AN EMPIRICAL ANALYSIS OF TAX MORALE IN BOSNIA-HERZEGOVINA

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Abstract

Tax morale is defined an intrinsic motivation of paying taxes, and it is closely related to tax compliance. It is essential to search determinants of tax morale for a comprehensive understanding of tax compliance . In this paper, determinants of tax morale in Bosnia-Herzegovina are searched. Tax morale is an ordered categorical dependent variable. Therefore, ordered probit model is estimated to derive the relations between tax morale and relevant variables. The magnitudes of estimated coefficients are not interpreted; their signs are taken into account since ordered probit model refers to a nonlinear equation. The marginal effects are computed to determine the effect of each variable on tax morale. Marginal effect indicates the change in the probability of specific tax morale category when an independent variable changes by one unit. The indicators related to demographic features (gender, age, marital status), employment status (self employed, retired, student etc.), economic status (income levels) and social capital (religiosity, confidence in government, confidence in justice system, confidence in parliament, education levels etc.) are the independent variables used in the model. The effects of these variables on tax morale are analyzed . For this aim, a relevant dataset obtained from European Values Study (EVS) database is used in estimating the model. EVS is a survey researching socio-cultural and political changes in Europe. The question related to tax morale in the survey is classified as the dependent variable of the model. The findings from the estimated model suggest that some of the social capital variables, demographic factors and income level have important effects on tax morale.

Keywords: Tax morale, Tax Compliance, Public Finance, Ordered Probit Model

BOSNA-HERSEK İÇİN VERGİ AHLAKININ UYGULAMALI ANALİZİ

Özet

Vergi ahlakı vergi ödemeyle ilgili bir içsel motivasyon olarak tanımlanmaktadır ve vergi uyumu ile yakından ilişkilidir. Vergi uyumunun daha iyi anlaşılabilmesi için vergi ahlakının belirleyicileri üzerinde araştırma yapmak önemlidir. Bu çalışmada Bosna-Hersek için vergi ahlakının belirleyicileri araştırılmaktadır. Vergi ahlakı kategorik bağımlı değişkendir. Bu yüzden, vergi ahlakı ve ilgili değişkenler arasındaki ilişkileri tanımlamak için sıralı probit modeli tahmin edilmektedir. Tahmin edilen katsayıların büyüklülükleri analiz edilmemektedir; sıralı probit modeli doğrusal olmayan denklemi işaret ettiği için bu katsayıların işaretleri dikkate alınmamaktadır. Her bir değişkenin vergi ahlakı üzerindeki etkisini belirlemek için marjinal etkiler hesaplanmıştır. Marjinal etki bağımsız değişken bir birim değiştiğinde belirli bir vergi ahlakı kategorisinin olasılığındaki değişimi göstermektedir. Demografik özelliklere ilişkin göstergeler (cinsiyet, yaş, medeni durum), istihdam durumu göstergeleri (kendi işinin sahibi, emekli, öğrenci vs.), ekonomik statü unsurları (gelir düzeyi) ve sosyal sermaye faktörleri (dindarlık, hükümete güven, parlamentoya güven, eğitim düzeyi, vs.) modelde kullanılan bağımsız değişkenlerdir. Bu değişkenlerin vergi ahlakı üzerindeki etkileri analiz edilmektedir. Bu amaçla, model tahmini için Avrupa Değerler Araştırması (EVS) veri tabanından alınmış ilgili veri

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seti kullanılmaktadır. EVS Avrupa'daki sosyo-kültürel ve politik değişimleri analiz eden bir araştırmadır. Bu araştırmada vergi ahlakı ile ilgili soru modelin bağımlı değişkeni olarak alınmaktadır. Tahmin edilen modelden elde edilen bulgular bazı sosyal sermaye değişkenlerinin, demografik faktörlerin ve gelir düzeyinin vergi ahlakı üzerinde önemli etkileri olduğunu söylemektedir.

Anahtar Kelimeler: Vergi Ahlakı, Vergi Uyumu, Kamu Maliyesi, Sıralı Probit Modeli

1. Introduction

Tax morale is defined an intrinsic motivation of paying taxes and it is closely related to tax compliance. There are some socio-economic factors that affect tax morale. In this paper, we mainly analyzed the determinants of tax morale for Bosnia-Herzegovina. Four categories are defined regarding with the determinants of tax morale; 1) demographic factors, 2) employment status, 3) economic status, 4) social capital variables. By taking these determinants as independent variables, the ordered probit model is estimated. We focus on analyzing the direction and the relative magnitude of the marginal effects of these variables on tax morale. In other words, we aim to derive the general profile of tax morale for Bosnia-Herzegovina.

For this purpose, we used European Values Study (EVS) database. EVS is a survey which researched socio-cultural and political changes in Europe. The fourth wave has 47 countries representing the majority of the European population. The fourth wave of the EVS is used for this aim. This survey has been conducted in 2008. It is the most recent survey for Bosnia-Herzegovina. In this survey, the research area is defined as Bosnia-Herzegovina persons 18 years or older who are resident within private household, regardless of nationality and citizenship or language. The survey conducted between July 12th and 31st in 2008. By doing Face-to-face interviews, the data is collected by PULS doo, Sarajevo, Bosnia-Herzegovina.

Tax morale is, to large extent, to do with the physiological background of the behaviors of tax evasion. In other words, tax morale is concerned with why people do not evade. There has been much in common between tax morale and tax compliance. Tax compliance is an observable action; most people pay their taxes. Tax compliance is fairly related to the individual's willingness to comply with and to evade. As Torgler (2007) pointed out, level of tax compliance is relatively high when tax morale is high; therefore tax morale is needed for providing on an account of the puzzle of tax compliance.

Determinants of tax morale are needed to be investigated for understanding of tax compliance. There is a limited work on the issue in the existing literature. (Torgler, 2004, 239). As Feld and Frey (2002, 88) suggest "Most studies treat 'tax morale' as a black box without discussing or even considering how it might arise or how it might be maintained. It is usually perceived as being part of the meta-preferences of taxpayers and used as the residuum in the analysis capturing unknown influences to tax evasion. The more interesting question then is which factors shape the emergence and maintenance of tax morale" Indeed, a few scholars conducted researches on tax morale in details.

By definition, tax morale is an intrinsic motivation of paying taxes. (Torgler, 2007, 4). Morality could be defined as an individual's internalization of such concept and legal rules to perform his or her social duties in a proper way. Hence, individuals'

general attitude (or tax mentality) towards taxation and specific liabilities imposed by the related legislation is substantial to the debate. From this perspective, tax morale is largely framed in the general concept of tax mentality. (Schmölders, 1976, 107).

For Torgler (2004), tax morale measures taxpayers' attitudes while tax evasion measures taxpayers' behaviors. In other words, tax morale is not an outcome variable, like tax evasion. Tax morale can, hence, be defined as a morale obligation of paying taxes; it is, in turn a belief of contributing to society by paying taxes.

2. Determinants of Tax Morale

Tax morale and tax compliance are affected by physiological and social factors. Therefore, changes in level of tax morale and tax compliance depend heavily on these factors. It is known that legal infrastructure and state's enforcement power, to some extent, raise the level of tax compliance. Social and physiological factors are still decisive factors to change tax morale. For instance, social capital takes an important role in this part. In other words, social capital evokes individuals' economic and cultural capitals; perceptions on income distribution, on fairness in the society, trust on others and institutions, confidence in government and government policies are some of examples of social capital variables.

Socio-demographic variables affect tax morale substantially. The first of them is the variable of age. Relatively older people are more vulnerable to threats of sanctions, suggested by the relevant studies. As Torgler (2007) points out, the reason is that people are attaining new social characteristics, such as property, status, dependency on others' behaviors as they get older. Therefore the potential costs of penal sanctions for older people seem to be relatively greater. In consequence, there might be a significant relation between tax morale and age. Furthermore, socio-physiological studies reveal that females are more compliant and less selfish than males. Nevertheless, it should be noted that the traditional role of females is substantially different from the role of females in a modern society. Moreover, females have more risk averse behaviors than males have. Due to these reasons, tax morale might be higher for females than males. Marital status is another individualistic variable that might affect tax morale. The more social ties the individual has, the more restrictions imposed on her or his behavior. Thus married individuals are more prone to exhibit legal behaviors and hey might have higher level of tax morale.

For Torgler (2007), employment status is another important factor for tax morale. It might be argued that self employed persons have lower tax morale than full time and part time employees. This might explained by the fact that self employed persons have more opportunities to evade tax. The relation between education level and tax morale is not clear. According to Torgler ve Schneider (2006), educated taxpayers are thought to have more information about tax regulations and fiscal relations. Besides, they might be aware of civil services provided by state, and so they might have high level of tax compliance. On the other hand, they seemingly have knowledge of public corruption and thereby they might have critical perception on how tax revenues are used by government. Moreover, they know a lot about the opportunities to evade tax. As a result of these factors, it is assumed that they have a low level of tax morale. Consequently, there have been different kinds of relations between education level and tax morale. The relation between level of income and tax morale is a bit complicated and thus depends on some conditions. When people are not satisfied with their financial

situation, they might tend to be evader. If a taxpayer feels a gap between his current and desired financial situation, he would be unwilling to pay taxes. Moreover, they would be more reluctant to pay taxes if they feel they have less when they compare their income and their wealth with others'. On the contrary, Duch, Palmer and Anderson (2000) claim that people who have low level of income are willing to pay taxes since they think they have benefit form public goods and services more than people having high level of income have benefit from. Wealthy people, on the other hand, would be less willingly pay taxes by the perception of having benefited from public goods and services less than others.

Taxpayers' confidences in parliament, government, justice system, tax administration have a valuable relation with tax morale. If the levels of these confidences are high enough, individuals' loyalty to public administration would increase and so they would be more willingly to pay taxes. In most of the empirical studies, these variables turn out to have significant relation with tax morale. Montero and Torcal, (2006) defines political disaffection as the subjective feeling of powerlessness, cynicism, lack of confidence in the political process, in politicians and in democratic institutions. In this context, political disaffection is expected to have negative effect on tax morale. In addition, importance of politics and perception on democracy are important factors for explaining tax morale. People seem to be complying more in democratic countries, as they have the ability to affect tax and expenditure policies in these countries. National pride is another interesting factor that should be taken into account on the analyses about tax morale. When people are happy with their national identity, they would be more loyal to their countries, and therefore tax morale would be high. Religiosity is also affecting tax morale; indeed, positive relations between tax morale and religiosity have been found in some researches. As Frank (1996) points out; tax compliance is more common among the people whose perception depends on morale and ethic codes.   Religious people are so interested in what is right and what is wrong; therefore they believe that people have some duties to be performed: paying taxes is one of these duties.

3. Previous Empirical Literature

Studies on tax morale can be evaluated in two categories. The studies in the first group have focused on only one country; they have analyzed regional discrepancies and changes in time. (Torgler (2005), Martinez-Vazquez adn Torgler (2009), Prieto, J., Sanzo, M. J. and Suarez-Pandiello, J. (2006)) For the second group of studies, studies conducted in a comprehensive perspective with more countries included (Torgler and Schneider (2006), Alm and Torgler (2006), Cummings, Martinez-Vazquez, McKee and Torgler (2006)). In these articles two or three countries were taken into account. Torgler (2006), Alm and Torgler (2006) have used wider set of data with many countries.

All studies on tax morale and its determinants used the international databases such as International Social Survey Programme (ISSP), World Values Survey (WVS), European Values Survey (EVS) and African Opinion Survey (Afrobarometer).

Alm and Torgler (2005) compared tax morale levels of USA with Spain by using 1990 and 1995 WVS data that concluded that tax morale level in USA is higher. An explanation of their result might be that "compliance" as a social norm is better in USA when compared in Spain. A further comparative study conducted by Alm ve Torgler (2006) analyzed tax morale in 14 European countries and USA by using WVS

data in 1990-1993; they still found that the highest tax morale is in USA. In both of these articles, weighted ordered probit model was estimated to get the results.

Torgler and Schneider (2006) have a similar research analyzing Spain, Switzerland and Belgium, by using the 1995-1997 WVS and 1999-2000 EVS data. They estimated weighted ordered probit model in which the variables of gender, age, marital status, education, employment status, social class, income level, attendance to church, direct democracy, national pride, confidence in political institutions and government, participation in democracy, income tax rate, fine rate and probability of detection are used as independent variables. The regional discrepancies in Spain and Switzerland affect tax morale, females have higher tax morale than males. They concluded that confidence in justice system, confidence in government, confidence in parliament, national pride, attitudes supporting democracy have positive effect on tax morale.

Torgler (2006) looked at the determinants of tax morale in 32 (including Spain countries by using the WVS data of 1995-1997. The included variables into the weighted ordered probit model are gender, age, marital status, education, employment status, social class, financial situation, risk averness, religiosity, corruption and credibility. The author found out that religiosity in particular for the Catholics, Hindus, and Buddhists increases tax morale. Risk averness and financial satisfaction positively affect tax morale. Tax morale is low for the high-class, and it is high for the retired, housewives, and the part-time employed. In addition, females and married people have high tax morale. On the contrary, there is a negative relation between education and tax morale; perception on level corruption decreases tax morale.

Similar researches were conducted by Cummings et al (2006) analyzing Botswana an South Africa by using Afronarometer data of 1999 and 2000; Gokbunar, Selim ve Yanıkkaya (2007) on Turkey by using EVS data of 2002; Martínez-Vázquez ve Torgler (2009) on Spain by using WVS and EVS data of 1981,1990,1995 and 1999-2000. These scholars provided similar results about the determinants of tax morale; tax morale level heavily depends on socio-demographic and social capital factors.

4. The Model

The methods used by the empirical studies are fairly similar since tax morale is a categorical variable. In general, ordered probit models were preferred to use in determining the relations and the interactions between tax morale and personal, socio-economic factors. Ordered probit models are very useful to analyze dependent variable of tax morale containing ordering information. Therefore, the same estimation method is used in this paper.

The magnitudes of the estimations are not interpreted, only the signs are evaluated because equation in ordered probit model is in the nonlinear form. Thus marginal effects should be derived to determine the effect of each variable on tax morale. Marginal effect indicates the probability of specific tax morale category when an independent variable increases by one unit. In practice, only marginal effects related to the top level of tax morale category have been evaluated.

The ordered probit model can be defined in the following manner (Greene, 2003);

$$y^* = x'\beta + \varepsilon$$

where ε is a normally distributed stochastic variable with zero mean and unit variance. Even if y^* is unobserved, we do observe

$$y = 0 \quad \text{if } y^* \leq 0$$

$$= 1 \quad \text{if } 0 \prec y^* \leq \mu_1$$

$$= 2 \quad \text{if } \mu_1 \prec y^* \leq \mu_2$$

$$\vdots$$

$$= J \quad \text{if } \mu_{J-1} \leq y^*$$

Here, μs are unknown parameters; they would be estimated with β. It is assumed that ε is normally distributed across observations. Morever, the mean and variance of ε are normalized to zero and one.

Dependent variable's probabilities of taking these values for the ordered probit model are

$$P(y = 0|x) = \Phi(-x'\beta)$$

$$P(y = 1|x) = \Phi(\mu_1 - x'\beta) - \Phi(-x'\beta)$$

$$P(y = 2|x) = \Phi(\mu_2 - x'\beta) - \Phi(\mu_1 - x'\beta)$$

$$\vdots$$

$$P(y = J|x) = 1 - \Phi(\mu_{J-1} - x'\beta)$$

For all the probabilities to be positive, we must have

$$0 \prec \mu_1 \prec \mu_2 \prec \ldots \prec \mu_{J-1}$$

Note that marginal effects of the regressors on the probabilities are not equal to the coefficients. For the three categories case, the probabilities are,

$$P(y = 0 \mid \boldsymbol{x}) = 1 - \Phi(\boldsymbol{x}'\beta)$$

$$P(y = 1 \mid \boldsymbol{x}) = \Phi(\mu - \boldsymbol{x}'\beta) - \Phi(-\boldsymbol{x}'\beta)$$

$$P(y = 2 \mid \boldsymbol{x}) = 1 - \Phi(\mu - \boldsymbol{x}'\beta)$$

The marginal effects of changes in the regressors are

$$\frac{\partial P(y = 0 \mid x)}{\partial x} = -\Phi(x'\beta)\beta$$

$$\frac{\partial P(y = 1 \mid x)}{\partial x} = \left[\Phi(-x'\beta) - \Phi(\mu - x'\beta)\right]\beta$$

$$\frac{\partial P(y = 2 \mid x)}{\partial x} = \Phi(\mu - x'\beta)\beta$$

These marginal effects show the effects of changes in regressors on the probability of each categories in dependent variable. Therefore, relations between dependent variable and regressors are measured by marginal effects.

For this paper, European Values Study (EVS) database is used to analyze the level of tax morale and its determinants in Bosnia-Herzegovina. The fourth wave of the EVS is used for this aim. This survey has been conducted in 2008. It is the most recent survey for Bosnia-Herzegovina. Sample size is 1512.

EVS is a survey which researched socio-cultural and political changes in Europe. The fourth wave has 47 countries representing the majority of the European population. In this survey, individuals are asked to respond the following question to evaluate level of tax morale;

Please tell me for the following statement whether you think it can always be justified, never be justified, or something in between: … 'Cheating on tax if you have the chance'. The question leads to a ten-scale index of tax moralee with the two extreme points 'never justified' and 'always justified'.

In the ten-scale index "1" refers to "never justified" and "10" refers to "always justified". The responds close to "1" can be thought as respectively high level of tax morale while the ones close to "10" indicate low level of tax morale. The ten-scale index of tax morale is transformed into four-scale index (0,1,2,3) by the same method used in the related studies. In the transformed scale "0" implies "always justified" and "3" implies "never justified" The responds in the interval 4-10 in the original scale become "0" in the new scale since they imply that people justify tax cheating anyhow. Besides "never justified" option "1" in the original scale now is "3"

The descriptive statistics of all variables used in the model are derived. Table 1 shows these statistics. The rates of persons having specific properties in the whole population are as follows; female 55 %, married 57 %, age interval of 18-29 30 % age interval of 30-49 36 %, age interval of 50-98 34%. Education level 1 is 18 %, education level 2 is 76%, and education level of 3 is 12 %. Of the respondents, 32% is full-time employed, 2.5% is part-time employed, 2.9 % is the self employed, 13 % is the retired, 9.9 % is housewife, 9.1 % is student and 25 % is unemployed. When it comes to the variable of tax morale, 73 % of the individuals have the highest tax morale level. These individuals respond as cheating on tax is never justifiable. The rates of the levels 3 and 2 are 6 % and 5 % respectively. The rate of people saying cheating is always justifiable is 16 %. The rates of income levels are 16% for level 1, 44% for level 2, 20% for level 3.

The variables of religiosity and national pride give the relatively high values as 93% and 57%. The ratio of respondents considering politics is an important issue is relatively low, 35%. Other figures are as follow; confidence in justice system 38%, confidence in government 20%, confidence in parliament 26%, confidence in civil services 35% and confidence in social security system 35%; these figures are relatively low. Therefore, it seems that there is not enough confidence in political and legal structure in Bosnia-Herzegovina. Among the social capital variables, religiosity has the highest figure; 93 % of the respondents define themselves religious. Confidences in entities of the political system are relatively low; from 20% to 38%.

Table 1: Descriptive Statistics of the Variables

Variables	Mean	Std. Dev.	Min.	Max
Tax Morale (level 1)	0.1567	0.3637	0	1
Tax Morale (level 2)	0.0516	0.2213	0	1
Tax Morale (level 3)	0.0615	0.2403	0	1
Tax Morale (level 4)	0.7302	0.4440	0	1
1) Social Capital				
Importance of Politics	0.3459	0.4758	0	1
Confidence in Justice System	0.3803	0.4856	0	1
Confidence in Government	0.2017	0.4014	0	1
Confidence in Parliament	0.2553	0.4362	0	1
Confidence in Civil Services	0.3459	0.4758	0	1
Confidence in Social Security Sy.	0.3499	0.4771	0	1
Religiosity	0.9325	0.2509	0	1
National Pride	0.5694	0.4953	0	1
Satisfaction with Democracy	0.2460	0.4308	0	1
Education (level 1)	0.1832	0.3870	0	1
Education (level 2)	0.7579	0.4285	0	1
Education (level 3)	0.1217	0.3270	0	1

2) Demographic Factors				
Gender (female)	0.5476	0.4979	0	1
18-29 Age Interval	0.2996	0.4582	0	1
30-49 Age Interval	0.3611	0.4804	0	1
50-98 Age Interval	0.3393	0.4736	0	1
Marital Status (married)	0.5701	0.4952	0	1
Employment (employed)	0.3981	0.4896	0	1
3) Employment Status				
Full-time Employed	0.3214	0.4672	0	1
Part-time Employed	0.0251	0.1566	0	1
Self Employed	0.0298	0.1699	0	1
Retired	0.1349	0.3418	0	1
Housewife	0.0992	0.2881	0	1
Student	0.0912	0.2881	0	1
Unemployed	0.2593	0.4384	0	1
4) Economic Status				
Income Level (level 1)	0.1541	0.3612	0	1
Income Level (level 2)	0.4411	0.4967	0	1
Income Level (level 4)	0.2011	0.4009	0	1

Table 2 gives the results of the estimated ordered probit model. In this estimation, the dependent variable is tax morale variable as defined earlier. The independent variables are social capital variables, demographic variables, variables related to employment status, and economic situation variables. The second column indicates the estimated coefficient for each independent variable. The coefficients cannot be directly interpreted since the model is nonlinear. Yet the signs of each coefficient can be evaluated. In the third and fourth column, there are associated standard errors and z-statistics for each variable respectively. The statistical significances of the variables are determined by using the z-statistics. In the last column, the marginal effects of the independent variables on the dependent variable are given. These effects are the ones related to the top level of tax morale category (Y = 3).

The specification test statistics are given at the end. The results points out that the model is statistically significant. The pseudo-R^2 of the estimated model is 0.06607. This statistic is not a proper measure of goodness of fit for ordered probit models. Instead of pseudo-R^2, other type of R^2 suggested by McKelvey ve Zavoina (1975) is usually used for these models. The manual for the computer package LIMDEP results in serious upward bias in R^2_{MZ}. Therefore, R^2_{MZ} should be computed without using the estimated value of lambda, the inverse of Mill's ratio, (Veall ve Zimmermann, 1996). In our probit model, the variance of the variable of yf defined as $\hat{Y}_i^* = x_i'\hat{\beta}$ has the variance of 0.244033. By substituting this into the formula $R^2_{MZ} = (n-1)\mathrm{var}(yf)/(n + (n-1)\mathrm{var}(yf))$, the value of R^2_{MZ} is computed as 0.196059. Chi squared statistic is used for testing H_0: $\beta = 0$ (Greene, 2007). The value of the chi square statistic derived from the model is 168.7472, and its probability value

is 0.0000000. Since the p-value is much less than 0.01, the hypothesis saying that the all coefficients are zeros is rejected at the 1% significance level. In other words, even if some of the coefficient estimates are statistically significant, we can say that the model is overall statistically significant.

Table 2: Ordered Probit Model Estimation

Independent Variables	Coefficient	Stand. Error	z-val.	Marg. Effects
1) Social Capital				
Importance of Politics	-0.0087	0.0751		-0.0028
Conf. in Justice System	-0.1656*	0.0913	0.9075	-0.0535
Conf. in Government	-0.1678	0.1176		-0.0552
Conf. in Parliament	0.1290	0.1063	0.0696	0.0402
Conf. in Civil Services	-0.0016	0.1025	0.1534	-0.0005
Conf. in Social Security	0.2544***	0.0985	0.2251	0.0789
Conf. in Political Parties	0.1209	0.1375	0.9873	0.0373
Religiosity	0.3181**	0.1289	0.0098	0.1098
National Pride	0.5347***	0.0714	0.3793	0.17330.0353
Education (level 2)	0.1088	0.1207	0.0136	0.0678
Education (level 3)	0.2263	0.1583	0.0000	
			0.3671	
2) Demographic Factors			0.1529	0.0607
Female	0.1893**	0.0748		0.0373
30-49 Age Interval	0.1184	0.0991		0.0624
50-98 Age Interval	0.2003*	0.1170	0.0114	0.0528
Married	0.1644**	0.0820	0.2324	
			0.0869	
3) Employment Status			0.0450	-0.0952
Part time	-0.2765	0.2171		0.0177
Self employed	0.0564	0.2124		0.0712
Retired	0.2381*	0.1377	0.2028	-0.0016
Housewife	-0.0048	0.1464	0.7906	-0.0973
Student	-0.2851**	0.1368	0.0839	0.0269
Unemployed	0.0855	0.0946	0.9735	
			0.372	
4) Economic Status			0.3665	0.1130
Income Level (level 2)	0.3605***	0.0808		0.0597
Income Level (level 3)	0.1953*	0.1030		
			0.0000	
Number of Observations	1512		0.0579	
Chi squared	168.7472			
Prob (ChiSqd>value)	0.00000			
Pseudo R^2	0.06607			
R^2_{MZ}	0.196059			

Notes: * significant at 10% level, ** significant at 5% level, *** significant at 1% level. Dependent variable: tax morale on a four-point scale (0 to 3). The reference categories are age 18–29, man, unmarried, full time employed, education (level 1), income level (level 1).

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Most of the social capital variables appear to be statistically insignificant; importance of politics, confidence in government, confidence in parliament, and confidence in civil services, confidence in political parties do not have effect on tax morale in this sample level. The estimated coefficients of the variables of national pride and confidence in social security system are statistically significant at 1% level while the estimated coefficients of the religiosity and confidence in justice system are significant at 5% and 10% levels respectively. Confidences in social security system, religiosity and national pride have positive effects on tax morale since their estimated coefficients have positive signs. Interestingly, none of the education levels have significant coefficients; there is no relation between education level and tax morale for this sample data. The estimated coefficient of the national pride has the biggest marginal effect among the significant social capital variables; it is 0.17. The more confidence in social security system implies the higher tax morale. Positive effect of the confidence in social security system on tax morale means that people are more willingly to pay taxes as they count on the social security system.

The marginal effect of the religiosity is 0.11. In this case, it might be said that religion affect tax morale positively. As an explanation of this, it can be said that religion extensively covers the beliefs about the right behavior. According to Hull (2000) religion has the ability to prevent illegal behaviors since it legitimizes and reinforces social values. Paying taxes is seen as a social norm and it is motivated by religion. The marginal effect of national pride is 0.17, so it is positive and among the biggest marginal effects. It is clear that national pride supports tax morale. When people are satisfied with their national identities, they are usually devoted to their states and governments.

According to the estimated model, all of the demographic factors have the effects on tax morale. The estimated coefficients of gender and marital status and age are statistically significant at 5% and 10% levels; moreover their signs are positives. Females have higher tax morale comparing with males. Age interval coefficient is fairly significant and its sign is positive implying that tax morale is higher for elderly persons. Being married has positive effect on tax morale. The marginal effect belonging to the variable 50-98 age interval is 0.06; being in the highest level of age category increases the probability of being at the top level of tax morale by 0.06 units comparing to the lowest level of age. By the same logic, being married increases the probability of being at the top level of tax morale by 0.05 units comparing to being unmarried. When it comes to the employment status, the results are not remarkable; all of the variables in this category except student and retired are not significant. Retired people have higher tax morale than full time employers have, and students have lower tax morale than full-time employees. Interestingly, respondents who are at the second and third levels of income are turned out to have higher tax morale than the lowest group has. In other words, the estimated model implies that level of tax morale increases as the level of income is being higher.

The estimated model points out that the concept of tax morale in Bosnia-Herzegovina is not only related to factors of social capital, but it is also related to the demographic, economic factors and employment status. The feeling of confidence in social security, religiosity, national pride, gender, age, income level, being retired and being student seem to be important to understand the concept of tax morale in Bosnia-Herzegovina.

5. Conclusion

The determinants of tax morale were analyzed by estimating ordered probit model for Bosnia-Herzegovina. In the model, the variables of religiosity, national pride, confidence in social security system, confidence in justice system, gender, age, marital status, student, retired and income level found to be statistically significant at different significant levels. That is, all these variables have effects on tax morale in different degrees.

It is not surprising to find a positive effect of the religiosity on tax morale. In the most of the empirical works about tax morale, it is determined that religion affects tax morale positively. The reason might be that religion includes the beliefs about right behavior. Moreover, religion might prevent illegal behaviors since it is a system that legitimizes and strengthens social values. The empirical studies on this subject put out that a lesser amount of crime is committed in the states and the countries with the higher rates of religiosity. (Hull, 2000). Religiosity as a phenomenon supporting social norms seems to encourage the behavior of paying taxes and so it raises the level of tax morale.

It is acquired similar findings about the national pride. The coefficient for the variable of the national pride is statistically significant and it has positive sign. Therefore, the national pride increases the level of tax morale. For the respondents, being proud of their national identity creates an increasing effect on the level of tax morale. It might be because of the reason that the individuals being proud of their national identity are generally more loyal to their countries, and so to their states.

When it comes to gender, females turned out to have higher tax morale in the most of the empirical works. It is as expected because of their being more precautionary and more risk averse. Moreover, females have more ethical values than males have. The estimated coefficient for the variable of female is statistically significant. Its sign is positive; this implies that being female increases the level of tax morale. The estimated coefficient of the second age interval is statistically significant and it has positive sign. Thus, it can be said that older people have higher tax morale since the reference group is the first age interval. The researches put out that older people are more sensible to penal sanctions. Individuals obtain property, status and more dependency to other's behaviors over time. For this reason, potential costs of penal sanctions are heavier for the elderly. Thus, it can be expected a significant relation between age and tax morale. Besides, marital status is very important since it can affect legal and illegal behaviors of individuals. These kinds of behaviors differentiate depending on the degree of the restrictions imposed by social networks such as people's marital status. (Torgler, 2007) So, marital status might have an important effect on tax morale. The coefficient of the variable named married turns out to be significant. The reference group for this category is unmarried individuals. The model points out that being married raise the level of tax morale. Because of the higher level of social ties of the married people, they might tend to be cautious about penal sanctions.

The reference group for the employment status is the full-time employed individuals. Being part-time employed, self-employed, housewife and unemployed do not have any effects on tax morale since the coefficients derived from the model are not statistically significant. The retired individuals have higher tax morale than the full-time employees have. This result is consistent with the findings of the variable of age

since the retired people are older ones. Students have lower tax morale since they do not have strong social ties and social properties the older people have.

In theory, the relation between economic status and tax morale is not clear. Income level either raises or lowers tax morale depending on the type of taxpayers' risk preferences and the structure of income tax. In the countries with the increasing tax rate structure, taxpayers with higher income might think that the benefits of tax evasion are high. On the other hand, the individuals having lower income might not prefer to evade tax even if they face fewer restrictions. They think that they face high loss of utility if they evade. It can be thought the same thing about the individuals with high income. If they do not pay taxes, they will lose the benefits from public services such as infrastructure investments. The estimated model says that tax morale is increasing with the income level.

Confidence variables are among the social capital variables. These variables are determining and explaining the degree of confidence in public administration, or generally the confidence in state. If taxpayers trust on government, parliament, justice system, civil cervices and social security system, they become less reluctant to pay taxes. In this context, this trust on political entities increases the loyalty to state. The confidence in state and the loyalty to state affect tax morale in the positive manner. The coefficient of the confidence in social security system is statistically significant. Its sign is positive as expected. The finding related to the confidence in justice system variable is a bit controversial; it has a negative effect on tax morale. But it is significant only on 10% level. The other confidence variables are all insignificant. Remembering the descriptive statistics of these variables implies that overall confidence in political system seems to be low. The range of the means for these variables is between 20% and 34%. It can be argued that the low degree of the confidences might cause all these results. In other words, the variables of confidence in government, confidence in parliament, confidence in civil services, and confidence in political parties the determine the overall confidence in political system are statistically insignificant since the confidence levels of these are quite low. Therefore, it seems that they don't have significant effects on tax morale.

APPENDIX

Definition of Variables

Variable	**Definition**
TAX MORALE	Please tell me for the following statement whether you think it can always be justified, never be justified, or something in between: … 'Cheating on tax if you have the chance'
	(3=never justified 0=always justified)
	0 4,5,6,7,8,9,10
	1 3
	2 2
	3 1
GENDER	0 male
	1 female
AGE	How old are you?
	1 18-29
	2 30-49
	3 50-98
MARITAL STATUS	0 Unmarried
	1 Married
EDUCATION	level 1 (pre-primary education or non-education, primary education or first state of basic education)
	level 2 (lower secondary or second-stage of basic education, upper-secondary education, post-secondary non tertiary education)

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level 3 (first satege of tertiary education, second stage of tertiary education)

EMPLOYMENT STATUS   Are you employed now or not?

1   full time

2   part time

3   Self employed

4   retired

5   housewife

6   student

7   unemployed

RELIGIOSITY   Would you say you are?

0   not a religious; a convinced atheist, other

1   religious

IMPORTANCE OF POLITICS   How important is politics in your life?

0   not at all important; not important

1   very important; quite important

NATIONAL PRIDE   How proud are you to be (nationality)?

0   Not at all; not very

1   Very; quite

CONFIDENCE IN JUSTICE
SYSTEM   How much confidence do you have in justice system?

0   none at all; not very much

1   a great deal; quite a lot

CONFIDENCE IN

GOVERNMENT

How much confidence do you have in government?

0   none at all; not very much

1   a great deal; quite a lot

CONFIDENCE IN PARLIAMENT

How much confidence do you have in parliament?

0   none at all; not very much

1   a great deal; quite a lot

CONFIDENCE IN CIVIL

SERVICES

How much confidence do you have in civil services?

0   none at all; not very much

1   a great deal; quite a lot

CONFIDENCE IN SOCIAL

SECURITY SYSTEM

How much confidence do you have in social security system?

0   none at all; not very much

1   a great deal; quite a lot

CONFIDENCE IN POLITICAL

PARTIES

How much confidence do you have in political parties?

0   none at all; not very much

1   a great deal; quite a lot

SCALE OF INCOMES

Monthly household income?

Level 1 (less than €150)

Level 2 (€150 to under €500)

Level 3 (€500 and more)

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