

Is the Excise Tax Perceived as an Externality Tax? An Empirical Study on Turkey

İhsan Cemil DEMİR¹, Ali BALKI²

ABSTRACT

This study aims to investigate the perceptions and attitudes of individuals towards the excise tax applied in Turkey since 2002 and whether the excise tax is accepted as an externality tax. We collected the data from 1304 participants across Turkey with online and face-to-face survey methods and analyzed them with regression models. The results show that the excise tax directly affects individuals' expenditures in the high-income group. The perceptions of individuals with high general tax awareness and those who expect an update in tariffs every year have positive attitudes about the excise tax. Those who think that the scope of excise tax should be narrowed have negative perceptions of excise tax. Besides, the positive perceptions of excise tax by individuals who consume harmful products more frequently and those who think that the excise tax on harmful products should be raised support that the excise tax is an externality tax.

Keywords: Tax Perception, Tax Awareness, Excise Tax, Negative Externalities, Externality Tax.

JEL Classification Codes: H20, H23, H30

Referencing Style: APA 7

INTRODUCTION

Pigou (1920) stated for the first time that units emitting externalities should be taxed to internalize negative externalities. Later, some other researchers [Plott (1966); Buchanan (1969); Baumol (1972); Diamond (1972)] carried out more descriptive studies on corrective taxes. Excise taxes, which tax certain goods such as alcoholic beverages, tobacco products, and fuel products, are separated from the value-added tax on all kinds of goods and services (Hines, 2007: 50).

When we look at the goods that constitute the subject of excise taxes, it is clear that they are mainly harmful to the environment and human health. The excessive consumption of these goods causes many negative externalities, especially health problems and environmental pollution. Governments aim to reduce negative externalities by preventing excessive consumption with the excise tax. From this point of view, the findings of Gruber and Koszegi (2004), O'Donoghue and Rabin (2006), DeCicca and McLeod (2008),

Eckerstorfer and Wendner (2013), King et al. (2020) show that taxes are applied as an externality tax. Also, the rigid price elasticity of the demand for goods subject to excise tax (Cnossen, 2010: 237) made this tax an essential source of revenue for governments. In Organisation for Economic Co-operation and Development (OECD) countries, the share of excise tax revenues in total tax revenues was 7.2 on average in 2018 (OECD, 2020: 38).

As emphasized by Song and Yarbrough (1978), Torgler and Schneider (2007), and Dornstein (1987), taxpayers' attitudes, behaviors, and tax perceptions are essential for reaching expected taxation targets. Studies measuring attitudes and behaviors towards excise tax generally focus on product groups subject to excise tax, such as tobacco and fuel products. For instance, Farley et al. (2015) found that smokers support increases in this tax if the tax on tobacco products encourages healthy lifestyles and supports smoking cessation. Scott (2012) and Li et al. (2014) found that people reacted strongly to the excise tax on fuel. Also, the increases in the tax in question reduced their fuel consumption.

¹ Afyon Kocatepe University, Campus of Ahmet Necdet Sezer, Third Education Building, Afyonkarahisar, Turkey, icdemir@aku.edu.tr

² Afyon Kocatepe University, Campus of Ahmet Necdet Sezer, Third Education Building, Afyonkarahisar, Turkey, alibalki42@hotmail.com

Regarding the excise tax on alcoholic beverages, the previous studies [Chaloupka et al. (2002); Wagenaar et al. (2009)] show that people are sensitive to this tax. Also, increases in this tax reduce the consumption of alcoholic beverages. According to the experimental study conducted by Chetty et al. (2009), when people are aware that the excise tax on alcoholic beverages is included in the price, they reduce their consumption of alcoholic beverages.

Although some studies consider excise taxes as an externality tax, others show that these taxes do not reduce or internalize negative externalities. For example, Rietveld and Woudenberg (2005) and Santos (2017) provide evidence that excise taxes on fuel are very weak in reducing negative externalities. Curti et al. (2019) concluded that the excise tax on tobacco products effectively reduced cigarette consumption. The increase in this tax caused people to use illegal cigarettes and increased the informal economy.

Very few studies measure attitudes towards the excise tax applied in Turkey. From these studies, Gergerlioğlu (2017) concluded that the excise tax on fuel reduces the frequency of vehicle use, and people prefer vehicles that consume less energy. Hayrulloğlu (2015) states that the excise tax levied on alcoholic beverages and tobacco products do not cause much change in the consumption of individuals in terms of public health. However, it provides significant revenue to the government. Çetin and Özkan (2018) provide evidence that increases in excise tax on alcoholic beverages and tobacco products do not reduce consumption of these products.

So far, no study has examined whether the excise tax applied in Turkey is an externality tax. In this context, the study has two main objectives. The first aim is to determine the factors affecting the perception of excise tax by measuring individuals' attitudes, behaviors, and perceptions towards the excise tax applied in Turkey. The second aim is to reveal whether this tax is an externality tax based on the attitudes and behaviors of individuals towards the excise tax. This study contributes to the existing literature that the excise tax is an externality tax. Also, this study is one of the rare studies that measure the perception of excise tax applied in Turkey.

EXCISE TAX IMPLEMENTATION IN OECD COUNTRIES

Although there is agreement on excise taxes on certain products between the European Union (EU) and OECD member countries, there are differences in practice. For

example, countries like Turkey, Australia, Canada, Belgium, and France apply a single excise tax to tax goods subject to particular consumption. Many countries, such as England and Switzerland, tax these goods separately, including tobacco tax, alcoholic beverage tax, and fuel tax. Also, the tariffs applied by countries to product groups subject to excise differ.

In the international arena, the EU took the first step towards harmonizing excise taxes in 1992 (Gebauer et al., 2005). First, the EU divided excise taxes into three main product groups: tobacco and tobacco products, alcohol and spirits, and mineral oils. In 2003 and 2004, it added energy products and electrical groups to these product groups. It made partial harmonization for product groups. However, the rates and amounts of excise tax applied to these groups vary depending on economic factors and factors such as the traditions of the countries, consumption habits, and the importance given to protecting the environment (Tyc, 2008: 88).

Excise tax covers a wide variety of product groups in some country applications. Alcoholic beverages, tobacco products, and mineral oils are common among these product groups in all OECD countries. In recent years, governments have frequently used the excise tax to provide revenue and influence people's consumption behavior who consume products harmful to health and the environment (OECD, 2018: 120). However, since the demand for tobacco products and alcoholic beverages is rigidly elastic, it is challenging to change people's consumption behavior through the excise tax (Warren, 2008: 15).

While specific tax bases are preferred in excise tax generally, some countries may prefer the ad Valorem tax base. Specific bases are preferred in excise tax, significantly reducing negative externalities. The taxation of alcoholic beverages according to the degree of alcohol and the lead content of petroleum products are some significant examples of this case (Keen, 1998: 20).

Countries tax alcoholic beverages at different rates or amounts. For example, the Czech Republic, Germany, Luxembourg, Slovak Republic, and Turkey have taxed around USD five per hectoliter in the taxation of beer. Finland charges USD 41, and Israel USD 66 in tax. Australia, Canada, Iceland, Mexico, the Netherlands, Norway, and Switzerland apply a progressive tariff in the taxation of beer. In addition, Austria, Czech Republic, Germany, Hungary, Israel, Italy, Luxembourg, Portugal, Slovak Republic, Slovenia, Spain, and Switzerland do not charge tax on wine. Finland and Ireland charge more than USD four per liter of wine, and Norway more than USD six. Australia, Chile, Korea, and Mexico apply

a value-based tariff to wine instead of a quantity-based tariff (OECD, 2020: 136).

There is harmonization and integration between the EU member countries in the taxation of tobacco products. There are two methods for taxing cigarettes from tobacco products: the minimum excise tax as a percentage of the cigarette price and the excise tax per thousand cigarettes. Although there is harmonization among EU member countries, the rates and amounts of excise tax applied by governments to tobacco products differ. For example, in countries among the founding members of the EU (Belgium, France, Germany, and Luxembourg), high amounts of excise tax are collected from cigarettes. On the other hand, in countries such as the Czech Republic, Poland, and Hungary, which joined the EU in 2004 and later, the excise tax on cigarettes is relatively lower. Although different rates and amounts of excise tax are applied to tobacco products in general, the tax imposed has increased the prices of these products and reduced their affordability (Blecher et al., 2013: 1).

Mineral oils are taxed by dividing them into product categories according to their technical characteristics. Basic product categories are unleaded gasoline, diesel, liquid petroleum gas (LPG), and fuel oil. In addition to these products, some OECD countries also tax energy products such as natural gas, electricity, and coal in this context. The directive published by the EU in 2003 has also influenced the taxation of energy products (OECD, 2018: 126). The main reason for the tax on mineral oils and energy products in EU countries is to reduce greenhouse gas emissions. Carbon dioxide emissions from the transportation sector increased by 34 percent in 1990-2008, especially for the Eurozone (Novytska, 2013: 8). For instance, Israel, England, the Netherlands, and Sweden apply the highest excise tax to fuel products such as diesel and gasoline used in vehicles. However, the USA, Canada, and Chile apply the lowest excise tax. While Israel, Estonia, and Sweden receive higher excise tax than other countries for fuel oil used in homes, Canada, Belgium, and Japan receive lower excise tax amounts (OECD, 2018: 150-160).

In 2002, Turkey started to implement the excise tax to simplify the complex structure of indirect taxes, comply with EU legislation, save energy, and affect consumer preferences in goods harmful to the environment and human health. The goods that constitute the subject of excise tax, which has a single-tier tax structure, are divided into four groups (Ulgen, 2002: 30): Fuel products and mineral oils; motor land, sea, and air vehicles; alcoholic beverages, beer, wine, carbonated and cola drinks, and tobacco and tobacco products; luxury goods and household appliances

include refrigerators, washing machines, air conditioners, televisions.

The excise tax base is determined as specific and ad Valorem regarding the type of goods subject to tax. In this context, a quantity-based tax base was preferred for fuel products and mineral oils, and the tax amount was determined as fixed. The value-based tax base was generally preferred for the other goods subject to excise tax, and the tax amount was determined as fixed or proportional.

Except for tobacco and tobacco products, which are the subject of excise tax in Turkey, the rates and amounts of excise tax applied to other product groups are above OECD averages. Although the excise tax tariff on tobacco products is below the OECD average, the price of tobacco products is close to the OECD average, as a high value-added tax is levied on these products (OECD, 2020: 143-165). Another aspect of the excise tax application in Turkey that differs from other countries is that the goods subject to luxury consumption are broad.

RESEARCH METHODOLOGY

We conducted this study, which we carried out in order to measure the excise tax perception of the society and to determine the factors affecting this perception, with 1,304 people across Turkey using face-to-face and online survey methods. We collected the data for the study in February 2021. We reached a sufficient number of participants at the regional level by participating in the survey from all provinces. The survey of this study was created by the researchers, benefiting from previous studies by Dornstein (1987), Torgler and Schneider (2007), and Devos (2008).

We conducted a pilot study on 80 people to minimize scale errors. Since the excise tax affects all segments of society, we randomly selected the sample without clustering, except to reach a certain number in demographic groups. The hypothesis of the study is:

H_1 : Excise tax is an externality tax.

H_0 : Excise tax is not an externality tax.

One of the purposes of implementing the excise tax in Turkey is to influence consumer preferences for products harmful to the environment and human health. Thus, the consumption of these products can be reduced. The created hypothesis will test whether the excise tax is perceived as an externality tax. In addition, the "What are the factors affecting the perception of the excise tax?" question will be answered.

EMPIRICAL FINDINGS

The Cronbach's alpha coefficient obtained from the reliability analysis of the scale used in the analysis is 0.727. We chose a five-point Likert scale for the survey statements, excluding demographic factors. We coded this scale as "Strongly Disagree: 1" and "Strongly Agree: 5".

The data from the survey study conducted throughout Turkey on the perception of excise tax were analyzed using OLS regression models. First, four questionnaire statements tested to be a factor were averaged and transformed into a single variable. This variable was coded as "Excise Tax Perception" and used as the analysis's dependent variable. We calculated the mean value of the dependent variable as 2.99.

These statements and their average values are as follows.

1. I know from which goods and services excise tax is taken (Mean: 3.24).
2. The purpose of the excise tax is to provide revenue to the government (Mean: 3.41).
3. The excise tax aims to reduce the consumption of goods harmful to human health (Mean: 2.46).
4. Excise tax helps ensure income distribution and taxation (Mean: 2.41).

After conducting a regression analysis, we separated the factors that affect the perception of excise tax into demographic, socio-cultural, economic, and institutional factors. Studies such as Frey and Torgler (2007), Torgler et al. (2008), and Marandu et al. (2015) have been used in grouping the factors. The level of explanation (R-squared value) of the excise tax perception of the first model is 22.48 percent. Four more different models were created by adding "Excise tax/Externality relationship-2", "Excise tax/Externality relationship-3", "Requirement of excise tax-2", and "Excise tax rate-2" variables, respectively, to this model. The explanation level of the excise tax perception of the last model has increased to 30.62 percent. This percentage shows that the models created to explain the excise tax perception are meaningful. We also performed robustness tests for each model.

Demographic Factors

In the study, gender, marital status, age, city of residence, education status, profession, monthly average income, motor vehicle ownership, zero km car purchase or not were used as demographic factors (See Table

A.1). In addition, the frequency of smoking and the consumption of carbonated beverages and alcoholic beverages were used as harmful product consumption (See Table A.2).

Approximately 39% of those participating in the research are female, 61% are male; 55% are married, 45% are single; 71% are young (18-35 years old), 24% are middle age (36-50 years old), 5% elderly (51 years and above); 41% is official, 59% is in the other profession group. Participants are divided into five groups in terms of monthly average income. Approximately 36% of the participants are low-income [0-2000 ₺ (Turkish Lira)], 31% low-middle income (2001-4000 ₺), 26% upper-middle-income (4001-6500 ₺), 5% high-income (6501-10000 ₺), 2% the highest income group (10001 ₺ and above). The provinces in which participants lived were grouped by geographical region. The regions where participants live were added as control variables in the models created.

According to the results, excise tax perception differs significantly in terms of the monthly average income of the individuals, the frequency of smoking, and the frequency of consuming carbonated drinks. Statistically, at the 5% significance level, individuals in the high-income group have a negative excise tax perception than those in other income groups. Individuals who smoke more frequently have a positive excise tax perception than others at the 10% significance level. The excise tax perception of individuals who consume carbonated beverages more frequently is positively differentiated at the 5% significance level.

Socio-Cultural Factors

The questionnaire statements coded as "General tax awareness" and "Excise tax awareness," which are used as socio-cultural factors in the regression analyzes, are given below:

1. Paying taxes is a civic duty (Tax awareness-1, Mean: 3.73).
2. Taxes are the equivalent of public expenditures (Tax awareness-2, Mean: 3.38).
3. I closely follow the excise tax rates and amounts (Excise tax awareness-1, Mean: 2.99).
4. When buying a product, I check whether this product is subject to excise tax or not (Excise tax awareness-2, Mean: 2.79).

According to the results of the analysis, excise tax perception differed significantly at the level of 1% in

Table 1. Factors Affecting Excise Tax Perception (OLS Regression Analysis Results)

Variables	MODEL - 1		MODEL - 2		MODEL - 3		MODEL - 4		MODEL - 5	
	Coeff.	t stat.	Coeff.	t stat.	Coeff.	t stat.	Coeff.	t stat.	Coeff.	t stat.
Demographic Factors										
Male	-0.019	-1.09	-0.021	-1.25	-0.022	-1.31	-0.030*	-1.76	-0.027	-1.64
Single	-0.015	-0.76	-0.012	-0.63	-0.009	-0.50	-0.008	-0.43	-0.009	-0.47
Teenager	-0.029	-0.64	-0.028	-0.64	-0.029	-0.67	-0.033	-0.77	-0.029	-0.69
Official	0.004	0.88	0.009*	1.67	0.008	1.46	0.006	1.23	0.006	1.23
High income	-0.045**	-2.07	-0.045**	-2.16	-0.046**	-2.24	-0.047**	-2.36	-0.045**	-2.28
Education	0.008	0.51	0.014	0.93	0.016	1.06	0.012	0.79	0.012	0.80
Harmful Product Consumption										
Smoking	0.024*	1.82	0.023*	1.83	0.025**	2.04	0.022*	1.77	0.022*	1.77
Carbonated beverage consumption	0.039*	1.81	0.043**	2.09	0.041**	2.04	0.042**	2.08	0.041**	2.03
Alcoholic beverage consumption	-0.014	-0.63	-0.003	-0.15	0.011	0.54	0.016	0.77	0.019	0.91
Socio-Cultural Factors										
Tax awareness-1	0.090***	4.99	0.082***	4.65	0.079***	4.53	0.063***	3.58	0.063***	3.62
Tax awareness-2	0.099***	5.57	0.081***	4.65	0.079***	4.68	0.073***	4.31	0.068***	3.97
Excise tax awareness-1	0.065***	3.40	0.056***	3.10	0.063***	3.53	0.067***	3.78	0.067***	3.81
Excise tax awareness-2	0.027	1.62	0.021	1.32	0.018	1.18	0.018	1.17	0.018	1.19
Economic Factors										
Update in excise tax tariffs	0.073***	3.90	0.056***	3.10	0.042**	2.31	0.036**	1.95	0.037**	2.00
Scope of excise tax	0.098***	4.94	0.090***	4.82	0.085***	4.66	0.077***	4.13	0.075***	4.05
Excise tax/Expenditure Relationship	-0.057***	-2.62	-0.053**	-2.56	-0.049**	-2.38	-0.044**	-2.14	-0.044**	-2.13
New car purchase	0.017	0.79	0.009	0.47	0.013	0.65	0.022	1.07	0.033	1.61
Cigarettes etc. products	0.075***	4.81	0.054***	3.62	0.016	0.99	0.009	0.62	0.014	0.91
Excise tax rate-1	-0.032	-1.23	-0.023	-0.99	-0.017	-0.73	-0.010	-0.47	0.002	0.12
Institutional Factors										
Requirement of excise tax-1	-0.046**	-2.23	-0.039**	-2.04	-0.043**	-2.28	-0.029	-1.56	-0.025	-1.31
Excise tax reduction	-0.011	-0.49	-0.002	-0.12	-0.005	-0.22	-0.003	-0.17	0.008	0.38
Excise tax/Externality Relationship-1	0.032**	2.17	0.033**	2.35	0.048***	3.34	0.051***	3.52	0.053***	3.71
Other Variables Added to the Model										
Excise tax/Externality Relationship-2			0.133***	8.64	0.122***	7.95	0.121***	7.99	0.120***	7.93
Excise tax/Externality Relationship-3					0.092***	5.44	0.091***	5.51	0.089***	5.35
Requirement of excise tax-2							-0.072***	-3.93	-0.071***	-3.91
Excise tax rate-2									-0.070***	-2.72
Observations	1,304		1,304		1,304		1,304		1,304	
Prob.	0.0000		0.0000		0.0000		0.0000		0.0000	
R-squared	0.2248		0.2732		0.2913		0.3013		0.3062	

Dependent Variable: Excise tax perception.

Reference Groups: Male, Single, Teenager, Official, High income.

Significance Levels: * 0.05 < p < 0.10, ** 0.01 < p < 0.05, *** p < 0.01

“Tax awareness-1”, “Tax awareness-2”, and “Excise tax awareness-1”. On the other hand, no significant difference was found in “Excise tax awareness-2”. Accordingly, those who see paying taxes as a civic duty and those who see taxes as the equivalent of public expenditures made by the government have a favorable view of excise tax compared to other individuals. These findings show that individuals with high tax awareness have a positive excise tax perception. In addition, those who closely follow

excise tax changes have a positive excise tax perception compared to other individuals.

Economic Factors

Survey statements used as economic factors in regression analyzes are as follows:

1. The goods on which excise tax is taken should be updated every year (Update in excise tax tariffs, Mean: 3.55).

2. Excise tax must be taken from the household appliance (refrigerator, washing machine, Etc.) (Scope of excise tax, Mean: 2.01).
 3. Excise tax directly affects my expenses. (Excise tax/Expenditure relationship, Mean: 3.84).
 4. Excise tax, taken from motor vehicles, prevents me from buying a new car (New car purchase, Mean: 3.91).
 5. Excise tax should be taken from addictive products such as cigarettes (Cigarettes Etc. products, Mean: 3.75).
 6. The excise tax charged on petroleum and petroleum products is high (Excise tax rate-1, Mean: 4.25).
 7. Excise tax rates and amounts are high (Excise tax rate-2, Mean: 4.18).
2. The excise tax application in Turkey should be ended (Requirement of excise tax-2, Mean: 3.27).
 3. Excise tax received from goods harmful to human health is high (Excise tax/Externality relationship-1, Mean: 2.94).
 4. Excise tax rates taken from goods harmful to human health should be increased (Excise tax/Externality relationship-2, Mean: 3.51).
 5. Excise tax taken from goods harmful to human health is the cost of health expenses made to individuals using them (Excise tax/Externality relationship-3, Mean: 2.62).
 6. Excise tax reductions are required (Excise tax reduction, Mean: 4.14).

According to the results, excise tax perception, from economic factors is "Update in excise tax tariffs," "Scope of excise tax," "Excise tax/Expenditure relationship," "Cigarettes, Etc. products," and "Excise tax rate-2" also differ significantly. Apart from these, no significant differences were found in "New car purchase" and "Excise tax rate-1".

1% in the first two models and a 5% significance level in the last three models, the perception of excise tax of those who think that goods subject to excise tax should be updated every year is favorable compared to those who do not care about it. The excise tax perception of those who think that excise tax should be taken from white goods is statistically positive at the 1% significance level compared to those who do not. The perception of excise tax by those who think it directly affects their spending is more negative at 5% significance than those not in this opinion. In the first two models, the perception of excise tax of those who think that excise tax should be taken from addictive products such as cigarettes is more positive at the 1% significance level than those not in this idea. The excise tax perception of those who believe that excise tax rates and amounts are high in Turkey differs negatively at the 1% significance level.

Institutional Factors

The following survey statements were used as an institutional factor in the regression analyzes:

1. The scope of goods and services subject to excise tax should be narrowed (Requirement of excise tax-1, Mean: 3.77).

According to the regression analysis results, excise tax perception, from institutional factors is "Requirement of excise tax-1", "Requirement of excise tax-2", "Excise tax/Externality relationship-1", "Excise tax/Externality relationship-2", and "Excise tax/Externality relationship-3" also differ significantly. On the other hand, no significant difference was found in the "Excise tax reduction."

In the first three models with a 5% significance level, the perception of excise tax by those who think that the scope of goods subject to excise tax should be narrowed is negative compared to those who disagree with this view. Statistically, at the 1% significance level, those who think that excise tax should be stopped in Turkey have a negative view of excise tax.

The perception of excise tax from those who think that excise tax from goods harmful to human health is high and should be increased further is more positive at the 1% significance level than those not in this idea. Supporting this finding, the perception of excise tax for those who think that excise tax taken from goods harmful to human health is the price of health expenses made to individuals who use them is also positive at a 1% significance level. In this case, the H_0 hypothesis is rejected, and the H_1 hypothesis is accepted. That is, individuals perceive the excise tax as an externality tax.

CONCLUSIONS

The survey throughout Turkey measured society's attitude, behavior, and perception toward excise tax. According to the results, participants generally stated that excise tax tariffs applied in Turkey are high, and the scope of excise tax should be narrowed. The participants think that the purpose of the excise tax is to provide

revenue to the government. The rate of participation in the survey statements stating that the excise tax rates taken from goods harmful to human health should be increased and that the excise tax prevents the purchase of a new car is noticeably high.

According to the regression analysis results, the excise tax perception differs significantly among demographic factors only in income, smoking frequency, and the frequency of consuming carbonated beverages. According to this, while individuals in the high-income group have a negative excise tax perception, individuals who consume harmful products such as cigarettes and carbonated beverages more frequently have a positive tax perception. No significant difference was found in other demographic variables.

The tax perception of individuals with high excise tax awareness is more positive than others. Those who expect an update in their excise tax tariffs every year have a more positive view of excise tax. On the other hand, those who think that the excise tax directly affects their expenditures have a negative view of it in general. Those who think that the excise tax application in Turkey should be ended or the scope of the goods subject to excise tax should be narrowed have higher negative perceptions about excise tax.

One reason for applying the excise tax is to reduce the consumption of goods harmful to health and the environment. According to the regression analysis results, the attitudes of those who think that the excise tax taken from harmful goods is high and that it should be increased even more have a positive attitude towards excise tax. The findings obtained from the study, which are limited to the perceptions, attitudes, and behaviors of individuals towards the excise tax in Turkey, support that the excise tax is an externality tax. This result indicates that there may be a relationship between excise tax revenues and the consumption of harmful goods to health or the environment. From this point of view, this study guides future studies to test whether the excise tax is an externality tax with various time series.

REFERENCES

- Baumol, W. J. (1972). On Taxation and the Control of Externalities. *The American Economic Review*, 62(3): 307-322.
- Blecher, E. H., Ross, H. and Stoklosa, M. (2013). Lessons Learned from Cigarette Tax Harmonisation in the European Union. *Tobacco Control*, 0: 1-3.
- Buchanan, J. M. (1969). External Diseconomies, Corrective Taxes and Market Structure. *The American Economic Review*, 59(1): 174-177.
- Chaloupka, F. J., Grossman, M. and Saffer, H. (2002). The Effects of Price on Alcohol Consumption and Alcohol-Related Problems. *Alcohol Research & Health*, 26(1): 22-34.
- Chetty, R., Looney, A. and Kroft, K. (2009). Salience and Taxation: Theory and Evidence. *The American Economic Review*, 99(4): 1145-1177.
- Cnossen, S. (2010). Excise Taxation in Australia. In Melbourne Institute – Australia's Future Tax and Transfer Policy Conference (236-256 pp.). Proceedings of a Conference.
- Curti, D., Shang, C., Chaloupka, F. J. and Fong, G. T. (2019). Tobacco Taxation, Illegal Cigarette Supply and Geography: Findings from the ITC Uruguay Surveys. *Tobacco Control*, 28: 53-60.
- Çetin, M. and Özkan, E. (2018). Türkiye'de Vergi-Tüketim İlişkisi: Alkol ve Tütün Ürünlerine Yönelik Bir Saha Araştırması. *Balıkesir Üniversitesi Sosyal Bilimler Enstitüsü Dergisi*, 21(40): 271-287.
- DeCicca, P. and McLeod, L. (2008). Cigarette Taxes and Older Adult Smoking: Evidence from Recent Large Tax Increases. *Journal of Health Economics*, 27(4): 918-929.
- Devos, K. (2008). Tax Evasion Behaviour and Demographic Factors: An Exploratory Study in Australia. *Revenue Law Journal*, 18(1): 1-43.
- Diamond, P. A. (1973). Consumption Externalities and Imperfect Corrective Pricing. *The Bell Journal of Economics and Management Science*, 4(2): 526-538.
- Dornstein, M. (1987). Taxes: Attitudes and Perceptions and Their Social Bases. *Journal of Economic Psychology*, 8(1): 55-76.
- Eckerstorfer, P. and Wendner, R. (2013). Asymmetric and Non-Atmospheric Consumption Externalities, and Efficient Consumption Taxation. *Journal of Public Economics*, 106: 42-56.
- Farley, S. M., Coady, M. H., Mandel-Ricci, J., Waddell, E. N., Chan, C., Kilgore, E. A. and Kansagra, S. M. (2015). Public Opinions on Tax and Retail-Based Tobacco Control Strategies. *Tobacco Control*, 24(1): e10-e13.
- Frey, B. S. and Torgler, B. (2007). Tax Morale and Conditional Cooperation. *Journal of Comparative Economics*, 35(1): 136-159.
- Gebauer, A., Nam, C. W. and Parsche, R. (2005). Lessons of the 1999 Abolition of Intra-EU Duty Free Sales for the New EU Member States. *CESifo Economic Studies*, 55(1): 133-157.
- Gergerlioğlu, U. (2017). Otomobil Yakıt Tüketimi ile Alakalı Vergilere İlişkin Tutum ve Davranışların Analizi: İstanbul Örneği. *Erciyes Üniversitesi İktisadi ve İdari Bilimler Fakültesi Dergisi*, 49: 59-86.
- Gruber, J. and Koszegi, B. (2004). Tax Incidence when Individuals are Time-Inconsistent: The Case of Cigarette Excise Taxes. *Journal of Public Economics*, 88(9-10): 1959-1987.
- Hayrulloğlu, B. (2015). Türkiye'de Tütün Mamulleri ve Alkollü İçkilerde Özel Tüketim Vergisinin Başarısı. *Journal of Life Economics*, 2: 89-112.
- Hines, J. R. (2007). Taxing Consumption and Other Sins. *Journal of Economic Perspectives*, 21(1): 49-68.
- Keen, M. (1998). The Balance Between Specific and Ad Valorem Taxation. *Fiscal Studies*, 19(1): 1-37.
- King, J. L., Shan, L. and Azagba, S. (2020). Association Between Purchasing Behaviors and Cigar Use: A Longitudinal Analysis of Waves 1-3 of the Population Assessment of Tobacco and Health (Path) Study. *Plos One*, 15(6): 1-10.
- Li, S., Linn, J. and Muehlegger, E. (2014). Gasoline Taxes and Consumer Behavior. *American Economic Journal*, 6(4): 302-342.
- Marandu, E. E., Mbekomize, C. J. and Ifezue, A. N. (2015). Determinants of Tax Compliance: A Review of Factors and Conceptualizations. *International Journal of Economics and Finance*, 7(9): 207-218.

Novytska, N. V. (2013). European Practice in Excise Taxation on Mineral Oil Products (Eds. P. Bula, O.O. Drugov and J. Fudalinski), in Management and Development of Financial Systems in Eastern European Countries: Current State and Problems (235-242). Cracow: Cracow University of Economics.

O'Donoghue, T. and Rabin, M. (2006). Optimal Sin Taxes. *Journal of Public Economics*, 90(10-11): 1825-1849.

OECD. (2018). Consumption Tax Trends 2018: VAT/GST and Excise Rates, Trends and Policy Issues. Paris: OECD Publishing.

OECD. (2020). Consumption Tax Trends 2020: VAT/GST and Excise Rates, Trends and Policy Issues. Paris: OECD Publishing.

Pigou, A. C. (1920). *The Economics of Welfare*. London: Macmillan and Company.

Plott, C. R. (1966). Externalities and Corrective Taxes. *Economica*, 33(129): 84-87.

Rietveld, P. and Woudenberg, S. (2005). Why Fuel Prices Differ. *Energy Economics*, 27(1): 79-92.

Santos, G. (2017). Road Transport and CO2 Emissions: What are the Challenges?. *Transport Policy*, 59: 71-74.

Scott, K. R. (2012). Rational Habits in Gasoline Demand. *Energy Economics*, 34(5): 1713-1723.

Song, Y. and Yarbrough, T. (1978). Tax Ethics and Taxpayer Attitudes: A Survey. *Public Administration Review*, 38(5): 442-452.

Torgler, B., Demir, I. C., Macintyre, A. and Schaffner, M. (2008). Causes and Consequences of Tax Morale: An Empirical Investigation. *Economic Analysis and Policy*, 38(2): 313-339.

Torgler, B. and Schneider, F. (2007). What Shapes Attitudes Toward Paying Taxes? Evidence from Multicultural European Countries. *Social Science Quarterly*, 88(2): 443-470.

Tyc, V. (2008). Harmonization of Indirect Taxes in the European Union. *International Journal of Law and Management*, 50(2): 87-92.

Ulgen, S. (2002). *Excise Tax in all Aspects*. Istanbul: Publications of the Association of Financial Accountants.

Wagenaar, A. C., Salois, M. J. and Komro, K. A. (2009). Effects of Beverage Alcohol Price and Tax Levels on Drinking: A Meta-Analysis of 1003 Estimates from 112 Studies. *Addiction*, 104(2): 179-190.

Warren, N. (2008). A Review of Studies on the Distributional Impact of Consumption Taxes in OECD Countries. *OECD Social, Employment and Migration Working Papers*, 64.

APPENDICES

Table A.1. Frequency Distributions of Demographic Variables

Variables		Frequency	Percent
Gender	Female	510	39.1
	Male	794	60.9
Marital Status	Married	715	54.8
	Single	589	45.2
Age	18-35	930	71.3
	36-50	313	24.0
	51 and above	61	4.7
Education	Not graduated	24	1.8
	Primary education	78	6.0
	High school	182	14.0
	Associate	159	12.2
	Bachelor	674	51.7
Income	Master/Doctorate	187	14.3
	0-2.000 ₺	472	36.2
	2.001-4.000 ₺	404	31.0
	4.001-6.500 ₺	343	26.3
Region of residence	6.501-10.000 ₺	63	4.8
	10.001 ₺ and above	22	1.7
	Mediterranean	214	16.4
	Aegean	401	30.8
	Marmara	241	18.5
	Black Sea	68	5.2
	Central Anatolia	255	19.6
Profession	East Anatolia	81	6.2
	Southeast Anatolia	44	3.4
	Housewife	86	6.6
	Student	292	22.4
	Retired	32	2.5
	Self-employed	108	8.3
	Worker	178	13.7
	Tradesman	65	5.0
Motor vehicle ownership	Official	541	41.5
	Farmer	2	0.2
New car purchase	Yes	647	49.6
	No	657	50.4
New car purchase	Yes	242	18.6
	No	1062	81.4

Table A.2. Frequency Distributions of Harmful Product Consumption

Variables	Smoking		Carbonated beverage consumption		Alcoholic beverage consumption	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
Never	707	54.2	107	8.2	860	66.0
Rarely	139	10.7	568	43.6	204	15.6
Sometimes	110	8.4	464	35.6	176	13.5
Usually	170	13.0	130	10.0	50	3.8
Always	178	13.7	35	2.7	14	1.1