# FACTORS DETERMINING TAXPAYERS' PERCEPTION TOWARDS TAX FAIRNESS: THE STRUCTURAL EQUATION MODEL FOR TURKEY

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## Abstract

Tax noncompliance is a significant problem that should be researched given
changing tax views of taxes. Tax compliance is a complex issue and can be

explained by both economic and social factors. Perceptions of fairness have played an important role in taxpayers' voluntary tax compliance. This exploratory study investigated the relationship between tax compliance and fairness from the point of view of taxpayers' perception of tax fairness and the factors determining tax fairness. Using survey data collected from 481 taxpayers, this relationship was found using a structural equation model with Turkey as the sample country. We found that perceived fairness in the tax system depends on the structure of the tax system, interaction with the tax administration, inefficiency in the tax system, tax morale and the using of public expenditures.

**Key Words:**  *Tax compliance, tax fairness, taxpayers' perceptions, tax knowledge, structural equation model.*

**JEL Classification:** H26, H31, D63

# 1. INTRODUCTION

As always, tax is an important source of revenue for governments. Governments are unable to collect as much taxes as they would like or need. Tax noncompliance, such as tax evasion and tax avoidance, has become widespread, which has led to countries being confronted with a number of problems, such as distortions in the distribution of the tax burden and wealth in society and budget deficits (Leviner, 2008). In all countries, tax administrations have been faced with the issue of how to decrease their tax losses. This issue keeps tax compliance literature on the agenda. Tax noncompliance is becoming more costly for governments' budgets. For instance, in the United States, noncompliance is estimated to cost the federal government over $300 billion annually (Bobek et al., 2007; James and Alley, 2004). In addition, tax noncompliance not only decreases public revenues for financing government expenditures but also contributes to social inequality between social groups (Wenzel, 2002).

Researchers embarked on studies of tax compliance during the 1980s. Clotfelter (1983) conducted the first empirical research on tax compliance. However, progress up until the 1990s was somewhat disappointing (Beron et al., 1998).

Tax compliance can be voluntary or enforced by authorities. Voluntary tax compliance has prevailed over law enforcement, which has led to the need to determine the factors that affect a taxpayer's behavior towards tax compliance. The factors that explain taxpayer noncompliance can be classified into economic factors and social factors. Despite economics models having been used for a long time, they have not been able to precisely explain the compliance behavior of taxpayers.

There are many previous studies on tax compliance focusing on social factors. Bobek et al. (2007) found that social norms can explain the differences in tax compliance across countries (Australia, Singapore and the U.S.). Wenzel (2004) researched social norms for three countries (Australia, Singapore and the U.S.) as well. He found that the effects of non-personal norms on tax compliance are more ambiguous than those of personal norms. In addition, he stressed that the role of social norms on tax compliance is greater than that of personal norms. Murphy (2004) showed the relationship between trust and tax compliance. Devos (2008)

and Andreoni et al. (1998) investigated the relationship between demographic variables (age, occupation, etc.) and taxpayers' attitudes towards tax evasion. The related relationship was found to be statistically significant. Cummings et al. (2009) analyzed the influences of political norms on tax compliance behavior using survey data. The survey results indicated that a high quality of governance encourages taxpayers to voluntarily comply with taxes. Seeing that every country has distinctive features, successful tax compliance must give due weight to all relevant factors and their interaction in each country (James and Alley, 2000:42).

In contrast, few studies have directly addressed the relationship between tax compliance and fairness as a social norm. The aim of this study is to fill this gap. This study focuses on finding the relationship between tax compliance and fairness as a social norm under the auspices of factors determining tax fairness with an empirical study using Turkey as a sample. Therefore, this research shed new light on tax compliance and tax fairness with a focus on social norms. Research based on the tax compliance indexes indicates that Turkey has high levels of tax evasion (Riahi-Belkaoui, 2004).

Many empirical studies have used information from the reports of national revenue administrations. For example, most studies in the United States have used data from the Taxpayer Compliance Measurement Program (TCMP). However, TCMP and other countries' data have some deficiencies. These data lack socio-economic variables. In addition, the data do not indicate all under-reported income. In contrast, survey method gives socio-economic variables (Torgler, 2007).

We believe that this research contributes to the tax literature in two ways: (1) Broadening the database with findings will improve the limited literature for related areas. (2) The relationship between tax compliance and fairness is measured with a structural equation model. In this way, the effects of tax fairness on tax compliance can illustrate broader themes.

The remainder of this paper is organized as follows: Section 2 describes the theoretical framework. Section 3 explains fairness and tax compliance using previous literature. Section 4 presents the empirical results, and section 5 concludes the paper.

## 2. OVERVIEW OF TAXPAYER COMPLIANCE

Although there is no standard definition of tax compliance, the most comprehensive definition that is accepted is compliance with reporting requirements, meaning that the taxpayer files all required tax returns at the proper time and that the returns accurately report tax liability in accordance with the internal revenue code, regulations and court decisions applicable at the time the return is filed (Devos, 2008). Tax compliance includes both tax avoidance and tax evasion, which are distinguished in terms of legality (James and Alley, 2004). Tax avoidance is legal. In contrast, tax evasion is illegal.

Tax compliance means that taxes are completely collected. The underlying reason taxes are paid can be voluntary or enforced by authorities. In this framework, two theories have been developed by researchers. Devos (2008) claimed that there are two schools, "*The Economic School*" and "*The Social Psychology School*". The first view is the "*The Economics of Crime Approach*" by Allingham and Sandmo (1972), which is developed from the papers of Becker (1968) and Tulkens and Jacquemin (1971). This is known as "*The Deterrence Model*" (Doyle et al., 2009). Enforcement strategies such as audits and sanctions are enforced. The view behind this approach is based on the theory of public enforcement of law (Polinsky and Shavell, 2000). With this approach, the tax administration has a command of the traditional ''enforcement'' paradigm. Taxpayers think that the tax administration views taxpayers as potential criminals, rather than providing services to taxpayers (Alm et al., 2010).

Andreoni et al. (1998) argued that the weakness of Allingham and Sandmo's model is that it is based on the assumption that the probability of an audit is constant. Cummings et al. (2009) suggested that reducing tax evasion or noncompliance is not simply a matter of applying higher penalties and/or increasing the frequency of audits.

The second view is known as "*The Accommodative Model*" (Doyle et al., 2009). This model consists of non-economic social factors. Ayres & Braithwaite (1992) and Leviner (2008) emphasized this approach as "*The Responsive Regulation*". For this model, tax compliance requires a multi-disciplinary approach, for example drawing from the perspectives of economics, sociology and psychology.

Although economic models are older than social models, they are unable to explain the compliance behavior of taxpayers. Taxpaying behavior is also a social process, where taxpayers share information, experiences, attitudes, and patterns of behavior, which affect their assessments of costs and benefits (Leviner, 2008). For these reasons, empirical research has focused on social factors (Bobek et al., 20070). Doyle et al. (2009) argue that there must be a balance between the deterrence model and the accommodative model. Simon and Alley (2004) reached similar conclusions. They claimed that both approaches have disadvantages in terms of tax compliance. A successful strategy for tax compliance should exist somewhere between voluntary compliance and enforced compliance.

Social norms are divided into personal and non-personal factors. Personal norms, such as the ability of a taxpayer to pay, tax morals, individual tax burdens and demographics, hold subjective features. These factors can change among individuals. Non-personal norms consist of components such as fairness in tax system, the structure of the tax system and tax administration efficiency. Whereas non-personal norms are related to others' (e.g., family, friends, and colleagues) expectations, personal norms are based on one's own decisions and expectations on ethics and morale (Kirchler Hoezl and Wahl, 2008:218).

Kirchler and Wahl (2010) analyzed the relationship between voluntary compliance and enforced compliance. They found that voluntary and enforced compliance are not correlated. Gary et al. (2003) explained why taxpayers' attitudes towards tax compliance vary across time, regions, and similar enforcement regimes.

## 3. FAIRNESS AND COMPLIANCE WITH PREVIOUS RESEARCH

Tax fairness means that taxpayers "pay a fair share" (Morris, 2012). According to the literature, taxpayers pay their taxes based on their ability to pay in a fair tax system. In addition, tax should be administered fairly in terms of the assessment and collection of tax. Tax laws should be applied without regard for the taxpayers' features, such as race, gender, and social status. Not only are taxpayers interested in the returns on the taxes they pay, but they also want to be equal to other taxpayers in terms of returns (Leviner, 2008). Fairness is a result of this perception. For these reasons, fairness is an important factor in taxpayers' decision between tax compliance and tax evasion. Because tax fairness has a potential impact on tax compliance, taxpayers' perception of the fairness of a tax

is important for policy makers (Thomas, 2012). An unfair share of the tax burden may cause taxpayers to be less tax compliant (OECD, 2012).

Fairness in tax system can be divided into three types. *Distributive fairness* is the perception that the government acts as a good custodian and wise spender of tax revenues. *Procedural fairness* is the perception that the revenue adheres to procedures that are fair in dealing with taxpayers. *Retributive fairness* is the perception that the revenue is fair in the application of punishment when the rules are broken (OECD, 2012).

A number of researchers have examined the relationship between fairness and tax compliance. Evidence obtained from prior research shows that fairness is positively related to tax compliance. Previous research shows that fairness in tax compliance can be explained from distributive, dimensional and procedural points of view (e.g., Andreoni et al., 1998; Thomas, 2012, Hartner et al., 2008; Doyle et al., 2009; Feld and Frey, 2010; Bordignon 1993; Spicer & Becker 1980). Andreoni, Erard, Feinstein (1998) argue that an unfair tax system can lead taxpayers to rationalize tax evasion. There is much empirical evidence showing that taxpayers who feel that the tax system is procedurally fair are more tax compliant. According to Bazart and Bonein (2014), the dynamics of tax evasion are designated by social norms and taxpayers tend to evade taxes after reaching a given threshold. This threshold depends on the sensitivity of taxpayers to the unfairness. If the distribution of taxpayers' burden is unequal, tax compliance is likely to decrease (Kirchler et al., 2008). That is to say, an unfair tax system may lead taxpayers to rationalize tax evasion (Andreoni et al., 1998). Emphasizing fair procedures makes it possible to increase taxpayers' trust in tax administration, and the possibility of voluntary tax compliance will increase. As a noteworthy example, in his empirical study, Murphy (2004) finds that the more regulators act fairly, the more taxpayers will trust the authority. In another survey-based study, Murphy (2005) found that when taxpayers were treated procedurally unfairly by taxes, they were more likely to have negative views on the legitimacy of the tax authority.

In our analysis, we used the following main components of perceived fairness: ***the structure of the tax system, inefficiency in the tax system, tax morale, interaction with the tax administration and the use of public expenditures***. These components are related to procedural justice and are used to measure tax fairness as factor affecting taxpayers' behavior.

Tax law is the main factor affecting the performance of *the structure of the tax system*. The tax code being complex and open to interpretation leads to lower tax compliance. In addition, correct income declaration is difficult with a complex tax system (Schaltegger, 2007; Oberholzer and Stack, 2014). Tax complexity can take many forms, like computational forms. Too much detail in the law, ambiguity and low levels of readability are common problems (Saad, 2014). In addition, tax complexity creates "gray areas", which can lead to tax noncompliance (Andreoni, et al., 1998; Graetz et al. 1986). Researchers have studied how fairness may affect taxpayers' attitudes towards taxes with respect to the tax code. Alm et al. (2010) showed that taxpayers pay fewer taxes when their tax liability is uncertain. They suggest increasing services for taxpayers to decrease tax evasion. With these services, taxpayers can understand tax codes and solve problems. In Saad's studies for New Zealand (2014), tax complexity and fairness perceptions partly contributed to taxpayers' noncompliance towards taxes.

*Inefficiency of the Tax System* can be assessed with a number of tax policy parameters, such as instability in tax law, fines, audits and tax amnesty. Audits and fines are crucial tools for combating taxpayer resistance. As seen in some studies, fines are more effective than tax audits in inducing tax compliance (Kirchler et al., 2008).

Amnesty may negatively affect tax compliance in the long run if taxpayers think of amnesty as an inequitable issue. An amnesty given to tax evaders is generally seen as unfair. From this perspective, amnesty hinders honest taxpayers' compliance with the tax authority's rules (Andreoni et al., 1998; Schaltegger, 2007). In the same way, Posner (2000) suggested that amnesty contributes to an unfair procedure. With amnesty, greater revenue in the short term offsets reduced revenue in the long term.

Leviner (2008) claimed that voluntary compliance with taxes is especially important in a complex and constantly evolving tax system. A more fair and efficient tax system improves voluntary reporting.

It is accepted that *tax morale* serves as an important explanation for tax compliance (Andreoni et al., 1998; Feld and Frey, 2005). Calvet and Alm (2013) suggest that morale has a greater influence on tax compliance than what is predicted by standard economic theory. When tax evasion is seen as a moral issue, individuals are less likely to evade taxes (Morris, 2012).

Empirical research related to tax morale reached the same conclusions. One factor shaping tax morale is a fair tax system. Cornelissen et al. (2013) found a strong link between tax fairness beliefs and work morale based on German data. In an empirical study, based on data from 30 countries, Riahi-Belkaoui (2004) found that tax morale can best explain the phenomenon of tax compliance internationally, in addition to the level of economic freedom, the level of importance of the equity market and the effectiveness of competition laws. Riahi-Belkaoui used a tax compliance index to measure tax compliance in countries. According to this index, developed countries have greater tax compliance compared to developing countries.

The last factor that determines the perceptions of taxpayers on tax fairness is *the use of public expenditures*. Tax is a relevant civic duty and liability that makes it possible to provide public goods and services, to distribute wealth and to improve welfare (Wahl et al., 2010). Taxpayers' attitudes toward the use of public expenditures can be assessed two ways. One is on the basis of equality theory. If taxpayers believe that there is a positive relationship between the paid tax and government goods and services in general, they are more likely to comply with taxes (Torgler, 2007:18). With the other, taxpayers usually want reciprocity in their exchange relationship with the government. If there is a lack of equity between a taxpayer's own exchanges compared to those of others, the perception of that taxpayer on fairness may be negative. Taxpayers, at least those who want to benefit from public goods funded by their taxes, want to attain an equal level (Savage and Torgler, 2010; Fehr and Schmidt, 2005)

Feld and Frey (2010) suggested that when government policies are perceived as unfair by taxpayers, a crowding out effect will occur with respect to tax compliance. Andreoni et al. (1998) also found that the use of public expenditures was a factor determining tax fairness. Alm et al. (1992) showed how tax payments as public good funds are important for tax compliance. Differences in the levels of public goods provided among taxpayers are a source of unfairness as perceived by taxpayers (Bazart, Bonein, 2014).

*Interaction with tax administration* is another factor defining taxpayers' fairness perception. The procedural fairness literature specifically highlights the importance of the tax authority's trustworthiness, interpersonal respect, and neutrality (Tyler, 1997; James and Alley, 2004). This interaction can come in three forms: *The treatment of the tax authority, the level of supplied taxpayer*

*services* and *tax knowledge*. Tax authorities should adjust their regulatory efforts to comply with the behavior of taxpayers. When taxpayers find dissatisfaction with the tax authority's treatment, they resist towards the authority. In addition, taxpayers have good reason to evade taxes when tax authorities do not treat taxpayers equally. Taxpayers' perceptions of unfair treatment provided by a tax authority erode the trust of taxpayers in the tax administration (Murpy, 2004). Respectful and fair treatment leads to feelings of respect and acceptance and standing in taxpayers' social group (Hartner et al., 2008). In tax compliance analysis, taxpayers' perceived respectful treatment by the tax authority is an important determinant of tax compliance (Feld and Frey, 2005).

Wenzel's (2002) empirical study for Australia found that taxpayers' were more compliant when they felt fairly and respectfully treated by the tax authority. According to the result of her survey, Murpy (2005) showed that a tax office's misuse of its authority leads to resistance towards this authority by taxpayers. To measure taxpayers' relationship with tax authorities, this study used questions related to their perceived fairness. Tax authorities should treat taxpayers affected by their decisions respectfully and politely, which will increase perceptions of fairness, by making individuals understand that any unfavorable consequences of the authority's decisions do not reflect maliciousness or intention to harm. Like other studies, leviner (2008) argued that taxpayers who believe that the tax administration is fair are respectful toward it. High levels of taxpayer services may be a useful tool for combating tax evasion (Alm et al., 2010).

Tax knowledge is an essential component of tax compliance (Saad, 2014:1070). Tax administration policies in recent years have focused on services for taxpayers, in contrast to the traditional "enforcement" paradigm. More information related to tax law being provided by the tax administration means greater perceptions of fairness, increasing voluntary tax compliance (Alm et al. 2010; Kirchler et al., 2008). The provision of satisfactory information to taxpayers may increase fairness in a tax (Doyle et al., 2009). Previous research supported this suggestion. For example, some studies done for Malaysia showed that tax knowledge is the most influential factor determining taxpayers' compliance behavior (Loo et al., 2009). In addition, knowledge about tax law decreases the probability of an audit (Andreoni et al., 1998).

There was a study on whether the beliefs and evaluations of taxpayers and the tax authority on tax compliance are similar for Australia. The findings of the study

demonstrate that taxpayers and tax authorities have similar views. Treating taxpayers fairly and providing reliable information will lead to increasing the willingness to comply among taxpayers (Kirchler et al., 2006)

## 4. METHODOLOGY

To obtain research data using a developed survey, a questionnaire was applied to taxpayers. We received a total of 481 responses. The survey questions were aimed at assessing participants' perceptions of the dependent and independent variables. All survey results were confidential. Some demographic data were obtained through the survey questions. The results were analyzed through structural equation modeling techniques (SEM) using AMOS 22.0 software.

### 4.1. Sample

The sample for this study consists of taxpayers' perceptions of fairness in the tax system in Turkey. The total number of participants was 500. 19 questionnaires were invalidated; thus, 481 responses are included in the analysis. The response rate is high, at approximately 96%. A total of 52.4% of participants were male, and 47.6% were female. The sample's ages ranged predominantly between 21 and 40 (57.9%). The level of education of most respondents was the bachelor's degree level (46.4%). The majority (74%) of respondents earned less than 5.000 TL a year (see Table 1).

**Table 1: Demographic Profile of All Respondents**

| Variable | | Count | Percentage |
|---|---|---|---|
| **Q1: Age** | < 20 years old | 10 | 2.1 |
| | 21-30 years old | 149 | 30.7 |
| | 31-40 years old | 132 | 27.2 |
| | 41-50 years old | 119 | 24.5 |
| | > 50 years old | 75 | 15.5 |
| **Q2: Gender** | Female | 231 | 47.6 |
| | Male | 254 | 52.4 |
| **Q4: Education** | Primary school graduate | 30 | 6.2 |
| | Secondary school graduate | 46 | 9.5 |
| | High school graduate | 117 | 24.1 |
| | Bachelor | 225 | 46.4 |
| | Master or above | 67 | 13.8 |
| **Q4: Income level** | ≤ 5.000 ₺ | 359 | 74.0 |
| | 5.001 – 10.000 ₺ | 38 | 7.8 |
| | 10.001 – 20.000 ₺ | 35 | 7.2 |

| | | |
|---|---|---|
| 20.001 – 30.000 ₺ | 19 | 3.9 |
| 30.001 – 40.000 ₺ | 14 | 2.9 |
| ≥ 40.001 ₺ | 20 | 4.1 |

## 4.2. Instrument Development

Most of the empirical studies on tax compliance are based on surveys of taxpayers' perception. However, the survey method is criticized by Alm et al. (1992), due to it having a number of methodological problems that make its data highly suspect. Despite this risk, surveys have more advantages compared to other methods. To measure taxpayers' perception of fairness in the tax system, a survey-based data gathering technique was used. Questions were appropriated from relevant studies (Kirchler & Wahl, 2010; Kirchler et al.; 2006; Oberholzer, Stack, 2014). The wording was changed to adapt the questions to the issue of taxpayers' perceptions of fairness in the tax system in Turkey. The survey was completed face to face. To measure the perceived fairness of the tax system in Turkey *inefficiency in the tax system, the use of public expenditures, tax morale, the structure of tax the system and interaction with tax administration*, as independent variables, were measured using a five-point Likert-type scale, with values ranging from 1 (strongly agree) to 5 (strongly disagree). All items in the questionnaire were randomly sequenced. The research model and construction of the questionnaire were modified through pre-testing.

## 4.3. Analysis and Results

The data analysis was conducted in two stages, as suggested by Anderson and Gerbing (1988). First, the measurement model was estimated using confirmatory factor analysis to test whether the constructs possessed sufficient validity and reliability. Second, the structural model was identified, and the hypotheses were tested using various constructs of the model. The research model was tested with SEM techniques using AMOS 22.0 software (Byrne, 2010).

## 4.4. Factor Analysis

To determine the reliability and structural validity, pre-testing of the 27 questionnaire questions was conducted using a sample of 45 taxpayers. Three questions (Q8, Q16 and Q23) were found to be unreliable and, for this reason, eliminated from the analysis.

The discriminant validity of the remaining items and scales was tested with confirmatory factor analysis (CFA) using SPSS 22.0 software. Because the "communality" values were below 0.50, Q12, Q19 and Q29 were deleted. Further,

Q6, Q26 and Q31 were removed from the analysis because their values in the "anti-image" matrix were below 0.50.

Then, we performed factor analysis for the remaining 18 questions. The values of Cronbach's Alpha (0.722), Bartllet's Test of Sphericity (0.000) and KMO (0.747) are reported in Table 2. The data on taxpayers' perception of fairness in the tax system in Turkey were appropriate for factor analysis. Six factors were extracted from factor analysis using varimax rotation as stated in the theory. These factors' pulled variance explained 14.49, 10.86, 10.74, 8.70, 7.58 and 7.30%, respectively, with the Eigen values of all factors greater than 1.

Table 2: Factor Analysis for Taxpayers' Perception to Fairness of Tax System in Turkey

| Factor | Load | Communal | Anti-image | Total variance (%) |
|---|---|---|---|---|
| **Factor 1: The Fairness in Tax System (FTS)** | | | | 14.49 |
| Q20: Tax law is adjusted to pay tax fairly and correctly. | 0.821 | 0.693 | 0.786 | |
| Q17: Tax law ensures that everyone pays the fair and correct amount of tax. | 0.756 | 0.612 | 0.819 | |
| Q18: Tax burden is equal shared between different occupation and income groups. | 0.752 | 0.598 | 0.847 | |
| Q21: Tax authority tries to be fair in decision-making. | 0.716 | 0.590 | 0.811 | |
| **Factor 2: Inefficiency of Tax System (ITS)** | | | | 10.86 |
| Q11: Tax treatments are affected negatively due to be changed tax law often. | 0.761 | 0.641 | 0.597 | |
| Q8:  The likelihood for being deterrent for penalties is small. | 0.643 | 0.526 | 0.758 | |
| Q13: Tax amnesty is the one of reasons of tax evasion in Turkey. | 0.631 | 0.676 | 0.656 | |
| Q9:  Tax audit is not enough level and frequency as much as revealing real tax. | 0.609 | 0.556 | 0.762 | |
| **Factor 3: The Using of Public Expenditures (UPE)** | | | | 10.74 |
| Q27: The government spends all the money collected from taxes wisely and effectively. | 0.705 | 0.647 | 0.735 | |
| Q28: Taxpayers obtain enough information about government spends by government agencies. | 0.665 | 0.579 | 0.776 | |
| Q30: Taxpayers are provided more public goods and services than their paid tax. | 0.652 | 0.549 | 0.791 | |
| **Factor 4: Tax Morale (TM)** | | | | 8.70 |
| Q25: I accept responsibility for paying my fair share of tax. | 0.771 | 0.658 | 0.677 | |

| | | | | |
|---|---|---|---|---|
| Q24: Paying my tax ultimately advantages everyone. | 0.742 | 0.619 | 0.656 | |
| Q22: Any amount tax evasion is wrong from tax morale. | 0.447 | 0.561 | 0.587 | |
| **Factor 5: The Structure of Tax System (STS)** | | | | 7.58 |
| Q5: The tax laws well enough to prepare my own tax return. | 0.775 | 0.628 | 0.660 | |
| Q7: Tax law is understandable and clear. | 0.561 | 0.540 | 0.773 | |
| **Factor 6: The Interaction with Tax Administration (ITA)** | | | | 7.30 |
| Q15: The tax authority is more interested in catching you for doing the wrong thing, than helping you do the right thing. | 0.806 | 0.669 | 0.697 | |
| Q14: Tax authority gives information what taxpayers want. | 0.455 | 0.508 | 0.674 | |
| **Cronbach Alpha: 0.722** | **Total variance explained: 59.67%** | | | |
| **KMO: 0.747** | **Bartlett's test of Sphericty: Sig 000** | | | |

Note: 1. Load = Factor loading, communal = communality, anti-image = anti-image correlation.
   2. Item Q6, Q12, Q19, Q26, Q29, and Q31 was deleted in analysis.

Other results of the analysis indicate that the factor loading of the items of the six factors range from 0.447 to 0.821. The lowest values in terms of communality and the anti-image correlation coefficient were recorded in items Q14 (0.508) and Q22 (0.587), respectively.

## 4.5. Structural Model Results

The model fit measures are shown in Table 3. The $\chi^2$ value for the 481 participants was found to be 281.625, with 120 degrees of freedom. Because this value was affected by sample size, a better measure, CMIN/DF, was used and found to be 281.625/120 (degrees of freedom). The ratio for the proposed model in this study is 2.347, which is within the suggested 3–1 bracket (Chin & Todd, 1995; Gefen, 2000). Therefore, the model fit was found to be statistically significant.

**Table 3: Model Fit Summary for Research Model**

| Fit İndex | Results in Model | Recommendation |
|---|---|---|
| $\chi^2$ | 281.625 | n/a |
| Degrees of freedom | 120 | n/a |
| $\chi^2$ / df | 2.347 | < 3.00 |
| CFI | 0.913 | > 0.90 |

| RMSEA | 0.053 | < 0.08 |
|---|---|---|

In addition, we report two fit indices. In this study, we used the comparative fit index (CFI), which is one of the more stable and robust fit indices (Anderson and Gerbing, 1988). The CFI ratio for the proposed model in this study is 0.913, which should be at or above 0.90 (Hoyle, 1995). The root mean square error of approximation (RMSEA) was also used in this study to test the significance of the proposed model. The value of RMSEA for this model is 0.053, which is less than the recommended value (0.08) (Kline, 2011; Byrne, 2010).

The hypotheses tested in the analysis are as follows:

*H1: Inefficiency in the tax system has a negative and significant effect on fairness in the tax system*.

*H2: The use of public expenditures has a positive and significant effect on fairness in the tax system*.

*H3: Tax morale has a positive and significant effect on fairness in the tax system*.

*H4: The structure of the tax system has a positive and significant effect on fairness in the tax system*.

*H5: Interaction with tax administration has a negative and significant effect on fairness in the tax system*.

The proposed research model was tested with structural equation modeling (SEM) using the AMOS 22.0 software. Standardized estimates for the explanatory variables and p-values are presented in Table 4.

**Table 4: Hypothesis Testing and Significant Coefficients**

| Hypotheses | Path | | Standardized Estimates | p-Value | Result |
|---|---|---|---|---|---|
| $H_1$ | ITS → FTS | – | -0.51 | .00[*] | Supported |
| $H_2$ | UPE → FTS | + | 0.32 | .00[*] | Supported |
| $H_3$ | TM → FTS | + | 0.46 | .00[*] | Supported |
| $H_4$ | STS → FTS | + | 0.86 | .040[**] | Supported |
| $H_5$ | ITA → FTS | – | -0.69 | .015[**] | Supported |

[*] $p < 0.001$    [**] $p < 0.05$

All of the hypotheses are supported. Three of the hypotheses ($H_1$, $H_2$ and $H_3$) are accepted, with p-values at the 1% level. The other hypotheses ($H_4$ and $H_5$) are significant, with p-values at the 5% level. Figure 1 shows the standardized path coefficient for each significant relationship. Standardized path coefficient values less than 0.10 indicate a "small" effect; values of approximately 0.30 indicate a "typical" effect, and values greater than 0.50 indicate a "large" effect (Kline, 2011). Accordingly, a "larger" positive standardized effect size of 0.86 was found for the path from The Structure of the Tax System to Fairness in the Tax System. However, "large" negative standardized effect sizes of -0.69 and -0.51 were found for the paths from Interaction with Tax Administration and Inefficiency in the Tax System to Fairness in the Tax System, respectively. In addition, "typical" positive standardized effect sizes of 0.46 and 0.32 were found for the paths from tax morality and the use of public expenditures to fairness in the tax system.

The same figure indicates that taxpayers' perceptions of fairness in the tax system in the model was in total explained by 71 percent ($R^2$ value), which is an acceptable value given numerous factors may affect perceived fairness in a tax system.

**Figure 1: Path Standardized Estimates for Significant Relationship**
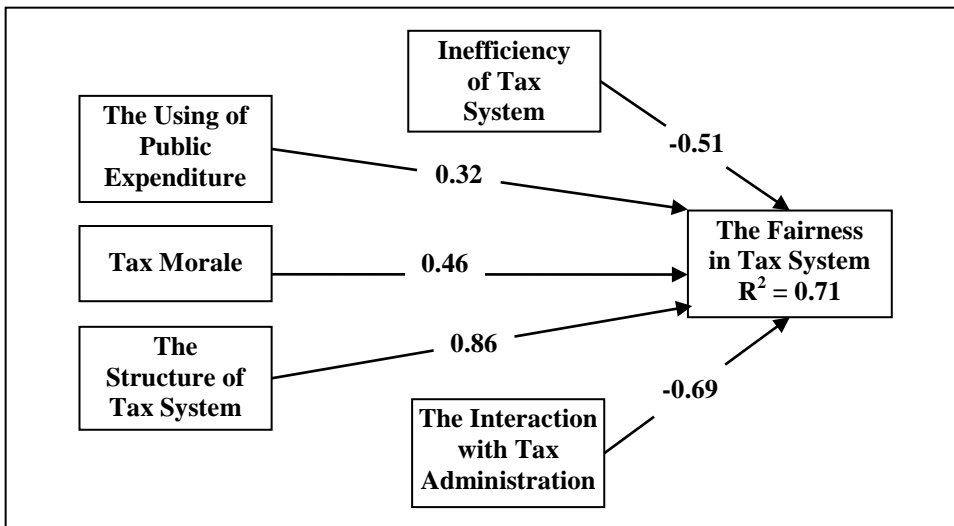
## 5. CONCLUSION

The present study aims to contribute to identifying factors that influence taxpayers' perception of fairness in the tax system in Turkey using SEM. It has been proposed that taxpayers' belief that the tax system is fair tends to increase voluntary tax compliance. The study focused on exploring whether fairness played a role in tax compliance. As explained in the analysis part to this paper, even if taxpayers engage in the "rational choice" model, which suggests taxpayers will maximize their personal gains and minimize their personal losses, they will emphasize tax fairness.

In this analysis, we used inefficiency in the tax system, the use of public expenditures, tax morality, the structure of the tax system and interaction with tax administration as independent variables. We used fairness in the tax system as the dependent variable.

Using large-scale Turkish data, we found a positive correlation between tax fairness and the structure of the tax system, tax morale and the use of public expenditures. By contrast, the relationships between tax fairness and other variables, namely, inefficiency in the tax system and the interaction with tax administration, were strongly significantly negative.

In this analysis, it was found that the structure of the tax system was the strongest factor determining taxpayers' perception of fairness in the tax system. As seen from the results of the present study, if tax codes are simple and understandable and contain all tax liabilities, the tax system may be perceived as fair. Increasing taxpayers' perception of fairness in the tax system will diminish tax losses and increase voluntary tax compliance. This finding is similar to those of previous studies, such as Schaltegger (2007), Oberholzer & Stack (2014) and Saad (2014).

Our empirical findings indicate that two variables have a negative effect on taxpayers' perception of fairness in the tax system. One of these is the interaction with tax administration. Interaction with tax administration is the second most important factor determining taxpayers' perception of fairness in the tax system based on the estimated values. Respondents were found to be unsatisfied with the treatment of the tax administration, which leads to resistance towards authority. The other variable is inefficiency in the tax system. Instability in tax law is an important parameter measuring the inefficiency of a tax system. In addition, the

results of the survey showed that the respondents have an understanding of amnesty, because the tax administration frequently applied it. To eliminate inefficiency in the tax system, measurements such as deterrence fines, reasonable amnesty and satisfying audits must be taken. Provided that the efficiency of the tax system is assured and increased interaction with tax administration, taxpayers will believe the tax system is fairer and comply with taxes. The interaction between the tax administration and taxpayers should be rearranged, with the tax authority providing respectful and service-oriented treatment to taxpayers. Following these adjustments, taxpayers' perceptions of fairness in the tax system will become positive, and voluntary tax compliance will increase. These results conform to previous research (Kirchler et al., 2008; Andreoni et al., 1998; Schaltegger, 2007; Posner 2000).

The results showed that tax morality and the use of public expenditures were substantial factors determining taxpayers' perception of fairness in the tax system. The views of taxpayers are based on their own responsibilities of the fair tax share. In addition, it is suggested that tax evasion is a moral issue. Our findings indicated that taxpayers' perceptions were based on reciprocity between their paid taxes and the government spending in a way that is effective and responsible. Feld and Frey (2005), Calvet and Alm (2013) and Torgler (2007) reached the same conclusion. Consequently, we can say that social norms are considerable deterministic factors in Turkey.

This study has some limitation. This study used survey data in Turkey. Therefore, the results cannot be generalized to other countries. It is suggested that future research should attempt to compare this topic among both developed and developing countries.

## BIBLIOGRAPHY

Alm, J., B.R. Jackson& M. Mckee (March, 1992), "Estimating the Determinants of Taxpayer Compliance with Experimental Data", *National Tax Journal*, Vol. 45, No. 1, pp.107-114.

Alm, J., T. Cherry, M. Jones, M. Mckee (2010), "Taxpayer Information Assistance Services and Tax Compliance Behavior", *Journal of Economic Psychology*, Vol. 31, pp. 577-586.

Allingham, M.G. & A. Sandmo (1972), "Income Tax Evasion: A Theoretical Analysis", *Journal of Public Economics*, Vol.1, pp.323-338.

Andreoni J., Erard B. Feinstein Js (1998), "Tax Compliance", *Journal of Economic Literature*, Vol. 36, No.2, pp.818–860.

Ayres, I. & J. Braithwaite (1992), *Responsive Regulation: Transcending the Deregulation Debate*, New York: Oxford University Press.

Bazart, C., A. Bonein (2014), "Reciprocal Relationship in Tax Compliance Decisions", *Journal of Economic Psychology*, Vol. 40, pp.83-102.

Beron, Kurt,. Helen V. Tauchen, Ann Dryden Witte (1998), *A Structural Equation Model for Tax Compliance and Auditing,* Nber Working Paper Series, Cambridge:

Bobek, D.D., R. W. Roberts & J.T. Sweeney (2007), "The Social Norm of Tax Compliance: Evidence from Australia, Singapore, and the United States", *Journal of Business Ethics*, Vol. 74, No.1, pp.49-64.

Calvet, R. & J. Alm (2013), *Empathy, Sympathy, and Tax Compliance*, Working Paper, 1310.

Clotfelter, C. T. (August, 1983) "Tax Evasion and Tax Rates: An Analysis of Individual Returns", *Review Economic Statistics*, Vol. 65, No.3, pp.363-373.

Cornelissen, T., O. Himmler, T. Koenig (2013), "Fairness Spillovers—the Case of Taxation", *Journal of Economic Behavior & Organization,* Vol. 90, pp.164–180.

Cummings, R.G., J. Martinez-Vazquez, M. McKee & B. Torgler (2009), "Tax Morale Affects Tax Compliance: Evidence from Surveys and an Artefactual Field Experiment", *Journal of Economic Behavior & Organization*, Vol.70, pp.447–457.

Davis, J. S., G. Hecht & J. D. Perkins (January, 2003), "Social Behaviors, Enforcement, and Tax Compliance Dynamics", *The Accounting Review*, Vol.78, No.1, pp.39-69.

Devos, Ken (2008), "Tax Evasion Behaviour and Demographic Factors: An Exploratory Study in Australia", *Revenue Law Journal*, Vol.18, No.1, pp.1-45.

Doyle, E., K. Gallery & M. Coyle (April, 2009), "Procedural Justice Principles and Tax Compliance in Ireland: A Preliminary Exploration in the Context of Reminder Letters", *Journal of Finance and Management in Public Services*, Vol. 8, No.1, pp.49-62.

Fehr, E. & K. M. Schmidt (2005), *The Economics of Fairness, Reciprocity and Altruism -Experimental Evidence and New Theories*, Munich Discussion Paper, No. 2005-20.

Feld, L. & B. Frey (2005), *Tax Compliance as the Result of A Psychological Tax Contract: The Role of Incentives and Responsive Regulation*, Working Paper, No 76, Canberra:

Feld, L. & B. Frey (2010), "Tax Evasion and Psychological Tax Contract", (in Alm; J. Martinez-Vazquez and B. Torgler –Ed., *Developing Alternative Frameworks for Explaining Tax Compliance*), Routledge, London and New York: pp.74-94.

Graetz, M. J.,J.F., Reinganum & L.L.,Wilde (1986). "The Tax Compliance Game: Toward An Interactive Theory of Law Enforcement", *Journal of Law, Economics and Organization*, Vol.2, pp.1–32.

Hartner, M., S. Rechberger, E. Kirchler & A. Schabmann (March, 2008), "Procedural Fairness and Tax Compliance", *Economic Analysis Policy*, Vol. 38, No.1, pp.137–152.

James, S. & C. Alley (2000), "Tax Compliance, Self-Assessment and Tax Administration", *Journal of Finance and Management in Public Services*, Vol. 2, No.2, pp.27-42.

Kirchler, E., A. Niemirowski, A.Wearing (2006), "Shared Subjective Views, Intent to Cooperate and Tax Compliance: Similarities between Australian Taxpayers and Tax Officers", *Journal of Economic Psychology*, Vol. 27, pp.502-517.

Kirchler, E., E. Hoezl & I. Wahl (2008), "Enforced versus Voluntary Tax Compliance: The "Slippery Slope", Framework", *Journal of Economic Psychology*, Vol. 29, pp.210-225.

Kirchler, E. & I. Wahl (2010), "Tax compliance inventory TAX-I: Designing an Inventory for Surveys of Tax Compliance", *Journal of Economic Psychology*, Vol. 31, pp.331–346.

Leviner, S. (2008), "An Overview: A new Area of Tax Enforcement–from ''Big Stick'' to Responsive Regulation", *Regulation & Governance*, Vol.2, pp.360–380.

Loo, E. C., M. McKerchar, & A. Hansford, (2009). "Understanding the compliance behavior of Malaysian individual taxpayers using a mixed method approach", *Journal of the Australasian Tax Teachers Association,* Vol.4, No.1, pp.181–202.

Morris, Donald (2012), Tax Cheating, New York: State University of New York Press.

Murphy, K. (April, 2004), "The Role of Trust in Nurturing Compliance: A Study of Accused Tax Avoiders", *Law and Human Behavior*, Vol. 28, No.2, pp.187-209.

Murphy, K. (2005), *Regulating More Effectively: The Relationship between Procedural Justice, Legitimacy and Tax Non-Compliance,* Working Paper, No 71.

Oberholzer, R., E.M. Stack (2014), "Review possible Reasons for Tax Resistance in South Africa: A Customised Scale to Measure and Compare perceptions with Previous Research", *Public Relations Review*, Vol. 40, pp.251–266.

OECD (2012), Reducing Opportunities for Tax Non-Compliance in the Underground Economy. Forum on Tax Administration: SME Compliance Sub-Group.

Polinsky, A.M. & S. Shavell, (March, 2000), "The Economics Theory of Public Enforcement of Law", *Journal of Economic Literature*, Vol. 38, No.1, pp.45-76.

Posner, E. A. (November, 2000), "Law and Social Norms: The Case of Tax Compliance", *Virginia Law Review*, Vol. 86, No.8, pp.1781-1819.

Riahi-Belkaoui, A. (2004), "Relationship between Tax Compliance Internationally and Selected Determinants of Tax Morale", *Journal of International Accounting, Auditing and Taxation,* Vol. 13, pp.135–143.

Saad, N. (2014), "Tax Knowledge, Tax Complexity and Tax Compliance: Taxpayers' View", *Procedia - Social and Behavioral Sciences*, Vol. 109, pp.1069-1075.

Savage, D.A. & B. Torgler (September, 2010), "Perceptions of Fairness and Allocation Systems", *Economic Analysis & Policy*, Vol.40, No. 2, pp.229-248.

Schaltegger, C. A. (2007), "Tax Amnesties and Political Participation", ", (in: Benno Torgler -Ed., *Tax Compliance and Tax Morale A Theoretical and Empirical Analysis*), Cheltenham: Edward Elgar Publishing Limited, pp.264-295.

Thomas, C. (2012), Assessing Tax Fairness Dimensions in a Small Developing Economy, *Business and Economics Journal*, Vol.1, pp.1-9.

Torgler, B. (2007), Tax Compliance and Tax Morale A Theoretical and Empirical Analysis, Cheltenham: Edward Elgar Publishing Limited.

Tyler, T. R. (1997). The Psychology of Legitimacy: A Relational Perspective on Voluntary Deference to Authorities, *Personality and Social Psychology Review*, Vol.1, 323-345.

Wenzel, M. (2002), "The Impact of Outcome Orientation and Justice Concerns on Tax Compliance: The Role of Taxpayers' Identity", *Journal of Applied Psychology,* Vol.87, pp.629-645.

Wenzel, M. (2004), "An analysis of norm processes in tax compliance", *Journal of Economic Psychology*, Vo.25, pp.213–228.