that determine taxpayers' behavior in meeting their tax obligations. They could be divided into five main groups: economic, political-legal, social-psychological, neurological and tax morale (Table 1).

Table 1: Tax behavioral determinants

Group of factors	Factors	Authors
Economical	• Probability of inspection; • Fines; • Tax rates; • Revenues; • etc.	• M. G. Allingham, A. Sandmo (1972); • W.-Z. Lin, C. C. Yang (2001); • C.-G. Park, J. K. Hyun (2003); • J. Clark, L. Friesen, R. A. Muller (2004);
Political-legal	• Complexity of legislation; • Frequent change of rules; • Excessively strict regulation; • etc.	• J. Owens, S. Hamilton (2004); • S. James, C. Alley (2002);

Group of factors	Factors	Authors
Social-psychological	• The public attitude; • Trust in state institutions; • Power of state institutions; • etc.	• M. Orviska, J. Hudson (2002); • V. Braithwaite (2003); • E. Kirchler, E. Hoelzl, I. Wahl (2008);
Neurological	• Emotions; • Hormones (e.g. serotonin); • etc.	• A. Bechara, A. R. Damasio (2005); • T. R. Chorvat (2007); • G. Coricelli, R. J. Dolan, A. Sirigu (2007); • I. Krajbich ir kiti (2009);
Tax morale	• Internal motivation to pay taxes	• B. Torgler, J. Werner (2005); • G. Barone, S. Mocetti (2011); • J. Alm (2011); • V. Rutkauskas (2016);

Source: composed by the authors on the basis of indicated sources

Organisation for Economic Co-operation and Development (OECD, 2010) divides six determinants of taxpayers' behavior: a) deterrence; b) norms; c) opportunities; d) fairness; e) economic factors; f) interactions.

Deterrence is usually defined as audits, probability of inspection and the amount of fine. These measures are widely used by tax administrators all over the world in order to impact tax compliance positively. On the other hand, measures of deterrence in promotion fair behavior of taxpayers could be not very effective (Ariel, 2012). Increasing the use of deterrent measures or tightening could not guarantee better tax compliance. The deterrent effect could be either very weak or could provoke the opposite reaction: after an audit, the taxpayer may begin to avoid to pay taxes in belief that there will be no re-inspection or may try to recover the "loss".

In terms of norms, they could be divided into personal and social. Both types of norms strongly influence tax compliance. M. Wenzel (2005) argues that taxpayers pay their taxes because they believe it is fair behavior, but not because they are afraid of being punished. However, personal norms and beliefs are hard to influence. Efforts could be made to educate taxpayers by emphasizing the importance of complying with tax obligations and creating positive personal norms, but it is also important to strengthen existing positive norms. The impact of personal norms has long-term benefits for tax compliance. Social norms affect the behavior of the taxpayer, because people strive to follow social norms, personal choices are influenced by the behavior of others. If it is generally understood that tax avoidance is prohibited and most people comply with tax obligations, then person will be less inclined to avoid taxes. If people think that tax avoidance is more prevalent that it actually is, then correcting the wrong opinion reinforces better compliance.

Tax administrations try to limit the opportunities to avoid paying taxes and to make tax compliance easier, by introducing electronic services, gathering more information from third parties and etc.

Fairness could be one of the key factors for tax compliance. It could be divided into three groups: distributive fairness (an understanding that the government properly spends collected taxes); procedural fairness (an understanding that the tax administrator follows appropriate procedures in dealing with taxpayers; retributive fairness (an understanding that the tax administrator is taking the right measures for non-compliance with tax obligations). K. Murphy (2004) notes that taxpayers' distrust of tax administration increases tax avoidance. Though ensuring procedural and retributive fairness highly depends on tax administrations, but the sense of fairness in distribution is created by the entire public sector, especially decision-makers.

An economic environment also affect taxpayers' decisions. C. G. Park and J. K. Hyun (2003), examining the economic reasons for tax non-compliance, came to different conclusions. Firstly, the fulfilment of taxpayers' tax obligations does not depend on the level of received income. Secondly, both the tax inspection and the amount of the possible fine have a significant effect on the tax compliance (the amount of the was an even more significant factor).

OECD (2010) notes that interactions of different measures could be an interesting and promising area of further researches. Tax administrators should keep a balance between various measures and ensure fairness.

One of the areas of research on taxpayers' behavior is based on various surveys (Table 2). Taxpayers' behavior is explained by political attitudes, corruption scale assessment as well as different Socio-demographic characteristics as gender, age, education, religion and others.

Table 2: Socio-demographic characteristics in taxpayers' behavior researches

Authors	Data	Factors	Main findings
I. Lago-Penas, S. Lago-Penas (2010)	Individual data from the second wave of the European Social Survey	Socio-demographic characteristics: • Gender • Age • Education • Religion Other (Personal financial experiences, Political attitudes, International fiscal redistribution and etc.)	**Tax morale is positively related to age, religion,** income, satisfaction with democracy, trust in politicians.
V. Rutkauskas, V. Ivaškaitė-Tamošiūnienė (2015)	European Social Survey and World Social Survey data for Baltic States	• Age • Income • Religion • Gender • National pride • Corruption justification • Trust in government	• The most important factor – Trust in government; • Age is one of the most important factors – Younger residents tend to be more supportive of tax avoidance.

Authors	Data	Factors	Main findings
E. Hofmann, M. Voracek, Ch. Bock, E. Kirchler (2017)	Meta-analysis of survey studies in 111 countries	• Age • Gender • Education • Income	Socio-demographic characteristics have little impact on tax compliance. Age and gender are more significant than others variables.

Source: composed by the authors on the basis of indicated sources

To summarize, it is important to note, that there are many different factors, which determine taxpayers' attitude towards tax avoidance and their behavior in tax compliance. Some researches give an opportunity to compare different countries, others let evaluate changes over time.

3. Methodology

The main **data source** – a three-year (2017-2019) Taxpayers' awareness and shadow economy interview of the Lithuania taxpayers (natural persons), which was carried out on State Tax Inspectorate Under the Ministry of Finance of the Republic of Lithuania initiative.

The interviews were made by market and public opinion research companies, which had to use a multistage stratified probabilistic sampling method to select respondents. This selection method involves 3 steps and ensures that all 18 years old and older residents of Lithuania have an equal opportunity to enter the survey and express their opinion (Table 3).

Table 3: Sample information

	2017	2018	2019
Sample of interview	1515	1507	1512
A sample was used for this analysis[1]	**1307**	**1305**	**1263**
Margin of error (with Confidence level – 95 percent)	**3 percent**		
Number of adults in Lithuania population at the beginning of the year (data from Statistics Lithuania)	2 337 516	2 305 886	2 294 609

Source: composed by the authors

For this analysis 6 main questions were selected (Table 4).

Table 4: Selected main questions

Variable	Question	Answers
C_Tolerance	To what extent do you tend to justify tax avoidance or various manipulations in order to illegally pay less tax to the state?	1 – I do not justify at all 2 - Rather, I do not justify 3 - I do not justify rather than justify

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[1] Only those respondents who answered all the questions analyzed in this paper were selected from whole sample of interview (Table 4 and Table 5).

Variable	Question	Answers
E_Tolerance	To what extent do you tend to justify **enterprise** tax avoidance or various manipulations in order to illegally pay less tax to the state?	4 - I justify rather than do not justify 5 - Rather, I justify 6 - I fully justify
P_Tolerance	To what extent do you tend to justify **person** tax avoidance or various manipulations in order to illegally pay less tax to the state?	
Reason	In your opinion, for what reasons do people tend to justify or partially justify non-payment of taxes? There are 3 possible answers.	1. Due to unfair tax policy 2. Due to the difficult financial situation of economic operators 3. Due to lack of knowledge, misunderstanding, ignorance 4. Due to inefficient and / or incorrect allocation / use of public resources 5. Due to corruption, opacity 6. For personal gain 7. Other (please specify)
Incentive	What do you think would be the most incentive to pay taxes more fairly? There are 3 possible answers.	1. Tax reduction 2. Education / public literacy 3. Stricter control measures 4. Transparency, reduction of corruption 5. Allowing residents to reduce their taxable income (for example, by tuition fees) 6. General declaration of income and assets 7. Efficient and / or equitable distribution of taxes 8. Tightening penalties for tax avoidance 9. Other (please specify)
Cash_receipt	If you could choose which option is more acceptable to you:	1. Pay the full price of the goods and receive the purchase documents (cash receipt) 2. Pay a lower price in the amount of the tax, but do not receive the purchase documents (cash receipt)

Source: Taxpayers' awareness and shadow economy interview questionnaire

For logistic regression analysis 7 socio-demographic explanatory variables were selected (Table 5).

Table 5: Selected socio-demographic variables

Variable	Options
Gender	1 - man

Variable	Options
	2 - woman
Age_group_1	18-25 26-35 36-45 46-55 56-
Education_C	1 – University education and Unfinished university education 2 – College / not university 3 – Secondary education and Unfinished secondary education
Income_person_C	Income for one person at household: 1 – less than 250 euros 2 – 251-350 euros 3 – 351-750 euros 4 – 751-1350 euros 5 – more than 1350 euros
Marital status	1 – not married 2 – married 3 – other
Residence_C	1 – Major cities 2 – Other city / district center 3 – Village
Dwelling	1 – owned dwelling 2 – rented dwelling

Source: Taxpayers' awareness and shadow economy interview questionnaire

Methods: Various methods were used to reveal different aspects of taxpayers' attitude towards tax avoidance.

Frequency tables - were used to identify trends and patterns.

Chi-square test of independence (homogeneity) – was used to test the hypothesis that the variables are statistically significantly related. Used for categorical variables. Hypotheses in the general case:

H$_0$: variables are independent

H$_1$: variables are not dependent

H$_0$ is rejected (variables are statistically significantly related) if p-value <0.05.

Logistic regression – was used to determine factors influencing justification of tax avoidance:

Dependent variable - Justification of tax avoidance (0 – Do not Justify; 1 – Justify);

Independent variables – socio-demographic variables.

The initial equation of the model:

$$\frac{P \ (Tolerance \ = 0 \ (Not \ Justify))}{P \ (Tolerance \ = 1 \ (Justify))} =$$

$$= exp\{C + b1 * gender + b2 * age \ group + b3 * education + b4$$
$$* income \ per \ person + b5 * marital \ status + b6 * residence + b7$$
$$* dwelling$$

(1)

Calculations were performed using Microsoft Office Excel and SAS University Edition.

4. Analysis and results

4.1. Attitude towards different avoiders: natural persons and legal entities

In survey taxpayers' attitude towards tax avoidance were assessed by asking three different questions. Firstly, respondents were asked to evaluate their common justification ("To what extent do you tend to justify tax avoidance or various manipulations in order to illegally pay less tax to the state?"). In the next two questions the situation was specified and was asked about justification of legal entities and natural persons tax avoidance.

Figure 1: Justification of tax avoidance
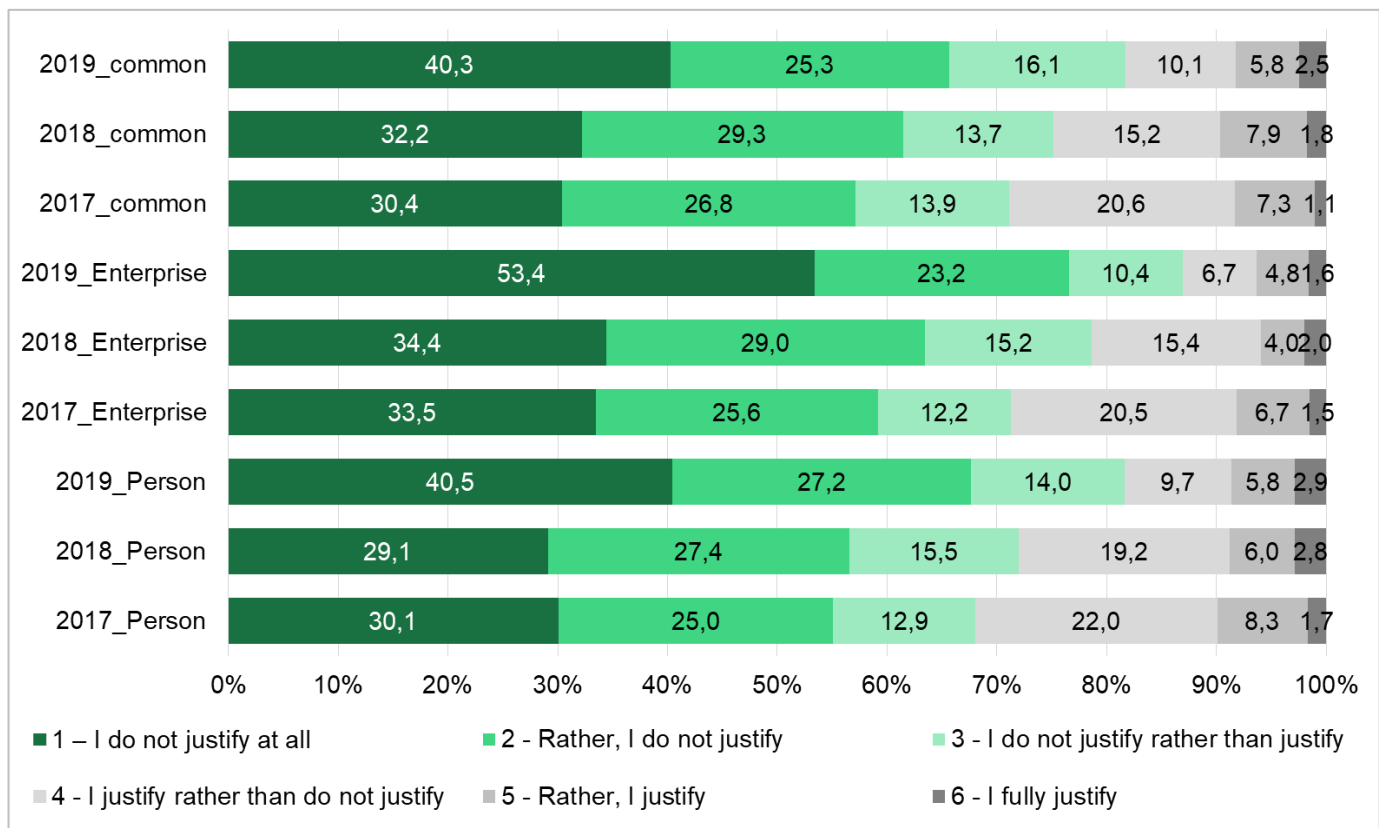
Source: Taxpayers' awareness and shadow economy interview data

Assessing the most categorical answers, it can be said that the share of taxpayers who do not fully justify tax avoidance has increased considerable (from 30.4 percent in 2017 to 40.3 percent

in 2019) (Figure 1). The share of respondents who fully justify tax avoidance increased from 1.1 percent in 2017 to 2.5 percent in 2019.

Combining answers into two groups: tax avoidance is justified ("I justify rather than do not justify", "Rather, I justify" and "I fully justify") and tax avoidance is not justified ("I do not justify rather than justify", "Rather, I do not justify" and "I do not justify at all") shows an improving trend (justification decreased from 28.9 percent in 2017 to 18.3 percent in 2019).

The same improving trend is in justification of tax avoidance carried out by legal entities (Enterprise) and natural persons (Person). In comparison of these two groups of tax avoiders, respondents remain more tolerant to natural persons than legal entities.

4.2. Reasons of justification

The respondents of the survey were asked to identify up to three reasons why people tend to justify or partly justify non-payment of taxes.

Figure 2: Reasons of justification
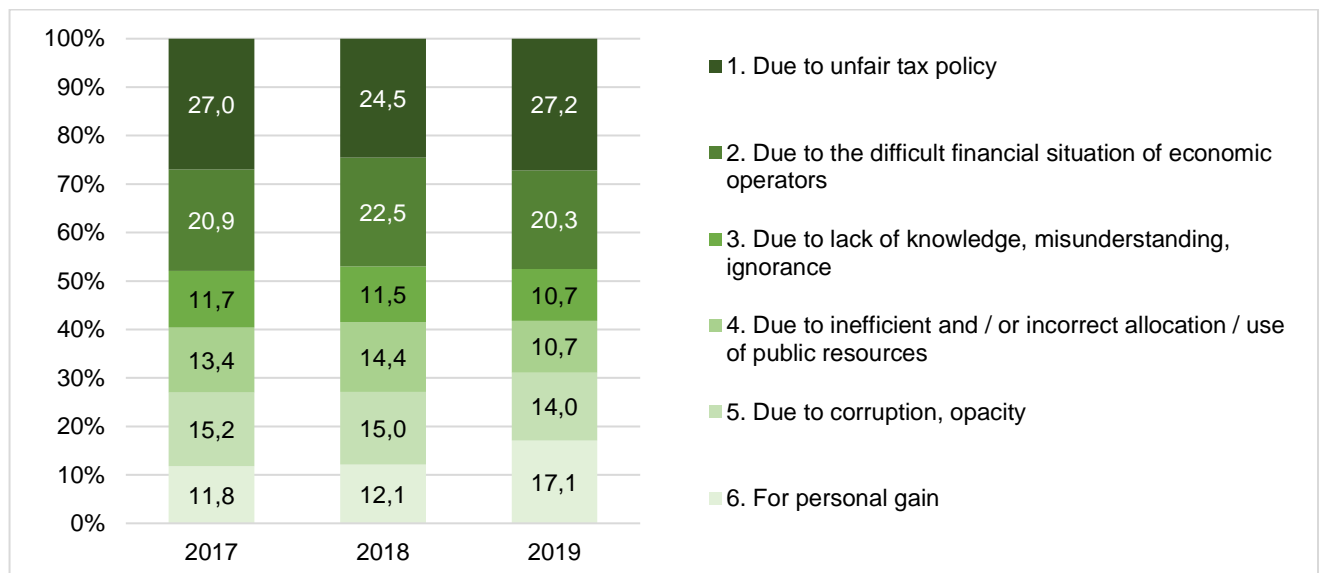
Source: Taxpayers' awareness and shadow economy interview data

The most popular reason remained the same throughout all three years – "Due to unfair tax policy" (Figure 2). The second most popular reason – "Due to difficult financial situation of economic operators". In 2019 more often than earlier respondents mentioned "Personal gain" as a reason.

Figure 3: Number of reasons
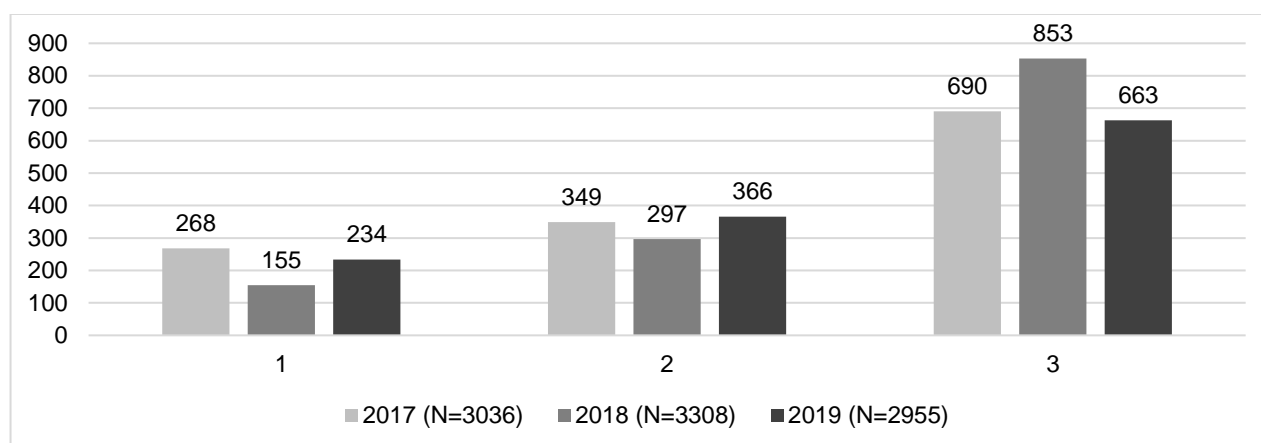
Source: Own adjustments based on Taxpayers' awareness and shadow economy interview data

Each year more than a half respondent's selected three reasons in order to explain justification of tax avoidance. The biggest part of respondents evaluated justification of tax avoidance as more complicated phenomenon in 2018 when even 65.4 percent identified three reasons (Figure 3).

For deeper reasons analysis the most popular sets were evaluated (Table 6). Every year about 40 different sets of the reasons were chose. The most popular set of reasons in 2017 and 2018 consists of "1. Unfair tax policy", "2. Difficult financial situation of economic operators" and "4. Inefficient and / or incorrect allocation / use of public resources". This set was chose by 7.5 percent of respondents in 2017 and 8.2 percent in 2018. In 2019 this set took the 8th place and was chose by 4.5 percent of respondents. The most popular set of reasons in 2019 was quite similar to the previous one, but instead of "4. Inefficient and / or incorrect allocation / use of public resources" respondents indicate "6. Personal gain". This set of reasons was also quite often mentioned in 2017 and in 2018 (accordingly by 4.1 percent and 4.9 percent of respondents).

Table 6: The most popular sets of reasons

	2017			2018			2019		
Number of different set	40			39			41		
The most popular choices	Set	Frequency	Percent	Set	Frequency	Percent	Set	Frequency	Percent
1	124	98	7,5	124	107	8,2	126	92	7,3
2	1	93	7,1	123	95	7,3	125	79	6,3
3	123	85	6,5	125	86	6,6	6	69	5,5
4	2	85	6,5	145	81	6,2	123	67	5,3
5	156	78	6,0	126	64	4,9	12	66	5,2
6	12	73	5,6	12	61	4,7	145	64	5,1
7	125	57	4,4	1	53	4,1	1	63	5,0
8	145	56	4,3	134	53	4,1	124	57	4,5
9	134	55	4,2	256	53	4,1	16	57	4,5
10	126	54	4,1	26	48	3,7	156	54	4,3
Most popular sets in total:		734	56,2		701	53,7		668	52,9
All sets:		1307	100		1305	100		1263	100

Source: Own calculations based on Taxpayers' awareness and shadow economy interview data

According to the responsibility of the reasons they could be divided into two groups: created by state ("1. Unfair tax policy", "4. Inefficient and / or incorrect allocation / use of public resources", "5. Corruption, opacity") and taxpayer's owned reasons ("2. Difficult financial situation of economic operators", "3. Lack of knowledge, misunderstanding, ignorance" and "6. Personal gain"). The first group of reasons were mentioned together quite often (by 4.3 percent of respondents in 2017, 6.2 percent in 2018 and 5.1 percent in 2019). While the second group of reasons wasn't mentioned as one of the top ten of the most popular set. In 2017 there was just 1 respondent, who chose this set, in 2018 – 12 respondents (or 0.9 percent) and in 2019 – 20 respondents (or 1.6 percent). Thus, we can state, that residents of Lithuania are more likely to explain justification of tax avoidance as phenomenon, which is caused by state than as a result of factors more dependent on the person.

Table 7: Relationship between justification and reasons

| Reason	Common justification 2017						Common justification 2018						Common justification 2019					
	Proportion of respondents	Not justify		Justify		Chi - square		Proportion of respondents	Not justify		Justify		Chi - square		Proportion of respondents	Not justify		Justify		Chi - square	
		Frequency	Percent	Frequency	Percent	Value	Prob.		Frequency	Percent	Frequency	Percent	Value	Prob.		Frequency	Percent	Frequency	Percent	Value	Prob.
1	63%	598	64%	221	58%	4,004	0,0454	62%	613	62%	198	61%	0,196	0,6579	64%	647	63%	158	68%	2,657	0,1031
2	49%	433	47%	201	53%	4,637	0,0313	57%	559	57%	185	57%	0,001	0,9708	47%	492	48%	107	46%	0,139	0,7095
3	27%	230	25%	126	33%	9,97	0,0016	29%	294	30%	88	27%	0,928	0,3353	25%	279	27%	38	16%	11,25	0,0008
4	31%	230	28%	144	38%	11,72	0,0006	36%	352	36%	124	38%	0,6	0,4384	25%	252	24%	63	27%	0,821	0,3648
5	35%	346	37%	116	31%	5,054	0,0246	38%	384	39%	112	35%	2,164	0,1412	33%	341	33%	74	32%	0,087	0,7681
6	27%	272	29%	85	22%	6,243	0,0125	31%	286	29%	113	35%	3,758	0,0526	40%	429	42%	75	32%	6,521	0,0107

Source: Own calculations based on Taxpayers' awareness and shadow economy interview data

To compare relationship between justification of tax avoidance and listed reasons, chi-square test were used (Table 7). Analysis showed that in 2017 choices of reasons and justification of tax avoidance is statistically significant for all reasons in contrast to 2018, when no statistically significant differences were found. In 2019, just difference between people who tend to justify tax avoidance and not justifying this activity and selected third and sixth reason were statistically significant. Table 7 shows that 63 percent of all respondents chose first reason ("Unfair tax policy") in 2017 to explain tax avoidance. This reason was chose by 64 percent of respondents who not justify tax avoidance and by 58 percent of respondents who justify this phenomena and this difference is statistically significant (<0.05).

4.3. Incentives to pay taxes more fairly

The respondents of the survey were asked to identify up to three incentives of which implementation could encourage to pay taxes more fairly.

Figure 4: Incentives to pay taxes more fairly
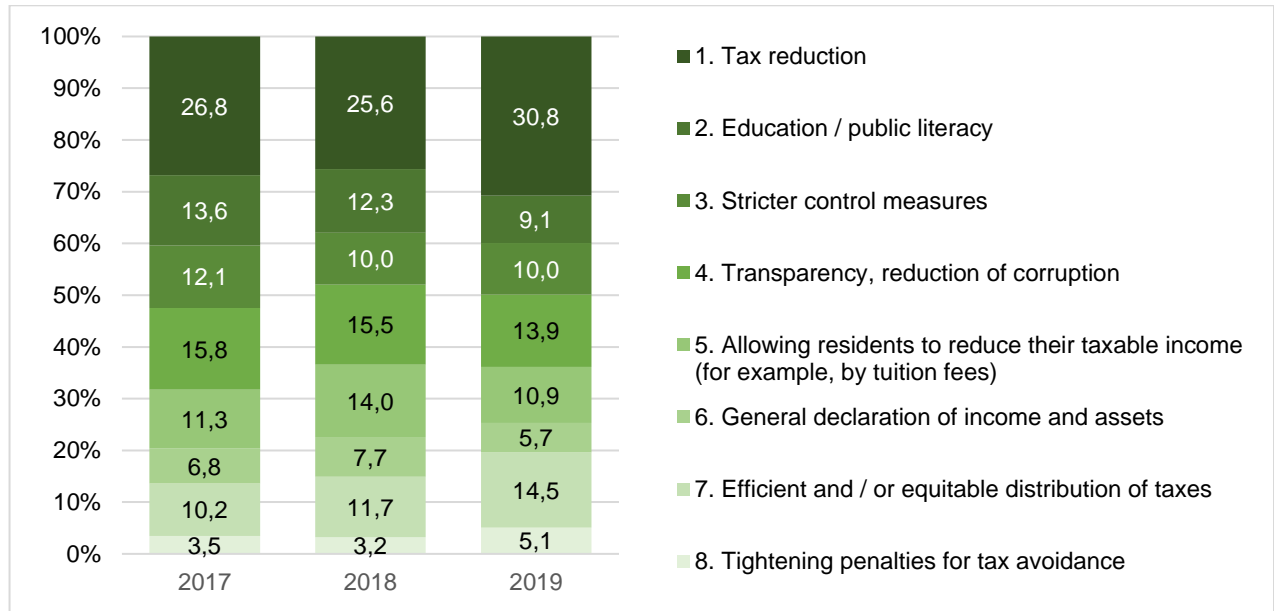
Source: Taxpayers' awareness and shadow economy interview data

The most popular incentive remained the same throughout all three years – "Tax reduction" (Figure 4). The second most popular reason in 2017 and 2018 was "Transparency, reduction of corruption" and in 2019 more popular was "Efficient and / or equitable distribution of taxes". The most unpopular incentive in all years was "Tightening penalties for tax avoidance".

**Figure 5: Number of incentives**
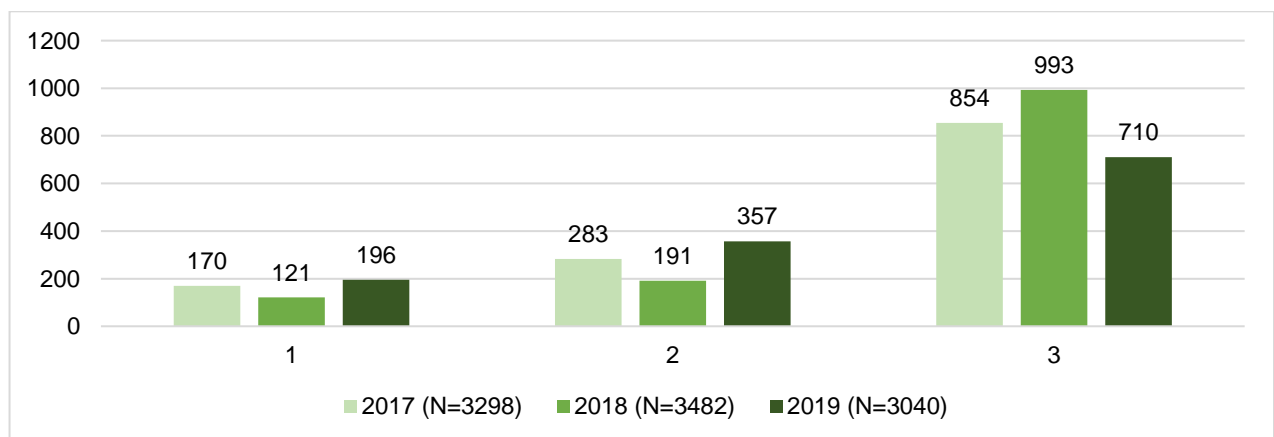
Source: Own adjustments based on Taxpayers' awareness and shadow economy interview data

Each year more than a half respondent selected three incentives which could increase tax compliance (Figure 5). As in reasons case, the biggest part of respondents evaluated tax avoidance as more complicated phenomenon in 2018 when even 76.1 percent identified three incentives.

4.4. Justification of tax avoidance and cash receipt dilemma

In the survey respondents were asked to choose one of two options: 1. Pay the full price of the goods and receive the purchase documents (cash receipt) or 2. Pay a lower price in the amount of the tax, but do not receive the purchase documents (cash receipt). In 2017 more respondents chose to pay a lower price and do not ask a cash receipt (Figure 6), but next year this part of respondents significantly decreased and in 2019 there were 65.6 percent of respondents who were ready to pay full price. This change may have been affected by cash receipt lottery, which was introduced in November, 2017 and lasted for almost two years (it was finished in October, 2019).

Figure 6: With and without cash receipt
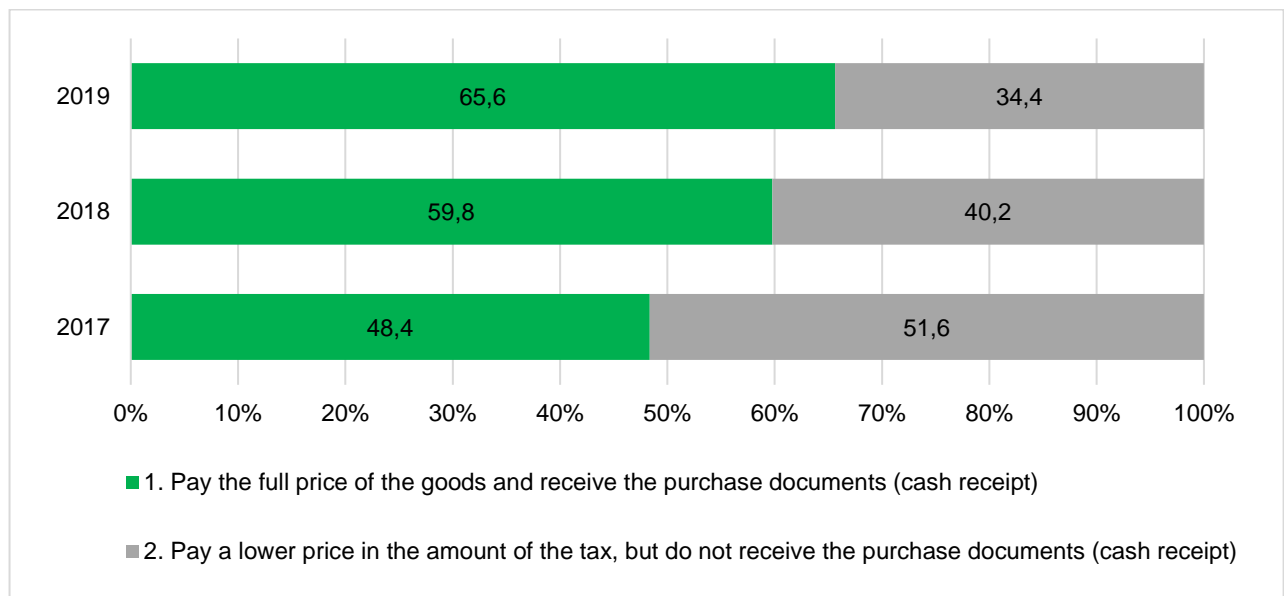
Source: Taxpayers' awareness and shadow economy interview data

To evaluate a connection between justification of tax avoidance and decision to pay full price or lower price in the amount of tax, chi-square test were adapted (Table 8). The results shows that each year people who do not justify tax avoidance increasingly prefer to confirm this with their choices (to pay full price and tax a cash receipt; 51.9 percent in 2017 and 73.5 percent in 2019). On the other side, people, who justify tax avoidance are more likely to pay a lower price without cash receipt, when they have such possibility. The values if chi-square test confirms that these differences are statistically significant.

Table 8: Connection between justification and decision to (not) pay full price

Justification of tax avoidance		Cash_receipt	
		With	**Without**
2017	Do not Justify	51,9%	48,1%
	Justify	39,7%	60,3%
Chi-Square	statistically significant	Value	Probability
		16.0165	<.0001
2018	Do not Justify	63,2%	36,8%
	Justify	49,4%	50,6%
Chi-Square	statistically significant	Value	Probability
		19.3405	<.0001
2019	Do not Justify	73,5%	26,6%
	Justify	30,7%	69,3%
Chi-Square	statistically significant	Value	Probability
		152.6809	<.0001

Source: Own calculations based on Taxpayers' awareness and shadow economy interview data

4.5. Justification of tax avoidance and socio-demographic characteristics

Table 9: Justification and socio-demographic characteristics

Socio-demographic variable	Justification 2017			Chi-square		Justification 2018			Chi-square		Justification 2019			Chi-square	
	Total	Not justify	Justify	Value	Prob.	Total	Not justify	Justify	Value	Prob.	Total	Not justify	Justify	Value	Prob.
Gender															
1 - man	47%	49%	43%	3,1747	0,0748	48%	47%	51%	2,0186	0,1554	39%	38%	46%	5,6201	0,0178
2 - woman	53%	51%	57%			52%	53%	49%			61%	62%	54%		
Age_group_1															
18-25	12%	13%	11%	3,0214	0,5542	12%	12%	12%	2,5529	0,6352	8%	7%	11%	8,7309	0,0682
26-35	19%	19%	17%			19%	20%	16%			17%	17%	18%		
36-45	18%	18%	18%			19%	19%	18%			16%	15%	17%		
46-55	22%	21%	24%			21%	21%	23%			25%	25%	27%		
56-	29%	29%	30%			29%	29%	31%			34%	36%	27%		
Education_C															
1 – University education and Unfinished university education	20%	22%	16%	10,5363	0,0052	23%	23%	22%	6,5937	0,037	29%	30%	25%	1,9625	0,3748
2 – College / not university	27%	28%	24%			28%	30%	23%			22%	21%	22%		
3 – Secondary education and Unfinished secondary education	53%	50%	60%			49%	48%	55%			50%	49%	53%		

Socio-demographic variable	Justification 2017					Justification 2018					Justification 2019				
	Total	Not justify	Justify	Chi-square Value	Chi-square Prob.	Total	Not justify	Justify	Chi-square Value	Chi-square Prob.	Total	Not justify	Justify	Chi-square Value	Chi-square Prob.
Income_person_C															
1 – less than 250 euros	15%	17%	10%	19,7094	0,0006	11%	11%	11%	4,8854	0,2993	14%	14%	15%	2,7976	0,5922
2 – 251-350 euros	28%	29%	26%			26%	24%	30%			22%	22%	20%		
3 – 351-750 euros	38%	35%	47%			39%	40%	38%			53%	52%	56%		
4 – 751-1350 euros	13%	14%	11%			15%	16%	15%			10%	10%	7%		
5 – more than 1350 euros	5%	5%	6%			9%	9%	7%			2%	2%	2%		
Marital_status															
1 – not married	22%	22%	20%	1,0599	0,5886	22%	21%	24%	1,6979	0,4279	17%	17%	19%	1,2604	0,5325
2 – married	63%	62%	65%			64%	65%	61%			62%	62%	64%		
3 – other	16%	16%	15%			14%	14%	15%			20%	21%	18%		
Residence_C															
1 – Major cities	40%	42%	36%	11,1091	0,0039	41%	42%	39%	1,044	0,5933	41%	39%	48%	7,1635	0,0278
2 – Other city / district center	29%	30%	27%			29%	29%	29%			26%	27%	22%		
3 – Village	31%	28%	37%			30%	29%	32%			33%	34%	29%		
Dwelling															
1 – owned dwelling	86%	85%	90%	5,1341	0,0235	86%	86%	86%	0,096	0,7567	87%	88%	82%	6,7575	0,0093
2 – rented dwelling	14%	15%	10%			14%	14%	14%			13%	12%	18%		

Source: Own calculations based on Taxpayers' awareness and shadow economy interview data

In order to evaluate socio-demographic characteristics differences between respondents who have different approach to tax avoidance, the structure of each socio-demographic variable were compared in both groups of natural persons according to justification of tax avoidance (Table 9). Using Chi-square test was found that there are statistically significant difference between justification of tax avoidance and structure of some socio-demographic variables. However, the results showed that there is no strong stability in these differences – none of socio-demographic variable wasn't statistically significant in all analysed year. Age group and marital status were not statistically significant throughout the period. Distribution of gender was statistically significant just in 2019, when the largest part of respondents compared to previous years were women. Between justifying tax avoidance were 54 percent of women and 46 percent of men, while between respondents who does not justify tax avoidance were 62 percent of women and 38 percent of men. In terms of education, which was statistically significant in 2017 and 2018, in group of natural persons, who justify tax avoidance were more respondents just with Secondary education and Unfinished secondary education. So, there is a link between higher education and justification of tax compliance. The situation with residence, which is statistically significant in 2017 and 2019, is slightly different. In 2017 the bigger part of respondents, who did not justify tax avoidance lived in major cities (42 percent of respondent who did not justify lived in major cities

and just 36 percent of respondents who justified lived in major cities), while in 2019 the proportion by residence of respondents who justified tax avoidance has changed significantly and 48 percent of justifying people lived in major cities).

All 7 socio-demographic characteristics as explanatory variables were included into the logistic regression equation. The results showed that just for 2017 it is possible to create a reliable logistic model with these variables without any corrections. Logistic regression for 2018 ran out of significant variables and in 2019 ratio between justification was insufficient for this analysis (tax avoidance was justified by 18,3 percent and not justified by 81,7 percent, while the good ratio should be at least 20 and 80 percent). For further analysis various regroupings of variables could be made (for 2018) or multivariate logistic regression model with six values of the dependent variable could be tested (for 2019). While in this paper, the results of the 2017 analysis will be explained in more detail.

In 2017 model dependent variable is distributed as follows: "Justify" (1) – 28,9 percent and "Not justify" (0) – 71,1 percent. After estimating the distribution of the values of the categorical variables and the dependent variable, no small groups were observed. For logistic regression model *(1)* equitation was used.

Table 10: Model statistics after elimination of insignificant variables (age group, marital status and dwelling)

Model Fit Statistics						
Criterion	Intercept Only	Intercept and Covariates				
AIC	1574.176	1543.441				
SC	1579.352	1569.319				
-2 Log L	1572.176	1533.441				
Testing Global Null Hypothesis: BETA=0						
Test	Chi-Square	DF	Pr > ChiSq			
Likelihood Ratio	38.7347	4	<.0001			
Score	37.8668	4	<.0001			
Wald	36.7764	4	<.0001			
Analysis of Maximum Likelihood Estimates						
Parameter			DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept			1	2.7998	0.3592	60.7608	<.0001
Gender	1		1	0.2532	0.1251	4.0974	0.0430
Education_C			1	-0.3307	0.0866	14.5982	0.0001
Income_person_C			1	-0.2778	0.0643	18.6760	<.0001
Residence_C			1	-0.2517	0.0762	10.8957	0.0010

Source: Own calculations based on Taxpayers' awareness and shadow economy interview data

All Model Fit Statistics is lower with covariates and Likelihood Ration p value is <.0001, so this model is suitable for this data (Table 10).

The final equation of the model:

$$\frac{P\ (Tolerance\ = 0\ (Not\ Justify))}{P\ (Tolerance\ = 1\ (Justify))} =$$
$$= exp\{2.8 + 0.25 * gender - 0.33 * education - 0.28$$
$$* income\ per\ person - 0.25 * residence \quad (2)$$

When expression in brackets grew (2), at the same time, the probability that natural person choose to not justify tax avoidance. The estimated rate of gender is positive, so if respondent is a man, it increases the likelihood that it will not justify. The estimated rate of education, income per person an residence are negative, so depending on the coding in Table 5, the probability that respondent will not justify tax avoidance increases if person has high education level and lives in major city, but has lower income.

5. Conclusions

Various analysis of different factors determining taxpayers' behavior are quite common among scientists. One of the possible data sources are various survey of natural persons. In this paper, for the first time data from annual State Tax Inspectorate Under the Ministry of Finance of the Republic of Lithuania survey is used to perceive Lithuania taxpayers (natural persons).

The analysis showed declining tolerance for tax avoidance in Lithuania during 2017-2019. People are remain more tolerant to natural persons than legal entities in terms of tax avoidance.

Stating reasons why it is possible to justify tax avoidance, respondents exclude "Unfair tax policy" and "Difficult financial situation of economic operators". Stating incentives of which implementation could encourage to pay taxes more fairly respondents indicate "Tax reduction", "Transparency, reduction of corruption" and "Efficient and / or equitable distribution of taxes", while the most unpopular incentive would be „Tightening penalties for tax avoidance". So it could be said, that justification of tax avoidance highly depend on government actions.

There is a significant relationship between (not) justification of tax avoidance and the choice to (not) take a cash receipt.

The analysis of justification of tax avoidance and socio-demographic characteristics dependency showed that there is not constant connections and in one year specific socio-demographic variable could be significant, while in next year it became insignificant.

The next directions of analysis of taxpayers' attitude towards tax avoidance may include: multivariate logistic regression models, other socio-demographic characteristics of the survey or some modifications of variables, data from 2020 survey. This could help to get more reliable results and to see new trends.

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