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Editors

Prof. PhD. Burçin BOZDOĞANOĞLU
Assoc. Prof. PhD. Özgür BİYAN

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Tel.: +90 224 220 16 72 - 223 04 37
Fax.: +90 224 223 41 12
e-mail: info@ekinyayinevi.com
www.ekinyayinevi.com

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Süleyman ÖZDEMİR	Rector of Bandırma Onyedi Eylül University		

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General Meeting of The Congress			

Measuring and Analyzing of Tax Literacy in Turkey: An Empirical Research on University Students*

Feride Bakar Türegün¹ Adnan Gerçek² Güneş Çetin Gerger³ Serkan Benk⁴
Emine Rüyam Küçüksüleymanoğlu⁵ Halil Serbes⁶ Müge Seda Ateş⁷

Abstract

Tax literacy includes the process of individuals gaining knowledge in the field of taxation, having a positive perception about taxation, and fulfilling their tax obligations as a result. Tax education is one of the most critical factors determining tax literacy. This study aims to measure the tax literacy level of university students receiving tax education and determine the decisive factors in terms of tax literacy in Turkey. Therefore, the definition and the importance of the development of tax literacy will be explained first, and then the survey results will be given.

With the questionnaire prepared using national and international scales, cognitive, affective, and psychomotor dimensions, the sub-dimensions of tax literacy, and the factors of trust and justice, tax compliance, and non-compliance were analyzed. The survey was applied to public finance students of 41 universities and students who take tax courses at universities that do not have a public finance department at 26 cities of NUTS-2 statistical sub-regions of Turkey, and 1,492 survey results were evaluated. The Cronbach's Alpha value, which shows the reliability of 51 questions prepared on a 5-point Likert scale in the research, was found as 0,910. The KMO value, which indicates the scale's suitability for factor analysis, was determined as 0.941.

As a result of the factor analysis, seven factors with eigenvalues greater than 1 were obtained, explaining 55,6% of the total variance. The results indicated that the cognitive dimension was effective in determining the tax literacy level of people receiving tax education, and the affective dimension remained in the background. This situation reveals the importance of tax education.

Keywords: Tax Literacy, Factor Analysis, Cognitive Dimension, Affective Dimension, Psychomotor Dimension.

JEL Code: H2, K34, D91, H26

1. Introduction

Thoroughly and timely collection of taxes is significant to finance public services and provide them at a sufficient level. The most important way to do this is to follow policies to facilitate and enhance the voluntary compliance of taxpayers. Increasing the voluntary compliance of taxpayers is primarily related to knowing the transactions and having a positive perception of them.

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¹ Assist. Prof. Dr., Bursa Uludağ University, 0000-0002-2611-292X, feridebakar@uludag.edu.tr

² Prof. Dr., Bursa Uludağ University, 0000-0002-9495-2429, agercek@uludag.edu.tr

³ Prof. Dr., Manisa Celal Bayar University, 0000-0002-5823-7866, gunes.cetin@bayar.edu.tr

⁴ Prof. Dr., İnönü University, 0000-0002-2804-2486, serkan.benk@inonu.edu.tr

⁵ Prof. Dr., Bursa Uludağ University, 0000-0003-3540-2117, ruyamk@uludag.edu.tr

⁶ Res. Assist., Bursa Uludağ University, 0000-0002-6145-2102, hserbes@uludag.edu.tr

⁷ Res. Assist., İnönü University, 0000-0001-7825-0796, seda.ates@inonu.edu.tr

The concept of literacy, used to statement knowledge and skills in many fields, is also used in tax today. Tax literacy, which shows people's ability to know, perceive and fulfill their tax obligations, increases significantly with tax education. This study aims to measure the tax literacy level of university students receiving tax education and determine the decisive factors in terms of tax literacy. To achieve this aim, the study will be discussed under three main headings. Firstly, the definition and importance of tax literacy will be explained, then the factors determining tax literacy will be presented, and the survey results will be analyzed. Findings and recommendations of the research will be included in the conclusion section.

2. Definition and Importance of Tax Literacy

Tax literacy is defined as taxpayers' having basic knowledge and abilities regarding tax elements, such as defining tax, knowing tax types, understanding how the tax is calculated and when it should be paid, and comprehending how the tax return is prepared and submitted (Cvrilje, 2015). There is a significant relationship between whether individuals are aware of the taxes they have paid and what tax means to them and attitudes to taxation (Yardımcıoğlu et al., 2014: 95).

Increasing the tax literacy level of individuals is important primarily in terms of tax compliance and then the formation of tax awareness and tax culture. The studies have determined that individuals having knowledge about taxation and a high positive perception towards tax reflect this situation positively on tax transactions (Niemirowski et al., 2003). The fact that citizens have information about taxes increases the confidence that the government uses taxes in the right place. In contrast, incomplete or incorrect information results in distrust of the government (Kirchler et al., 2008: 216). In addition, tax illiterate people may be more likely to be tax non-compliance due to ignorance and unintentionally (Chardon et al., 2016). Therefore, the most important measure to be taken to increase tax compliance is to carry out studies to increase tax literacy.

3. Factors Determining Tax Literacy

Learning and the resulting behaviors are accepted by Bloom (1956) as a process that emerges with cognitive, affective, and psychomotor domains and a learning approach in these levels. Learning is a process consisting of acquiring knowledge, personal attitude, and applications following and affecting each other in this structure. Tax literacy is completed with the psychomotor dimension by passing through the cognitive and affective dimensions in learning approaches (Yılar & Akdağ, 2017: 368). While tax literacy can be affected by various demographic factors, some other factors are also determinants. Since students in a certain age group with tax education were taken as the sample group in this study, the following factors will be analyzed.

Cognitive Level of Tax Literacy: This dimension is the process of acquiring knowledge, which is the primary stage of learning. Therefore, it includes obtaining information in

the field of tax, such as the definition of tax, tax types, tax legislation, tax rates, tax payment dates (Yılar & Akdağ, 2017: 366).

Affective Level of Tax Literacy: This dimension is the stage in which personal attitudes and ideas are formed towards the learned information. Therefore, it includes situations in the field of the tax such as tax perception, understanding the necessity of paying taxes, attitude towards taxes, having tax awareness, and tax morale (Yılar & Akdağ, 2017: 366).

Psychomotor Level of Tax Literacy: This dimension is the stage in which the learned and perceived knowledge is applied by turning it into a skill. Therefore, it includes situations in the field of the tax, such as filling out a tax return and paying the tax debt (Yılar & Akdağ, 2017: 366).

Justice and Trust: There are three types of justice perceived by taxpayers: distributive, procedural, and punitive justice (OECD, 2010). In addition, taxpayers' trust in the revenue administration leads to a decrease in tax incompatibility as it enables them to cooperate with the revenue administration (Feld & Frey, 2002: 96).

Tax Compliance and Non-Compliance: Tax compliance is the complete and timely fulfillment of all obligations of the taxpayer at all stages of the taxation process (Tunçer, 2005: 218). On the contrary, non-compliant taxpayers can do this due to a lack of information. Therefore, there is a close relationship between tax compliance and tax literacy (Çetin Gerger et al., 2019: 57).

4. Methodology

4.1. Purpose and The Sample of the Research

Many OECD countries recognize the importance of tax education to increase tax compliance rather than traditional methods. This study aims to measure the tax literacy level of university students receiving tax education in Turkey with all its dimensions, reveal the role of tax education in increasing the tax literacy level, and determine the factors that determine tax literacy.

The questionnaire technique was used as a data collection method in the study. Questions were measured cognitive, affective, and psychomotor level, which are the sub-dimensions of tax literacy that has been taken from relevant studies Kornhauser (2019), Yardımcıoğlu et al. (2014), OECD (2017), Cechovsky (2018), and Teyyare (2018). Questions about trust and justice were adapted from Murphy (2004) and tax compliance questions from Kirchler & Wahl (2010), Bobek (2007), and Smart (2012).

The sample of this study was public finance students of 41 universities and students who take tax courses at universities that do not have a department of public finance at 26 cities of NUTS-2 statistical sub-regions of Turkey. This population consists of approximately 30.400 students according to the 2019 guide The Measuring, Selection, and Placement Center (ÖSYM). The sample size was calculated as 650 at a 99% confidence interval and a 5% margin of error. As factor analysis will be done in the research, a questionnaire was applied to as many university students as possible. We

collected answers online from 1853 participants via Google Forms; 1492 of them were found suitable for analysis.

Table 1. Demographic Analysis of Survey Results

	Answers	Frequency			Answers	Frequency	
Gender	Female	943	3,2	Working	Working	517	4,7
	Male	549	6,8		Non-working	975	5,3
Department	Public Finance	1009	7,6	CGPA	2.01 – 2.50	301	0,2
	Economics	195	3,1		2.51 – 3.00	708	7,5
	Business Management	127	,5		3.01 – 3.50	410	7,5
	Faculty of Law	161	0,8		3.51 – 4.00	73	,9
	Total	1492	00		Total	1492	00

Source: Prepared by authors based on research results.

4.2. Factor Analysis and Results

The results were analyzed through exploratory factor analysis using SPSS 23.0 software. These factors include affective level, cognitive level, psychomotor level, trust and justice, tax compliance, and tax non-compliance. The Cronbach's Alpha value is 0,910. The values of Bartlett's Test of Sphericity sig 0,000 (Chi-square: 47392,3 df: 1275) and KMO (0.941) suggest that the data were appropriate for factor analysis. These factors explained 55,6% of the total variance with an Eigenvalue of each factor greater than 1.

According to factor analysis, the most crucial factor determining tax literacy and its level is the cognitive dimension. This dimension includes questions measuring tax knowledge such as the taxation process, the Turkish tax system, and penalties. However, tax literacy is not only about knowledge but also about perception and application. Therefore, the second factor is tax compliance. This factor includes questions regarding the reasons for people's voluntary to pay taxes. Other factors are tax compliance, trust, and justice, psychomotor and affective dimensions, respectively.

Table 2. The Summary of Analysis Results

Factors	Number of Questions	Cronbach's Alpha	Initial Eigenvalues		
			Total	% of Variance	Cumulative %
Cognitive Level	12	0,920	6,004	11,773	11,773

Tax Compliance	9	0,934	5,489	10,764	22,537
Tax Non-compliance	7	0,927	4,658	9,133	31,670
Trust and Justice	7	0,885	3,968	7,780	39,450
Psychomotor Level	7	0,845	3,385	6,637	46,086
Affective Level	5	0,833	2,551	5,001	51,088
Psychomotor Level (Electronic Applications)	4	0,876	2,288	4,486	55,574

Source: Prepared by authors based on research results.

5. Conclusion

In the study, which aims to measure the tax literacy level of university students who have received tax education and reveal the factors determining tax literacy through factor analysis, a questionnaire prepared using national and international scales was applied. Factors to be measured were determined as cognitive, affective, and psychomotor dimensions, which are sub-dimensions of tax literacy, as well as trust and justice, tax compliance, and tax incompatibility. The results showed that the affective dimension was in the background in determining the tax literacy level of people who received tax education, and the cognitive dimension was effective instead. This situation reveals the importance of education in increasing tax literacy. Especially in today's modern tax administrations, which have abandoned the classical methods of coercion and punishment in increasing tax compliance, studies should be carried out to increase the tax literacy of taxpayers.

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