

Taxpayers' attitudes toward tax compliance in the Slovenian tax system: differences according to gender, income level and size of settlement

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Abstract

This study investigates the relationship between certain economic and psychological factors and demographic characteristics of Slovene taxpayers, such as gender, income level and size of settlement as it is becoming important for a country's tax compliance framework to align with the tax recommendations of global institutions. The results show some gender differences, with males being less likely to feel guilty or bad if taxes are not paid in full than females, whereas females tend to have the opinion that working for cash-in-hand payment without paying tax is not a trivial offence. Taxpayers with low incomes tend to agree that tax evasion is morally acceptable if tax rates are too high. Taxpayers from rural settlements exhibit a higher tendency to feel morally obligated to pay their taxes than taxpayers from urban settlements. The findings indicate that the vast majority of taxpayers feel morally obligated to pay their taxes.

Keywords: tax system, tax compliance, economic and psychological factors, gender, settlement size, income level

1 INTRODUCTION

Global institutions (UN, 2015; OECD, 2016; WTO, 2023) are exerting significant pressure on governments to achieve the sustainable development goals, enhance revenues, and strengthen tax compliance, which is why gaining a better understanding of taxpayers' behaviour has become increasingly important for alignment with the recommendations of global institutions. One way to improve a country's tax compliance framework is by analysing it from various perspectives. Individual taxpayers exhibit diverse motives, influenced by economic and psychological factors, for either complying with the rules or else engaging in tax evasion. This behaviour is also impacted by gender, income level, settlement size, age, religion, education, employment status, sector of work and other factors. The research question in this paper pertains to understanding whether taxpayers' attitudes towards the economic and psychological factors of tax compliance in Slovene tax system differ according to their gender, and whether income level and size of settlement impact compliance factors.

In the context of its Tax and Gender Equality Policy, OECD (2022) urged countries to take steps to analyse the impact of gender on tax compliance measures as 70% of the countries in their research stated that they do not collect gender-disaggregated data. Slovenia belongs among those countries in which gender-disaggregated data are available from tax returns for use in policy analysis, but it does not practice gender budgeting and has no access to gender disaggregated non-tax data available for policy analysis or detailed micro data on male and female incomes (OECD, 2022). Gender equality constitutes a core value within the European Union (Stanimirović and Klun, 2021). This fundamental value should be reflected in taxation. Countries' public policies should be designed in such a way as to take into account gender equality (Stanimirović and Klun, 2021). Taking this argument into consideration, it is not clear whether the proposed OECD measures in the 2022

report on gender equality would enhance the efficiency and effectiveness of a country's tax system, especially if the system is already gender tax neutral as per existing tax laws in Slovenia. Still, there is some empirical evidence confirming that the country has taken the first steps in gender-responsive budgeting via guidelines and recommendations (Stanimirović and Klun, 2021). However, the impact of gender on tax compliance measures has been confirmed in various studies and reports. Some studies confirm higher female levels of tax compliance globally (Hofmann et al., 2017; OECD, 2019a; D'Attoma, Volintiru and Steinmo, 2017; D'Attoma, Volintiru and Malézieux, 2020; Kangave, Waiswa and Sebaggala, 2021), while others highlighted higher male tax compliance (Grosh and Rau, 2017; Alm and Malezieux, 2021). There are also studies that have not identified any significant gender impact (Vincent, Stevenson and Owolabi, 2023; Nichita et al., 2019).

Next to gender, previous research proposed income level as a significant determinant influencing tax evasion and therefore a robust predictor of tax compliance, occasionally contingent on the geographic region (McGee, 2012; Hoffman et al., 2017; Khalil and Yusuf, 2022). Psychological research found that not just level but also the origin of income (earned or endowed) affects taxpayers' decision making and produces different behaviour (Durham, Manly and Ritsema, 2014). Higher-income taxpayers can exhibit attitudes toward the probability of audits and punishments, fairness, trust in the tax system, tax evasion, and public services that are different from those of low-income taxpayers. Elderly taxpayers and those with low income disproportionately engage in undeclared work (Levenko and Staehr, 2021). Low-income taxpayers tend to exhibit lower tax compliance than high-income taxpayers, and taxpayers with higher incomes are considered more prone to tax evasion than those with lower incomes (Hofmann et al., 2017). The investigations of income level impact on tax compliance in previous studies showed mixed results, with both a positive (Kirchler, 2007; Kirchler et al., 2007) and a negative relationship (Alm and McKee, 2006) being adduced.

Even though there has been some empirical research measuring the impact of urban or rural business location on tax compliance (Dissanayake and Premaratna, 2020; Williams, 2020), there is not sufficient research in measuring the impact of settlement on individual taxpayers with respect to tax compliance. Settlement in rural area can provide stronger social bonds and communal pressure might contribute to increased tax compliance, while in urban areas, settlements with enhanced access to tax-related information and resources, can foster a better understanding of tax regulations and consequently encourage tax compliance. The importance of this demographic factor is still not clear, but some argue (Devos, 2008) that taxpayer location has no impact on compliance.

Our study discusses the impact of three factors (gender, income level, and settlement size) that have already been addressed in previous studies. However, their combined effect on tax compliance decisions has not been examined, especially not among Slovenian taxpayers. Thus, the aim of this research is to examine the impact

of taxpayers' attitudes as the relationships between socio-demographic factors such as gender, income level, settlement size, and tax compliance. The results can provide support for policymakers when enhancing tax compliance policies and adjusting tools based on the impact of these three factors. Furthermore, they can be beneficial as support for the governments' regulatory impact assessment (RIA) of regulations and non-regulatory alternatives. If tax authorities understand the motives behind tax compliance, they will also understand and easier predict the reasons for evasion. This article makes a valuable contribution to the tax compliance literature by analysing the attitudes and influences of gender, income level, and settlement size on both the economic and psychological factors affecting taxpayers. This way a better understanding of taxpayer motivation and reasoning can be achieved.

This paper consists of six parts. After the introduction is the second section, which summarizes the theoretical literature about tax compliance factors. The third section presents an overview of empirical research, detailing the methodological aspects used in this paper and variable descriptions. In the fourth part, discussion of the main results is presented. The last section contains concluding remarks along with the potential for future research.

2 THEORETICAL BACKGROUND AND RESEARCH HYPOTHESES 2.1 TAX COMPLINACE THEORIES

Tax compliance means that taxpayers fully disclose their income and meet all tax obligations by paying the required taxes as required by law (Alm, 1991). There are two basic approaches to tax compliance; economic approach also called the Allingham and Sandmo model, the deterrence model, the expected utility theory, or the rational choice theory and the behavioural approach also called the moral sentiments theory. The behavioural approach states that taxpayers' tax compliance behaviour is influenced not only by financial factors but also by non-economic variables such as trust in government, tax morality, perception of tax justice and even by religiousness. Tax compliance is a multifaceted topic, and researchers often define it differently according to the specific nature and scope of their studies.

The basic theoretical model used in much research on tax compliance originates from Becker's work in 1968, particularly his economics-of-crime model. The conventional conclusion drawn from this model is that individuals fulfil their tax obligations primarily out of fear of being detected and penalized if they fail to report all their income (Alm, 2019). In the economic approach developed by Allingham and Sandmo (1972), taxpayers tend to engage in tax evasion and tax avoidance. Taxpayers typically conduct a cost-benefit analysis, weighing the potential penalties for irregularities and the tax loss they might incur if their tax evasion is discovered during inspections or audits against the amount of tax they would owe if they fully declared their income. If the penalty for tax evasion and detected tax loss exceeds the tax they would pay when declaring their income honestly, they are more likely to opt for full disclosure; otherwise, they may choose not to do so (Güzel, Özer and Özcan, 2019).

This approach consequently provides a logical and effective outcome, indicating that tax compliance is dependent on the possibility of audit (detection) and penalty rates. According to this, it can be concluded that tax compliance depends on enforcement elements whereas government can achieve higher tax compliance by increasing audit and penalty rates. Alm (2019) pointed that there are some problems related to the conventional expected utility approach to tax compliance since certain key predictions of this approach are not strongly corroborated by empirical evidence. For example, one prediction of the standard theory is that a higher tax rate increases compliance. Conventional approaches to improving tax compliance encompass deterrent measures such as regular audits, diverse penalty structures, and potential criminal charges (Shim, Shim and Shim, 2023). In traditional tax compliance literature, deterrence is regarded as a crucial element in the decision-making process related to tax compliance (Kogler et al., 2013). In accordance with the economic model proposed by Allingham and Sandmo in 1972, robust enforcement through rigorous audits and substantial fines stands as the foremost factor influencing tax compliance. Prior research suggests that deterrence, while important, is not the sole determinant of tax compliance and sometimes may result in negative rather than positive influences on compliance (Shim, Shim and Shim, 2023). According to this perspective, social and psychological factors, including social norms, considerations of fairness, and trust in authorities, are likely to lead to voluntary tax compliance. The slippery slope framework, proposed by Kirchler, Hoelzl and Wahl (2008), which represents the development of the economic theory of tax evasion developed by Allingham and Sandmo (1972), recognizes the interconnectedness deterrent factors that increase enforced tax compliance and social psychological factors that lead to voluntary compliance. This framework examines two dimensions: trust in the tax authority and the authority's power, and their impact on tax compliance. As a result, numerous subsequent studies drew inspiration from and were built upon this framework (Gangl et al., 2012; Batrancea et al., 2019).

Extension of the economics-of-crime model incorporated specific behavioural elements that have been explicitly addressed in other social sciences. Behavioural economics can be broadly described as an approach that utilizes techniques and insights from various fields, particularly psychology, to enhance the understanding of individual and collective decision-making processes. Behavioural economics has been employed in two overarching and interrelated dimensions. Onedimension concentrates on individual factors, while the other on group considerations. Frame dependence is often associated with an individual's psychological tendencies or cognitive limitations. Individuals are driven by diverse motivations, encompassing not only self-interest in a narrow sense but also factors stemming from collective considerations. These include concepts such as fairness, altruism, reciprocity, empathy, sympathy, trust, guilt, shame, morality, alienation, patriotism, social norms, social customs, social capital, tax morale, intrinsic motivation, and numerous other objectives (Alm, 2019). Numerous factors have the potential to influence individual decisions regarding compliance. In accordance with gender socialization theory, distinct roles and values are assigned to men and women,

leading to variations in their interests, decisions, and practices (Helmy, Dwita and Cheisviyanny, 2020). According to gender socialization theory, men are twice as likely as women to participate in unethical behaviour (Tjondoro, Widuri and Manoy, 2019). Women taxpayers have been shown to exhibit an elevated tax morality (Hartmann, Mueller and Kirchler, 2019).

The theory of planned behaviour (planned behaviour theory), a theory in social psychology, explains human behaviour by considering behavioural intentions influenced by attitudes towards three components (the behaviour, subjective norms, and perceived behavioural control) (Ajzen, 1991). According to the theory of planned behaviour (TPB), taxpayers are expected to engage in conscious decision-making, considering all the available information, they will analyse the potential consequences of their actions, resulting in their decision being influenced by a careful weighing of advantages and disadvantages, as well as the anticipated reciprocity (Sundari, Chariri and Utomo, 2022). The study by Taing and Chang (2021) uses the TPB as a conceptual framework to explore the factors influencing the compliance intentions of Cambodian taxpayers.

2.2 ECONOMIC AND PSYCOLOGICAL FACTORS OF TAX COMPLINACE

Tax compliance factors can be grouped into three categories based on the level of control power they possess. The first group of factors includes those that are under the control of tax authorities and include penalty, audit probability and tax rate (Alm, 2012; Ritsatos, 2014). Factors in group two are affected government and include trust in government and the tax service (Ritsatos, 2014). The third group of factors includes factors such as personal norms, social norms, and religiosity, all influenced by the taxpayers and by the community they belong to. There are two different paradigms that can be used to increase tax compliance, one using enforcement (Alm, 2012), known as the deterrence approach, and another approach, known as the non-deterrence approach, which includes trust and the service paradigm (Nurkholis, Dularif and Rustiarini, 2020), as well as the fiscal psychological paradigm (Schmolders, 1959).

Fines or tax penalties and tax audits are two instruments that necessarily exist in a country's tax system (Kirchler, Hoelzl and Wahl, 2008). The presence of these two tools is consistent with the constructivist rationality, a top-down mechanism in which formal institutions create instruments to encourage tax compliance (Górecki and Letki, 2020). Tax penalties are regulatory measures in taxation designed to encourage tax compliance. Tax audit includes controlling taxpayers' compliance with the tax reporting system by completing, calculating, collecting, and deducting all taxes in accordance with applicable laws, ensuring compliance (Rahmayanti, Sutrisno and Prihatiningtias, 2020). Individuals make decisions about whether to adhere to tax regulations or not based on an evaluation of the potential benefits and costs (Allingham and Sandmo, 1972). Taxpayer awareness refers to the recognition, respect, and adherence to applicable tax regulations, accompanied by a sense of seriousness or willingness to fulfil their tax obligations

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(Nurkhin et al., 2018). Non-compliant behaviour with tax regulations may be result of a taxpayer's limited knowledge of and the skills required to adhere to them (OECD, 2019b). Previous research showed diverse findings related to correlation between tax knowledge and the degree of tax compliance (Wadesango et al., 2018). Loo, McKerchar and Hansford (2014) stated that within a self-assessment system, taxation knowledge emerges as the most influential factor in shaping taxpayer compliance behaviour. Timothy and Abbas (2021) identified a noteworthy positive connection between tax knowledge and tax compliance, reinforcing the idea that taxpayers' inherent motivation should be complemented by sufficient tax knowledge. The findings of Rahmayanti, Sutrisno and Prihatiningtias (2020) indicate that tax penalties, tax audits, and the awareness of taxpayers have a positive impact on corporate taxpayer compliance. From a taxation point of view, non-compliant behaviour of taxpayers refers to actions taken to reduce tax obligations, which may occur unintentionally due to ambiguities in tax laws and are commonly recognized as tax avoidance and tax evasion. The decision for individuals on whether to engage in tax evasion is clearly constrained by the available opportunities for doing so. The final choice on tax evasion will depend on the possibility of tax evasion and the personal desire to engage in it. The decision can be influenced by economic or psychological factors, with psychological factors implying that an individual's well-being may be affected even in the absence of direct economic consequences (Levenko and Staehr, 2022). Economic factors regarding tax compliance include the possibility of evasion, rational individualistic choice, and behavioural individualistic choice (Levenko and Staehr, 2022). In the context of discussing psychological factors for tax compliance, it is possible to differentiate personal norms, social norms, and norms related to interactions with the government (reciprocity) (Levenko and Staehr, 2022).

Dularif and Rustiarini (2022) propose that enhancing tax services and fostering trust in the government are more efficient and simpler to implement than developing positive taxpayer behaviours. Taxpayers' perception of equitable treatment by tax authorities can have a positive impact on their willingness to comply with tax obligations (Taing and Chang, 2020). The government should understand how to create a sense of fairness in the taxpayer-government relationship (Kim, 2002). When taxpayers believe that the tax burden is equitably distributed among their peers, they are more inclined to adhere to tax regulations (Taing and Chang, 2020). The quality of tax services can be enhanced through improving tax administration services through cooperation and socialization, and by enhancing the efficiency of the tax system (Alm et al., 2010).

The government should take all possible actions to serve the common good since citizens have to give some portions of their revenue or assets to the government in the form of tax. Effective collaboration between the government and its citizens plays a crucial role in fostering trust and shaping tax compliance. Building trust in government is based on three key factors: enhancing public engagement in the political process, provision of sufficient public goods, and upholding government

credibility (Piryaei, Akhlaghi and Saeed, 2015). Most research findings (Cahyonowati, Ratmono and Juliarto, 2023; Nurkholis, Dularif and Rustiarini, 2020) endorse the idea that higher levels of trust in government tend to result in greater tax compliance. Dularif and Rustiarini (2022) conducted a comprehensive study and identified trust in government and tax services as the most important factors in achieving tax compliance while social norms, personal norms, and religiousness were found to contribute to tax compliance, but with lesser impact than initially anticipated. Hartmann et al. (2022) discovered that building trust in government and encouragement of a positive attitude towards taxes have a beneficial effect on compliance.

The behaviour of taxpayers is not only affected by the risks of formal punishment by state authorities but is also determined by psychological factors. Ethical or normative factors are recognized as factors with a significant influence on tax compliance (OECD, 2010; Dularif and Rustiarini, 2022). These factors are also called psychological factors and include personal norms and social norms. Personal norms can be described as deeply ingrained beliefs regarding what is right or wrong to do. Moreover, personal norms can be defined as the conviction that there exists a moral obligation to adhere to certain standards (Wenzel, 2005). Personal norms can be subdivided into two components: attitude (Ajzen, 1991) and intrapersonal norms (Hur, Roese and Namkoong, 2009). Individual personal norms develop over years and cannot be easily influenced. Social norms refer to the behaviour, ideas, and convictions prevalent within social groups, and the norms of a specific social group have a substantial impact on the actions of individuals who identify with that group (OECD, 2010). Regarding these social norms, a differentiation can be made between descriptive social norms and prescriptive social norms (OECD, 2010). Descriptive social norms reflect what others do or what we think they do while prescriptive social norms reflect what others think about certain behaviour or our perceptions of what others believe (OECD, 2010). Bobek, Hageman and Radtke (2015) have classified social norms in four categories: subjective norm, personal norm, injunctive norm, and descriptive norm. Subjective norm pertains to a taxpayer's perception of their friends' or family's opinions or actions, injunctive norm is connected to a taxpayer's viewpoint regarding the actions of individuals in a comparable situation or within the same group while the descriptive norm refers to a taxpayer's perception of tax evasion based on prevailing public opinions (Dularif and Rustiarini, 2021). The behavioural approach acknowledges that individuals' behaviour is significantly shaped by the collective behaviour of the group (Alm, 2019).

2.3 HYPOTHESIS

The Helmy, Dwita and Cheisviyanny (2020) gender socialization theory argues that the socialization of individuals of different genders differs. This results in the formation of unique values, roles, and beliefs that further impact their interests, decisions, and norms (Helmy, Dwita and Cheisviyanny, 2020). Gender can influence the attitude and perception of taxpayers on tax compliance, as indicated in

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previous research, depending on context. Interaction between gender and economic or psychological determinants have confirmed that, in some cases, females are more moral than male (Kastlunger et al., 2010; Hofmann et al., 2017). This is because females do not break the laws, females' personal and social norms have a stronger focus on tax compliance than male norms (Hofmann et al., 2017). Females are also less risk-seeking, more engaged in social and societal activities, and perceive sanctions as more threatening than males (Croson and Gneezy, 2009; Prasetyo, Adi and WoroDamayanti, 2020). To avoid tax audits, females tend to comply with the tax laws meticulously (Hai and See, 2011). However, according to the Filippin and Crosetto (2014) meta-analyses, 90 per cent of the published papers either found no differences between the female and male tax compliance behaviour, or only insignificant variations (Kangave, Waiswa and Sebaggala, 2021). Building on the presumption of the previous research, we propose the following hypothesis:

H1: There are no statistical differences in attitudes toward the economic and psychological factors of tax compliance among taxpayers of different genders.

In different geographic regions, income exhibited varying degrees of influence on tax compliance, with some northern hemisphere countries (Western and Eastern Europe, North America, Central Asia) showing a stronger predictive relationship between income and tax compliance, while certain southern hemisphere countries (East Asia and Pacific, Latin America and Caribbean, Sub-Saharan Africa) displayed a weaker predictive association (Hofmann et al., 2017). Dissanayake and Premaratna (2020) proved that the taxpayer's level of income is positively correlated with voluntary tax compliance, while enforced compliance shows a negative association, whereby power and perceived trust in tax administration are important. The findings of Durham, Manly and Ritsema (2014) suggest that the interaction between income source and context does not have a significant impact on overall compliance, but this combined influence does shape the connection between income level and compliance, as well as the evolution of compliance behaviour over time. Income level positively correlates with compliance in the estimation. Earned income interacts with the tax context to contribute to a stabilizing influence on compliance behaviour as time progresses (Durham, Manly and Ritsema, 2014). Income level significantly influences tax compliance as individuals with high incomes are more likely to engage in non-compliance behaviour, while low-income individuals are less prone to it (McGee, 2012). Prior research on the income level's effects on tax compliance has identified contrasting views, positive (Durham, Manly and Ritsema, 2014; McGee, 2012) and negative (Alm and McKee, 2006; Trivedi and Chung, 2006). Based on the facts presented and the circumstances that Slovenia belongs geographically to the European countries, it could be assumed that a relationship exists between gross income and tax compliance. However, due to the fact that the Slovene tax system is one of the smallest within the European Union according to number of resident taxpayers, we tested the following hypothesis:

H2: Taxpayers with different income levels do not have statistically significantly different attitudes as far as concerns the economic and psychological factors of tax compliance.

Research concerning the connection between the settlement size (location, rural and urban area) variable of the individual taxpayer and taxpayer compliance is notable while there is some empirical evidences for the location (area) variable of businesses and tax compliance (Dissanayake and Premaratna, 2020; Williams, 2020). According to that research, rural and urban locations are in correlation with trust and voluntary compliance, and among the rural business community, the power of authority reduces tax compliance (Dissanayake and Premaratna, 2020). Williams (2020) even argues that at the European level, those in urban areas were significantly more compliant than those in rural areas. Due to the geographic specifics of the Republic of Slovenia and the size of its population, around two million, we assume, that settlement size has no impact on compliance factors. Therefore, we frame the last hypothesis as:

H3: Taxpayers residing in different settlements size (urban/rural) do not have statistically different attitudes toward the economic and psychological factors of tax compliance.

3 DATA AND METHODOLOGY

3.1 SAMPLE AND DATA COLLECTION

Survey data about Slovene taxpayers' attitudes toward tax compliance were collected based on a written questionnaire that was administered. Due to the sensitive nature of the topic and individuals' reluctance to participate in studies involving taxes and income, the snowball sampling approach was chosen for selecting respondents. The snowball sampling technique is suitable for research when the population is challenging to reach, as is the case when the general population rarely chooses to participate in surveys about their tax payments and income. The process begins by identifying a set of initial respondents for interviews. These respondents then recommend others to be contacted and interviewed. This cycle continues until a sufficient number of respondents is reached (Dragan and Isaic-Maniu, 2013). The target population was individual taxpayers in Slovenia. The sampling process relied on participants' willingness and their availability to complete the questionnaires. The survey was conducted in the period from March to May 2023. In that period overall 390 respondents participated in the survey and filled out the questionnaire.

In the empirical study three research hypotheses were tested; as explained previously, we used only the segments out of the questionnaire that are presented in table 1. The questionnaire was designed based on the previous relevant research conducted by Hasseldine and Hite (2002), Gangl et al. (2013), Braithwaite (2001), Mohamed et al. (2013), Filippin, Fiorio and Viviano (2013), Palil (2010), McGee and Linge (2008). For the purpose of this paper, in addition to the selected demographic variables, overall, 17 questions were observed.

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TABLE 1

List of observed questions and variables

Code	Questionnaire variables	Theoretical dimension			
TC	I feel a moral obligation to pay my taxes.	Tax compliance			
EF1	To my knowledge, I can deduct all personal expenses	Knowledge of paying			
EFI	in calculating my tax liability.	taxes			
EF2	Taxpayers cannot object or make appeal against Tax	Knowledge of the tax			
EFZ	Authority assessments.	system			
EF3	If tax rates are too high tax evasion is morally acceptable.	Tax evasion attitude			
EF4	I pay taxes because the risk of being audited is too high.	Probability of audit			
EF5	Serious enforcement and penalty by the FURS may	Probability			
EF3	result if I do not comply.	of punishment			
PF1	I would feel guilty-bad if I did not pay my full share of taxes.	Feeling bad if evade			
PF2	Working for cash-in-hand payment without paying tax	Disapprove of shadow			
PF2	is a trivial offence.	purchases			
PF3	Paying taxes is one of the basic duties of citizenship.	Important obligation			
PF4	Not paying taxes is one of the worst crimes a person can commit because it harms the whole community.	Disapprove of shadow work			
	Tax Authority in Slovenia can be trusted	Trust in the government			
PF5	to administer the tax system fairly.	/ Tax Authority			
	It is fair that individuals who deliberately evade their				
PF6	taxes should be penalized with the same amount	Fairness of punishment			
	of penalty regardless of the amount of tax evaded.	1			
DE7	The government ensures services, facilities,	Satisfaction with public			
PF7	and infrastructure for which I am very thankful.	services			
DEO	I personally believe that the tax system in Slovenia	Fairness of the tax			
PF8	is fair.	system			
PF9	I would pay taxes even if there were no tax audits.	General tax compliance			
DE10	People in my environment would strongly disapprove	N			
PF10	if I did not meet my tax obligations.	Normative expectations			
PF11	My relatives do not comply, and they have never been penalized.	Empirical expectations			

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All 17 questions belong to the 5-point Likert scale type of question. Therefore, the respondents could give an answer in the range from 1 (strong disagreement) to 5 (strong agreement). Answer 3 represents the neutral answer by which respondent points out that he does not disagree or agree with the presented statements in the survey questions. The main variable under the study is the variable related to the tax compliance of the respondents (variable TC). This variable shows how much the respondents feel morally obligated to pay their taxes. The other 16 questions can be separated into two groups: economic (EF) and psychological (PF) variables (factors). Included in the first group are the variables which cover the economic motives of tax compliance whereas the second group includes variables that cover the psychological aspects of tax compliance. In that way, the first, economic group includes five (EF1–5) questions whereas the second, psychological group is composed of 11 questions (PF1–11). To analyse the data, Microsoft Excel, R 4.3.0 and RStudio 2023.06.1+524 were utilized. Microsoft Excel was primarily used for data editing, while RStudio was used for statistical analyses.

3.2 DATA ANALYSIS

The respondents' structure according to main demographic characteristics is shown in table 2.

TABLE 2

Respondents	'structure.	main	demogra	ohic	characteristics
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Variable	Categories	No. of respondents	Share of respondents, %			
Gender	Male	187	48			
Gender	Female	203	52			
	Low income	47	12			
Gross income	Medium income	196	50			
Gross income	High income	67	17			
	I prefer not to answer	80	21			
Settlement	Urban settlement	157	40			
Settlement	Rural settlement	233	60			

In the survey, 187 males (48%) and 203 females (52%) participated. The median age of the respondents was 42 years, which means that 50% of the respondents were 42 years old or younger, while the remaining 50% were 42 years old or older.

Slightly over 50% of the participants reported a monthly gross income ranging between 1,001 and 2,000 euros. This specific range is categorized as a medium income level. 12% of respondents fell into the low-income bracket, indicating an income below 1,001 euros, while approximately 17% of respondents belonged to the high-income category, signifying an income exceeding 2,000 euros. Out of all respondents, 21% respondents opted not to disclose their gross income information. Consequently, those respondents, who did not share their gross income information, will be excluded from subsequent analyses involving the gross income variable.

Forty per cent of the respondents lived in an urban settlement, and 60% in a rural settlement. An urban settlement is considered to be a settlement with more than 3,000 inhabitants. On the other hand, a rural settlement is a settlement with fewer than 3,000 inhabitants.

To answer the research question, the results of the survey data were further analysed as follows. In the first step, the structure of responses to the 17 observed questions was analysed. For a better understanding of the structure of responses, in addition, main descriptive statistics indicators were calculated as well. To measure the relationship between the variables, polychoric correlations were calculated. Polychoric correlation is used to calculate the correlation between two ordinal variables. The 17 observed questions have only five levels and therefore it is more appropriate in this case to use the polychoric correlation instead of the usually used Pearson linear correlation. However, the interpretation of polychoric correlation corresponds to the interpretation of Pearson's linear correlation. If the polychoric correlation indicator is equal to -1, a perfect negative correlation is present between the observed variables. On the other hand, a polychoric

correlation indicator value of 1 indicates a perfect positive correlation. In the absence of any correlation, the polychoric correlation indicator is equal to 0.

In the second step, the Chi-square tests of independence were conducted (see McHugh, 2013). The Chi-square test of independence is used to inspect whether two categorical variables are likely to be related or not. In this paper, the relationship between disagreements and agreements on the observed 17 survey questions with respondents' gender, gross income, and settlement were tested. To conduct the Chi-square test of independence, answers to the observed survey questions were grouped as follows. Answers 1 and 2 in a category 1 and 2 were treated as disagreement whereas answers 4 and 5 were considered as agreement. For all 17 questions, category 3, the neutral category, was not observed and was omitted in the Chi-square test of independence. The null hypothesis of the Chi-square test of independence is rejected it can be concluded that the two observed variables are related, associated, and dependent. The test statistic used in the Chi-square test of independence is as follows (McHugh, 2013):

$$\chi^{2} = \sum_{i=1}^{r} \sum_{j=1}^{c} \frac{\left(o_{ij} - e_{ij}\right)^{2}}{e_{ij}}$$
(1)

where o_{ij} is the observed cell count in the i-th row and j-th column of the contingency table, e_{ij} is the observed cell count in the i-th row and j-th column of the contingency table (McHugh, 2013). The calculated χ^2 value is compared to the χ^2 critical value for (r-1)(c-1) degrees of freedom and chosen significance level. The decisions for the Chi-square test of independence will be brought by considering a significance level of 0.05.

4 RESULTS

4.1 DESCRIPTIVE STATISTICS

In this chapter, the collected attitudes on tax-related questions were analysed. In table 3 the structure of responses on the observed 17 questions is shown.

According to the results provided in table 3, it can be concluded that only 9% of respondents do not feel morally obligated to pay their taxes (variable TC). On the other hand, 27% of respondents agree and 42% of respondents completely agree that they feel morally obligated to pay their taxes. This results in the highest mean value among the observed variables. According to this, it can be concluded that the vast majority of respondents do comply with tax regulations.

However, if the economic variables related to taxes are observed, in general, it can be concluded that the majority of respondents disagree with the economic dimension of compliance. The only economic variable at which the majority of respondents agreed is variable EF4 (mean = 3.74).

TABLE 3

Structure and main descriptive statistics of responses on tax-related questions, n = 390

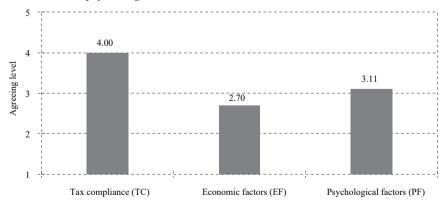
Code		Resp	onses	(%)		Mean	St. dev.	Min	Median	Max.	Skewness
Coue	1	2	3	4	5	wiean	SL UEV.	191111.	wieulali	IVIAX.	Skewness
TC	2	7	22	27	42	4.00	1.06	1	4	5	-0.82
EF1	21	18	41	13	7	2.65	1.15	1	3	5	0.12
EF2	25	26	27	16	6	2.53	1.21	1	2	5	0.33
EF3	31	26	24	13	5	2.34	1.19	1	2	5	0.50
EF4	8	8	24	23	37	3.74	1.26	1	4	5	-0.69
EF5	22	41	28	8	2	2.26	0.94	1	2	5	0.48
PF1	4	8	29	24	35	3.79	1.12	1	4	5	-0.57
PF2	20	21	31	20	7	2.74	1.20	1	3	5	0.07
PF3	10	23	43	16	8	2.90	1.06	1	3	5	0.11
PF4	10	20	28	28	14	3.15	1.19	1	3	5	-0.16
PF5	9	17	45	24	5	3.01	0.98	1	3	5	-0.24
PF6	27	15	26	17	14	2.76	1.39	1	3	5	0.14
PF7	9	40	37	10	4	2.60	0.92	1	3	5	0.49
PF8	12	36	32	15	5	2.64	1.02	1	3	5	0.36
PF9	9	12	28	25	26	3.46	1.24	1	4	5	-0.39
PF10	7	12	43	24	14	3.27	1.06	1	3	5	-0.18
PF11	2	9	22	27	39	3.92	1.08	1	4	5	-0.69

If the psychological variables are observed it can be noticed that the highest average agreement is achieved at variables PF11 (mean = 3.92), PF1 (mean = 3.79) and at variable PF9 (mean = 3.46). The most disagreement level respondents have shown at variables PF7 (mean = 2.60) and PF8 (mean = 2.64).

In graph 1 the mean response values between the tax compliance variable and economic and psychological variables are presented. The economic factor (EF) mean value was calculated by taking into account all answers on five economic variables. To calculate the psychological factor (PF) mean, all respondents' answers on the 11 psychological variables were observed.

Graph 1

Comparison of mean response values on the tax compliance variable and on economic and psychological variables, n = 390



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According to graph 1, it is noticeable that the highest average agreement level is present at the tax compliance (TC) variable. On the other hand, the respondents have shown the lowest average agreement level with the economic variables.

In table 4 polychoric correlations among the tax-related questions are shown.

Strong correlations exist where the polychoric correlations are under -0.50 or above 0.50 or are present only in four cases. Variable TC has a strong positive correlation with variable PF1 (polychoric correlation = 0.72) and with variable PF9 (polychoric correlation = 0.68), respectively. Also, there is a strong positive correlation between variables PF1 and PF9 (polychoric correlation = 0.59). In the fourth case, the strong positive correlation is between variables PF3 and PF4 (polychoric correlation = 0.52).

	PF10														
	PF9														
	PF8														0.13
	PF7													-0.22	-0.07
	PF6												0.07	0.08	-0.09
	PF5											0.06	-0.32	0.30	0.20
7-	PF4										0.10	-0.01	-0.10	0.13	0.30
pondents	PF3									0.52	0.09	-0.05	0.04	0.06	0.34
= 390 res	PF2								-0.12	-0.19	-0.01	0.21	0.04	-0.12	-0.19
ions, n =	PF1							-0.26	0.41	0.38	0.06	-0.09	-0.05	0.16	0.59
ted quesi	EFS						-0.21	0.04	0.01	-0.12	-0.02	0.08	0.10	-0.03	0.04
tax-rela	EF4					-0.27	0.32	0.15	0.16	0.00	-0.06	0.13	0.09	0.00	0.04
relation,	EF3				-0.14	0.10	-0.29	0.16	-0.17	-0.28	-0.15	0.09	0.08	-0.13	-0.34
ioric cor	EF2			0.18	0.10	0.10	-0.08	0.25	-0.05	-0.10	0.00	0.29	0.16	-0.18	-0.09
LABLE 4 Correlation matrix, polychoric correlation, tax-related questions, $n = 390$ respondents	EF1		0.34	0.11	0.09	0.11	-0.04	0.34	0.02	-0.09	0.14	0.41	-0.07	0.01	-0.04
on matri	TC	-0.05	-0.10	-0.29	0.16	-0.17	0.72	-0.18	0.30	0.33	0.18	-0.11	-0.11	0.15	0.68
TABLE 4 <i>Correlati</i>	Variable	EF1	EF2	EF3	EF4	EF5	PF1	PF2	PF3	PF4	PF5	PF6	PF7	PF8	PF9

Note: Polychoric correlation values higher than 0.50 are in bold.

-0.07

0.37 0.11

0.040.13

-0.13 0.02

0.16-0.23

0.25-0.07

0.13 -0.04

0.06-0.24

0.25 0.21

-0.13 -0.31

0.13 0.10

-0.10-0.23

0.12 -0.27

-0.33 0.07

0.18 0.34

PF10PF11

-0.03 0.12

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4.2 CHI-SQUARE TEST OF INDEPENDENCE

In this chapter, the Chi-square tests of independence between the observed taxrelated questions and selected demographic variables were conducted. The sociodemographic variables taken into account were respondents' gender, gross income, and settlement type. In that way, it was possible to inspect whether the respondents' tax compliance attitudes towards related questions were different according to their socio-demographic characteristics. The relationship between the tax compliance attitudes on observed questions and respondents' gender is observed in table 5.

TABLE 5

		Num	ber of		Cl.	Emp.			
Code	disagr	eements	agre	ements	Sample size	Chi-	p-value	\mathbf{H}_{0}	
	Male	Female	Male	Female	5120	square			
TC	21	14	116	154	305	3.63	0.0566	Not rejected	
EF1	68	87	39	37	231	1.14	0.2863	Not rejected	
EF2	91	107	48	38	284	2.33	0.1269	Not rejected	
EF3	100	125	38	32	295	2.08	0.1495	Not rejected	
EF4	32	31	113	121	297	0.12	0.7242	Not rejected	
EF5	114	131	19	17	281	0.49	0.4833	Not rejected	
PF1	29	17	100	132	278	6.14	0.0132	Rejected	
PF2	67	93	60	48	268	4.84	0.0278	Rejected	
PF3	61	67	41	55	224	0.54	0.4618	Not rejected	
PF4	61	57	71	91	280	1.70	0.1928	Not rejected	
PF5	49	50	55	60	214	0.06	0.8076	Not rejected	
PF6	88	78	58	65	289	0.97	0.3247	Not rejected	
PF7	92	98	28	26	244	0.20	0.6563	Not rejected	
PF8	96	93	37	39	265	0.10	0.7561	Not rejected	
PF9	45	38	86	110	279	2.50	0.1137	Not rejected	
PF10	38	34	64	85	221	1.89	0.1697	Not rejected	
PF11	25	20	119	141	305	1.47	0.2247	Not rejected	

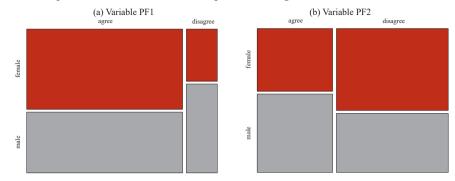
Chi-square test of independence, attitude on tax-related questions vs. gender

Note: Decision made based on significance level of 0.05; df = 1.

According to the results in table 5, the null hypothesis of the Chi-square test of independence was rejected in only two cases at a significance level of 0.05. This occurred with variables PF1 and PF2. Therefore, it appears that there is a relationship between variables PF1 and gender, as well as variables PF2 and gender. To better understand these relationships, mosaic plots for these two cases are presented in graph 2.

GRAPH 2

Mosaic plots, attitude on tax-related questions vs. gender



According to graph 2, males tend to disagree more with PF1 (I would feel guilty-bad if I did not pay my full share of taxes) than females. That would, at the same time, mean that females tend more to agree with PF1 than males. So, females tend more to feel guilty if the taxes are not paid in full than males. Additionally, females tend to disagree more with PF2 (Working for cash-in-hand payment without paying tax is a trivial offence) than males. Due to the fact that the Chi-square tests of independence conducted have shown no statistically different attitudes toward the economic factors of tax compliance but they have shown statistically different attitudes toward two psychological factors, the first research hypothesis H1, that there are no statistical differences in attitudes toward the economic and psychological factors of tax compliance between taxpayers of different genders, can be only partially accepted.

In table 6 the relationship between observed tax-related questions and respondents' gross income is inspected.

In two cases the null hypothesis of the Chi-square test of independence, at a significance level of 0.05, was rejected. The first case appeared at variable EF3 whereas the second case appeared at variable PF9.

Mosaic plots for cases when the null hypothesis of the conducted Chi-square test of independence was rejected, when attitudes on tax-related questions and gross income were compared, are shown in graph 3.

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Chi-square test of independence, attitude on tax-related questions vs. gross income

	\mathbf{H}_{0}		Not rejected	Not rejected	Not rejected	Rejected	Not rejected	Rejected	Not rejected	Not rejected									
	p-value		0.7213	0.1809	0.6349	0.0477	0.1505	0.0958	0.5520	0.2110	0.2180	0.6763	0.1824	0.0868	0.2952	0.3267	0.0444	0.1000	0.5449
U	Chi_sonare	vinye- unv	0.65	3.42	0.91	6.09	3.79	4.69	1.19	3.11	3.05	0.78	3.40	4.89	2.44	2.24	6.23	4.61	1.21
	Sample size		241	174	229	238	238	218	222	220	174	221	170	228	191	207	219	169	246
	High	income	50	18	15	12	34	8	39	13	12	30	20	16	6	20	41	32	46
No. of agreements	Medium	income	131	28	38	31	122	12	118	59	44	77	59	66	21	35	91	65	134
N	Low	income	32	10	8	16	31	9	30	15	19	20	11	14	6	6	17	13	33
ents	High	income	8	31	38	39	14	36	10	33	21	20	18	37	43	31	10	12	6
No. of disagreements	Medium	income	15	75	66	116	33	130	19	79	63	55	44	73	89	91	46	33	21
N0.	Low	income	5	12	31	24	4	26	6	21	15	19	18	22	20	21	14	14	3
I	Code																PF9		PF11

Note: Decision made based on significance level of 0.05; df = 2.

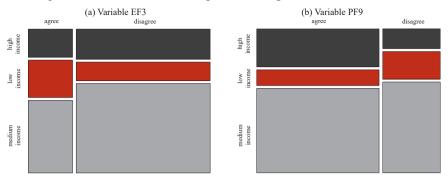
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GRAPH 3

Mosaic plots, attitude on tax-related questions vs. gross income



According to the mosaic plot, given in graph 3, it seems that respondents with medium gross income tend more to disagree with EF3 (If tax rates are too high tax evasion is morally acceptable). On the other hand, the respondents with low gross income tend more to agree with EF3. If a relationship between variable PF9 (I would pay taxes even if there were no tax audits) and the gross income is observed, based on the mosaic plot in graph 4, it can be concluded that respondents with high gross income tend more to disagree with PF9 whereas respondents with high gross income tend to agree with PF9. In that way, the second research hypothesis H2 that taxpayers with different income levels do not have statistically different attitudes toward the economic and psychological factors of tax compliance, should be rejected. Namely, variable EF3 is a part of economic factors whereas variable PF9 belongs to psychological factors. At these two variables, it has been shown that taxpayers with different income levels do have statistically different attitudes toward tax compliance.

In table 7 results of the Chi-square test of independence between tax-related questions and respondents' settlement type are provided.

In two cases the null hypothesis of the Chi-square test of independence, at a significance level of 0.05, was rejected. In that way, it was pointed out that some statistically significant relationship exists between variables TC and settlement type, and between variables PF6 and settlement type. For a better understanding of the relations in those two cases, the corresponding mosaic plots were plotted, and they are shown in graph 4.

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TABLE 7

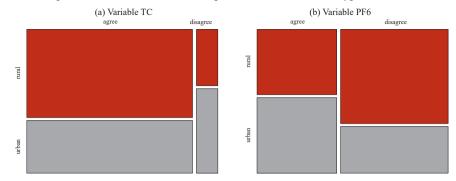
Chi-square test of independence, attitude on tax-related questions vs. settlement type

		Num	ber of		Sample	Emp.			
Code	disagre		agree		size	Chi-square	p-value	\mathbf{H}_{0}	
	Urban	Rural	Urban	Rural					
TC	21	14	101	169	305	6.59	0.0103	Rejected	
EF1	60	95	33	43	231	0.47	0.4927	Not rejected	
EF2	79	119	40	46	284	1.08	0.2994	Not rejected	
EF3	88	137	35	35	295	2.60	0.1066	Not rejected	
EF4	28	35	92	142	297	0.54	0.4616	Not rejected	
EF5	89	156	15	21	281	0.38	0.5355	Not rejected	
PF1	23	23	89	143	278	2.16	0.1415	Not rejected	
PF2	69	91	41	67	268	0.71	0.3994	Not rejected	
PF3	49	79	35	61	224	0.08	0.7803	Not rejected	
PF4	46	72	68	94	280	0.25	0.6148	Not rejected	
PF5	40	59	48	67	214	0.04	0.8431	Not rejected	
PF6	55	111	66	57	289	12.23	0.0004	Rejected	
PF7	77	113	26	28	244	1.00	0.3170	Not rejected	
PF8	68	121	36	40	265	2.95	0.0859	Not rejected	
PF9	37	46	84	112	279	0.07	0.7909	Not rejected	
PF10	36	36	65	84	221	0.80	0.3725	Not rejected	
PF11	21	24	101	159	305	0.98	0.3228	Not rejected	

Note: Decision made based on significance level of 0.05; df = 1.

Graph 4





The mosaic plot presented in graph 4 reveals that respondents from rural settlements tend more to agree with variable TC (I feel morally obligated to pay my taxes) whereas respondents from urban settlements tend more to disagree with variable TC. The relationship at variable PF6 (It is fair that individuals who deliberately evade their taxes should be penalized with the same amount of penalty regardless of the amount of tax evaded) is the opposite. In this case, respondents from rural settlements tend more to disagree with variable PF6 whereas respondents from urban settlements tend more to agree with variable PF6. That would mean that respondents from rural settlements tend not to support penalties being of the same size regardless of the amount of tax evaded by individuals as opposed to the respondents from urban settlements.

The Chi-square tests of independence have shown no statistically different attitudes toward the economic factors of tax compliance, but they have shown statistically different attitudes toward one psychological factor. Therefore, the third research hypothesis H3 that taxpayers residing in different settlement sizes do not have statistically different attitudes toward the economic and psychological factors of tax compliance, can be partially accepted.

5 DISCUSSION

The regulatory impact assessment (RIA) framework assumes that the policy challenges encompass behavioural and structural (economic, legal, incentives, etc.) factors (OECD, 2020). RIA is thus one of the most common and essential tools for analysing the quality of legislation and/or evaluating the impact of regulations (Jovanović and Klun, 2017).

Still, neglecting behavioural analysis when addressing a policy issue can result in a flawed understanding of the problem, overlooking the chance to integrate behaviourally-informed solutions that could enhance the effectiveness of policy outcomes (OECD, 2020). To promote equality and social justice, specific impacts arising from tax policies should consider factors such as gender, income and settlement size in the assessment process. According to Jovanović and Klun (2017)

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the Slovenian Regulatory Impact Assessment lacks the sophistication needed to evaluate complex tax policies and instruments considering some of these factors.

This study investigated the relationship between the taxpayers' attitudes towards economic and psychological factors of tax compliance on one hand, and gender, income level and settlement size on the other. The results of this study can support decision makers with specific information regarding improvement of regulations in order to better design and implement systems and strategies.

The results of our study indicate that self-reported general tax compliance among Slovene taxpayers could be higher, as only 69 per cent of the respondents feel morally obligated to pay taxes; a small percentage express non-compliance (9 per cent) while only 42 per cent see themselves as fully tax compliant. When we examine the economic factors influencing tax compliance, it appears that the probability of being audited is the most significant variable affecting tax compliance behaviour. The mean of knowledge about paying taxes (2.65) as well as about the tax system (2.53) is under the average, which shows that compliance behaviour could be enhanced through education. Within psychological factors, taxpayers' perception is influenced by empirical expectations. They may perceive that the other taxpayers are not highly tax-compliant (for example, their relatives may not comply and have never been penalized), view tax evasion or non-payment of taxes as morally unacceptable (feeling guilty or bad if they were to evade taxes or not pay their full share), and express a willingness to pay taxes even in the absence of tax audits (stating that they would still pay taxes even if there were no tax audits). The results of taxpayers' perception regarding their satisfaction with public services, infrastructure, and facilities (expressing gratitude for various government services, facilities, and infrastructure) indicate dissatisfaction. In their opinion, the Slovenian tax system is perceived as unfair, but trust in government is, on average, slightly higher (3.01) than the perception of tax system fairness (2.64). It can be concluded, that due to the strong polychoric positive correlations in the results between the moral obligation to pay taxes, feelings of guilt about not paying, and willingness to pay taxes even in the absence of audits, Slovene taxpayers perceive paying taxes as one of the basic duties of citizenship. In their perception, not paying taxes signifies a failure to contribute to the community, which they find ethically unacceptable (polychoric correlation = 0.52). Comparison of general tax compliance with the Leveko and Staehr (2022) study show a much lower tax compliance attitude of Slovene taxpayers compared to taxpayers in Estonia (mean = 3.65), where 65 per cent declare themselves fully tax compliant as against the only 42 per cent of Slovenia. The taxpayers in Estonia reported much higher satisfaction with public services (mean = 3.50) than Slovene taxpayers (mean = 2.60), whereas the Estonian taxpayers report on average lower trust in government (2.91) than Slovene taxpayers and higher tax system fairness (2.94).

Based on the results of further examination of taxpayers' tax compliance attitudes towards related questions to their socio-demographic characteristic gender, we can conclude that there are no statistically significant differences in attitudes toward the economic factors of tax compliance. However, statistically significant differences have been observed in attitudes toward two psychological factors. Firstly, females tend to agree more than males with the attitude of paying their full share of taxes as an obligation, and they feel guilty or bad if they do not (feeling bad if evade). Secondly, they also disapprove of shadow working for cash-in-hand payment without paying taxes, more than males. The first research hypothesis (H1) was therefore only partially accepted. These results are consistent with the research of Kastlunger et al. (2010) and Hofmann et al. (2017), suggesting that females tend to be more tax compliant than males in certain cases. Agreement regarding paying full share of taxes aligns with the Hofmann et al. (2017) explanation, which posits that females have stronger personal and social norms focused on tax compliance than males. This difference can also be observed in our results in terms of females' awareness that tax non-compliance harms the tax community; females have strong normative expectations compared to males. However, when we compare our results with the metaanalyses conducted by Filippin and Crosetto (2014), which found no differences in tax compliance behaviour between females and males, it can be concluded that our research revealed partial differences in psychological factors (PF1, PF2).

The next variable considered for tax compliance attitude was gross income. The results show that taxpayers with low gross incomes perceive tax evasion as morally acceptable in circumstances where tax rates are too high and are less tax-compliant than taxpayers with medium gross incomes. Taxpayers with medium gross incomes tend to disagree more with tax evasion due to high tax rates. The possible explanation of this result could be fear that the high taxes would reduce the receipts of lowincome taxpayers to the point at which they would not have enough income for basic living needs. Taxpayers with low gross incomes tend to be less tax compliant as they disagree with paying taxes even in the absence of tax audits. In contrast, taxpayers with high gross incomes are more inclined to agree to pay taxes in such circumstances. Since taxpayers with different income levels do have statistically different attitudes toward tax compliance in economic variable (EF3) and psychological variable (PF9), the second research hypothesis (H2) was rejected. Our research results are in line with the Durham, Manly and Ritsema (2014) and the McGee (2012) research that confirm the effect of income level on tax compliance. The conclusions of Hofmann et al. (2017) predicted strong relationship between income and tax compliance in northern hemisphere countries (Western and Eastern Europe). In our study, it cannot be argued that the relationship is as strong as in Hofmann et al. (2017); still, Slovene taxpayers with different incomes have shown different attitudes towards some economic and psychological variables.

Some statistically significant relationship was also found between settlement type, and two compliance variables (TC, PF6) showing, that taxpayers from rural settlements tend to agree more with the moral obligation to pay taxes than taxpayers from urban settlements. The results also indicated that the taxpayers have different perceptions regarding the fairness of punishment. While taxpayers in rural

settlements believe that different amounts of deliberate tax evasion should not be penalized equally, as it would not be fair, taxpayers in urban settlements have a different attitude. They see equal penalization for deliberate tax evasion, regardless of the amount evaded, as fair. As the tests of independence have shown no statistically significant different attitudes toward the economic factors of tax compliance but they have shown statistically different attitudes toward one psychological factor, the third research hypothesis (H3) was partially accepted. Our results do not support the Dissanayake and Premaratna (2020) findings according to which voluntary compliance has a positive relationship to either a rural setting or an urban environment. They are also not in line with the Williams (2020) results arguing that taxpayers in urban areas are significantly more compliant than those in rural areas. Quite the opposite, Slovene taxpayers from rural area show higher voluntary tax compliance. An explanation could be found in the different personal norms; while taxpayers in rural area are traditionally conservative, this is not the case with taxpayers in urban area.

6 CONCLUSIONS

The study aims to inspect the socio-demographic variables gender, income level and settlement size on the economic and psychological factors of tax compliance. The research findings indicate that there are some statistically significant relationships found between gender, settlement type and the economic and psychological factors of tax compliance. The results confirmed that taxpayers with different income levels have different attitudes toward the economic and psychological factors of tax compliance. The significant fact noted in the study was the prevalence of voluntary compliance among taxpayers in a rural area compared to taxpayers in urban area and different gender attitude seeing tax payment as obligation and disapproval of shadow purchase from females' side.

Policymakers should consider reviewing existing legislation and promoting a more positive tax culture among taxpayers in urban areas and within the male population, as suggested by our results. Given that taxpayers with low incomes tend to agree that tax evasion is morally acceptable when tax rates are excessively high, policymakers should carefully reassess and establish tax laws with tax rates that do not result in non-compliance due to high tax rates. Tax authorities should work on promoting a better tax culture among male taxpayers and those with lower incomes to cultivate an environment that encourages voluntary compliance. Additionally, further research could assess the impact of enforced tax compliance measures, with a specific focus on the male population and low-income taxpayers. In future research, a probability sampling approach should be employed instead of a non-probability sampling approach, as snowball sampling may not allow for the making of inferences relevant to the entire target population.

Disclosure statement

The authors have no potential conflict of interest to report.

REFERENCES

- Ajzen, I., 1991. The theory of planned behavior. Organizational Behavior and Human Decision Processes, 50(2), pp. 179-211. https://doi.org/10.1016/0749 -5978(91)90020-T
- Allingham, M. G. and Sandmo, A., 1972. Income tax evasion: a theoretical analysis. *Journal of Public Economics*, 1(3-4), pp. 323-338. https://doi.org/ 10.1016/0047-2727(72)90010-2
- Alm, J. [et al.], 2010. Taxpayer information assistance services and tax compliance behaviour. *Journal of Economic Psychology*, 31(4), pp. 577-586. https://doi. org/10.1016/j.joep.2010.03.018
- Alm, J. and Malézieux, A., 2021. 40 years of Tax Evasion Games: A Meta-Analysis. *Experimental Economics*, 24, pp. 699-750. https://doi.org/10.1007/ s10683-020-09679-3
- 5. Alm, J. and McKee, M., 2006. Audit certainty, audit productivity, and taxpayer compliance. *National Tax Journal*, 59(4), pp. 801-816.
- 6. Alm, J., 1991. A perspective on the experiment analysis of taxpayer reporting. *The Accounting Review*, 66(3), pp. 577-593. https://www.jstor.org/stable/247810
- Alm, J., 2012. Measuring, explaining, and controlling tax evasion: lessons from theory, experiments, and field studies. *International Tax and Public Finance*, 19(1), pp. 54-77. https://doi.org/10.1007/s10797-011-9171-2
- Alm, J., 2019. What motivates tax compliance? *Journal of Economic Surveys*, 33(2), pp. 353-388. https://doi.org/10.1111/joes.12272
- Batrancea, L. [et al.], 2019. Trust and power as determinants of tax compliance across 44 nations. *Journal of Economic Psychology*, 74, https://doi. org/10.1016/j.joep.2019.102191
- Bobek, D. D., Hageman, A. M. and Radtke, R., 2015. The effects of professional role, decision context, and gender on the ethical decision making of public accounting professionals. *Behavioral Research in Accounting*, 27(1), pp. 55-78. https://doi.org/10.2308/bria-51090
- 11. Braithwaite, V., 2001. The community hopes, fears and actions survey: goals and measures. *Centre for Tax System Integrity Working paper*, No. 2.
- 12. Cahyonowati, N., Ratmono, D. and Juliarto, A., 2023. The role of social norms and trust in authority in tax compliance dilemmas. *Cogent Business & Management*, 10(1). https://doi.org/10.1080/23311975.2023.2174084
- Croson, R. and Gneezy, U., 2009. Gender Differences in Self-Actualization. Journal of Economic Literature, 47(2), pp. 448-474. https://doi.org/10.1257/ jel.47.2.448
- D'Attoma, J. W., Volintiru, C. and Malézieux. A., 2020. Gender, Social Value Orientation, and Tax Compliance. *CESifo Economic Studies*, 66(3), pp. 265-284. https://doi.org/10.1093/cesifo/ifz016
- D'Attoma, J. W., Volintiru, C. and Steinmo, S. S., 2017. Willing to share? Tax compliance and gender in Europe and America. *Research & Politics*, 4(2). https://doi.org/10.1177/2053168017707151

- 17. Dissanayake, N. and Premaratna, S. P., 2020. Influence of business location on tax compliance: an application of the slippery-slope framework. *Proceeding of the Open University Research Sessions (OURS 2019)*, pp. 1-7.
- Dragan, I. M. and Isaic-Maniu, A., 2013. Snowball Sampling Completion. Journal of Studies in Social Sciences, 6(2), pp. 160-177.
- Dularif, M. and Rustiarini, N. W., 2021. Tax compliance and non-deterrence approach: a systematic review. *International Journal of Sociology and Social Policy*, 42(11/12), pp. 1080-1108. https://doi.org/10.1108/IJSSP-04-2021-0108
- Durham, Y., Manly, T. and Ritsema, C., 2014. The effects of income source, context, and income level on tax compliance decisions in a dynamic experiment. *Journal of Economic Psychology*, 40, pp. 220-233. https://doi.org/10. 1016/j.joep.2012.09.012
- Filippin, A. and Crosetto, P., 2014. Reconsideration of Gender Differences in Risk Attitudes. *Grenoble Applied Economics Laboratory Working Papers*, No. 2014-01. https://www.jstor.org/stable/44012237
- Filippin, A., Fiorio, C. V. and Viviano, E., 2013. The effect of tax enforcement on tax morale. *European Journal of Political Economy*, 32, pp. 320-331. https://doi.org/10.1016/j.ejpoleco.2013.09.005
- Gangl, K. [et al.], 2012. The Dynamics of Power and Trust in the "Slippery Slope Framework" and Its Impact on the Tax Climate. *Working Paper*. https:// dx.doi.org/10.2139/ssrn.2024946
- Gangl, K. [et al.], 2013. "How Can I Help You?" Perceived Service Orientation of Tax Authorities and Tax Compliance. *Public Finance Analysis*, 69(4), pp. 487-510. https://dx.doi.org/10.1628/001522113X675683
- Górecki, M. A. and Letki, N., 2020. Social norms moderate the effect of tax system on tax evasion: Evidence from a large-scale survey experiment. *Journal of Business Ethics*, 172, pp. 727-746. https://doi.org/10.1007/s10551-020-04502-8
- Grosch, K. and Rau, H. A., 2017. Gender differences in honesty: The role of social value orientation. *Journal of Economic Psychology*, 62, pp. 258-267. https://doi.org/10.1016/j.joep.2017.07.008
- Güzel, S. A., Özer, G. and Özcan, M., 2019. The effect of the variables of tax justice perception and trust in government on tax compliance: The case of Turkey. *Journal of Behavioral and Experimental Economics*, 78, pp. 80-86. https://doi.org/10.1016/j.socec.2018.12.006
- Hai, O. T. and Meng See, L., 2011. Behavioral Intention of Tax Non-Compliance among Sole-Proprietors in Malaysia. *International Journal of Business* and Social Science, 2(6), pp. 142-152.
- Hartmann, A. J. [et al.], 2022. The economic crisis during the COVID-19 pandemic has a negative effect on tax compliance: results from a scenario study in Austria. *Journal of Economic Psychology*, 93. https://doi.org/10.1016/j. joep.2022.102572

- 30. Hartmann, A., Mueller, M. and Kirchler, E., 2019. Tax Compliance: Research Methods and Decision Processes. WU International Taxation Research Paper Series, No. 2019-04.
- 31. Hasseldine, J. and Hite, P. A., 2002. Framing, gender and tax compliance. Journal of Economic Psychology, 24(4), pp. 517-533. https://doi.org/10.1016/ S0167-4870(02)00209-X
- 32. Helmy, H., Dwita, S. and Cheisviyanny, C., 2020. The Influence of Gender and Machiavellianism on Tax Evasion (A Study on Accounting Students). Advances in Economics, Business and Management Research. Proceedings of the Sixth Padang International Conference on Economics Education, Economics, Business and Management, Accounting and Entrepreneurship (PICEEBA 2020), 79, pp. 89-93. https://doi.org/10.2991/aebmr.k.210616.013
- 33. Hofmann, E. [et al.], 2017. Tax compliance across sociodemographic categories: Metaanalyses of survey studies in 111 countries. Journal of Economic Psychology, 62, pp. 63-71. https://doi.org/10.1016/j.joep.2017.06.005
- 34. Hur, T., Roese, N. J. and Namkoong, J. E., 2009. Regrets in the east and west: role of intrapersonal versus interpersonal norms. Asian Journal of Social Psychology, 12(2), pp. 151-156. https://doi.org/10.1111/j.1467-839X.2009.01275.x
- 35. Jovanović, T. and Klun, M., 2017. Tax Policy Assessment in Slovenia Case of Interest Tax Shield. Danube: Law and Economics Review, 8(1), pp. 1-17. https://doi.org/10.1515/danb-2017-0001
- 36. Kangave, J., Waiswa, R. and Sebaggala, N., 2021. Are Women More Tax Compliant than Men? How Would We Know? African Tax Administration Paper, No. 23. https://doi.org/10.19088/ICTD.2021.006
- 37. Kastlunger, B. [et al.], 2010. Sex differences in tax compliance: Differentiating between demographic sex, gender-role orientation, and prenatal masculinization (2D:4D). Journal of Economic Psychology, 31(4), pp. 542-552. https://doi.org/10.1016/j.joep.2010.03.015
- 38. Khalil, S. and Yusuf, S., 2022. Personality traits, religiosity, income, and tax evasion attitudes: An exploratory study in Lebanon. Journal of International Accounting, Auditing and Taxation, 47. https://doi.org/10.1016/j.intaccaudtax.2022.100469
- 39. Kim, C. K., 2002. Does fairness matter in tax reporting behavior? Journal of Economic Psychology, 23(6), pp. 771-785. https://doi.org/10.1016/S0167-4870(02)00138-1
- 40. Kirchler, E. [et al.], 2007. Why pay taxes? A review of tax compliance decisions. International Studies Program Working Paper, No. 07-30.
- 41. Kirchler, E., 2007. The economic psychology of tax behaviour. Cambridge: Cambridge University Press. https://doi.org/10.1017/CBO9780511628238
- 42. Kirchler, E., Hoelzl, E. and Wahl, I., 2008, Enforced versus Voluntary Tax Compliance: The "Slippery slope" Framework. Journal of Economic Psychology, 29(2), pp. 210-225. https://doi.org/10.1016/j.joep.2007.05.004
- 43. Kogler, C. [et al.], 2013. Trust and power as determinants of tax compliance: testing the assumptions of the slippery slope framework in Austria, Hungary,

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Romania and Russia. *Journal of Economic Psychology*, 34, pp. 169-180. https://doi.org/10.1016/j.joep.2012.09.010

- Levenko, N. and Staehr, K., 2022. Self-reported tax compliance in post-transition Estonia. *Economic Systems*, 47(3), pp. 1-18. https://doi.org/10.1016/j. ecosys.2022.101047
- 45. Loo, E., McKerchar, M. and Hansford, A., 2014. Understanding the compliance behaviour of Malaysian individual taxpayers using a mixed method approach. *Journal of the Australasian Tax Teachers Association*, 4(1), pp. 181-202.
- McGee, R. W. and Lingle, C., 2008. The Ethics of Tax Evasion: A Survey of Guatemalan Opinion. https://dx.doi.org/10.2139/ssrn.813288
- McGee, R. W., 2012. Income level and the ethics of tax evasion. In: R. W. McGee, ed. *The Ethics of Tax Evasion*, pp. 485-495. https://doi.org/10.1007/ 978-1-4614-1287-8_32
- McHugh, M. L., 2013. The Chi-square test of independence. *Biochemia Med-ica*, 23(2), pp. 143-149. https://doi.org/10.11613/BM.2013.018
- Mohamad, M. M. [et al.], 2013. Accounting vs non-accounting majors: Perception on tax knowledge, fairness and perceived behavioural control. *International Journal of Asian Social Science*, 3(9), pp. 1887-1896.
- Nichita, A. [et al.], 2019. We Learn Not for School but for Life: Empirical Evidence of the Impact of Tax Literacy on Tax Compliance. *Eastern European Economics*, 5(5), pp. 397-429. https://doi.org/10.1080/00128775.2019.1 621183
- Nurkhin, A. [et al.], 2018. The Influence of Tax Understanding, Tax Awareness and Tax Amnesty Toward Taxpayer Compliance. *Jurnal Keuangan Dan Perbankan*, 22(2), pp. 240-255. https://doi.org/10.26905/jkdp.v22i2.1580
- Nurkholis, N., Dularif, M. and Rustiarini, N. W., 2020. Tax evasion and service-trust paradigm: A meta-analysis. *Cogent Business & Management*, 7(1). https://doi.org/10.1080/23311975.2020.1827699
- 53. OECD, 2010. Forum on tax administration: small/medium enterprise (SME) compliance subgroup. Information Note Understanding and Influencing Taxpayers' Compliance Behaviour. Paris: OECD.
- 54. OECD, 2016. Better Policies for 2030 An OECD Action Plan on the Sustainable Development Goals. Paris: OECD.
- 55. OECD, 2019a. Tax Morale: What Drives People and Businesses to Pay Tax? Paris: OECD. https://doi.org/10.1787/f3d8ea10-en
- 56. OECD, 2019b. *OECD SME and entrepreneurship outlook 2019*. Paris: OECD. https://doi.org/10.1787/34907e9c-en
- OECD, 2020. Regulatory Impact Assessment, OECD Best Practice Principles for Regulatory Policy. Paris: OECD. https://doi.org/10.1787/7a9638cb-en
- 58. OECD, 2022. Tax Policy and Gender Equality: A Stocktake of Country Approaches. Paris: OECD. https://doi.org/10.1787/b8177aea-en
- Palil, M. R., 2010. Tax knowledge and tax compliance determinants in selfassessment system in Malaysia. PhD Thesis. Birmingham: University of Birmingham.

- Piryaei, M., Akhlaghi, F. and Saeed, M., 2015. An investigation into the factors affecting people's trust in government performance. *Science Journal*, 36(6). https://doi.org/10.17776/CSJ.97634
- Prasetyo, D. Y., Adi, P. H. and Woro Damayanti, T., 2020. Overconfidence, Gender and Tax Compliance: The Indonesian Evidence. *Montenegrin Journal of Economics*, 16(4), pp. 135-143. https://doi.org/10.14254/1800-5845/2020.16-4.11
- Rahmayanti, N. P., Sutrisno, S. T. and Prihatiningtias, Y. W., 2020. Effect of tax penalties, tax audit, and taxpayers' awareness on corporate taxpayers' compliance moderated by compliance intentions. *International Journal of Research in Business and Social Science*, 9(2), pp. 118-124. https://doi.org/ 10.20525/ijrbs.v9i2.633
- Ritsatos, T., 2014. Tax evasion and compliance: from the neo classical paradigm to behavioural economics-a review. *Journal of Accounting and Organizational Change*, 10(2), pp. 244-262. https://doi.org/10.1108/JAOC-07-2012-0059
- Schmolders, G., 1959. Fiscal psychology: a new branch of public finance. National Tax Journal, 12(4), pp. 340-345. https://doi.org/10.1086/NTJ41790780
- 65. Shim, S. A., Shim, H. and Shim, T. S., 2023. Does procedural justice in a tax audit situation affect taxpayers' acceptance of tax audit assessments? *Applied Economics*. https://doi.org/10.1080/00036846.2023.2193722
- Stanimirović, T. and Klun, M., 2021. Gender budgeting in Slovenia approaches, achivments, and complexities. *Public Money & Management*, 41(7), pp. 548-553. https://doi.org/10.1080/09540962.2021.1936937
- Sundari, R. I., Chariri, A. and Utomo, D. C., 2022. Does Tax Awareness Mediate Tax Amnesty and Tax Authorities toward Tax Compliance? *General Man*agement, 23(190), pp. 269-277. https://doi.org/10.47750/QAS/23.190.29
- Taing, H. B. and Chang, Y., 2020. Determinants of Tax Compliance Intention: Focus on the Theory of Planned Behavior. *International Journal of Public Administration*, 44(1), pp. 62-73. https://doi.org/10.1080/01900692.2020.1728313
- Timothy, J. and Abbas, Y., 2021. Tax morale, perception of justice, trust in public authorities, tax knowledge, and tax compliance: a study of Indonesian SMEs. *eJournal of Tax Research*, 19(1), pp. 168-184.
- Tjondoro, E., Widuri, R. and Manoy, S. B., 2019. Different Cities, Different Genders, Different Perception of Tax Evasion. 3rd International Conference on Economics, Education, Business and Accounting, pp. 133-150. https://doi. org/10.18502/kss.v3i11.4004
- Trivedi, V. U. and Chung, J. O. Y., 2006. The impact compensation level and context on income reporting behavior in the laboratory. *Behavioral Research in Accounting*, 18(1), pp. 167-183. https://doi.org/10.2308/bria.2006.18.1.167
- 72. UN, 2015. Transforming our World: the 2030 Agenda for Sustainable Development. Paris: United Nations.
- Vincent, O., Stevenson, A. and Owolabi, A., 2023. Do sociodemographic characteristics of SME entrepreneurs influence their tax (non)compliance behaviour? *Journal of Economic Criminology*, 1. https://doi.org/10.1016/j. jeconc.2023.100008

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- 74. Wadesango, N. [et al.], 2018. Literature review on the impact of tax knowledge on tax compliance among small medium enterprises in a developing country. *International Journal of Entrepreneurship*, 22(4), pp. 1-16. https://doi.org/10. 14254/1800-5845/2020.16-4.11
- Wenzel, M., 2005. Motivation or rationalisation? Causal relations between ethics, norms and tax compliance. *Journal of Economic Psychology*, 26(4), pp. 491-508. https://doi.org/10.1016/j.joep.2004.03.003
- Williams, C., 2020. Evaluating Public Administration Approaches towards Tax Non Compliance in Europe. *Administrative Sciences*, 10(3). https://doi. org/10.3390/admsci10030043
- 77. WTO, 2023. WTO's contribution to attaining UN Sustainable Development Goals: 2023 update to the High-Level Political Forum. Geneva: WTO. https:// doi.org/10.30875/9789287072153

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