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FACTORS OF THE TAX REPORTING COMPLIANCE OF THE SLOVAK RESIDENTS

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Abstract

Tax revenues collected from personal income tax represent important portion of the government budget tax revenues. International mobility of individuals enables individuals to earn income abroad. Most developed countries apply resident principle of taxation meaning that residents who earn foreign income have worldwide tax liability in their country of residence. However, application of this principle requires residents to submit tax return where they disclose their worldwide incomes. Income tax reporting compliance is important part of a broader topic of the tax compliance of taxpayers. This paper investigates factors that determine tax compliance of individuals, resident of Slovakia, who earn income abroad. We employed survey method and by application of factor analysis we identified the most important factors. Obtained knowledge about factors that influence individuals' tax compliance can be used by tax administration to enhance efficient collection of personal income tax.

Key words

Foreign Income, Tax Compliance, Individuals, Slovakia, Factor Analysis

INTRODUCTION

Globalization of the world economy stimulates international mobility of work forces. Along with globalization there are several factors that strengthen international and European mobility of work forces. Among push factors there is: high unemployment in host countries, worsening of political environment, and impact of crisis on intra-EU mobility of workers. Among pull factors there is language skills, wage differentials, host country's economic performance, attracting talents (Andor, 2014). Other factors include: allocation of jobs that require specific skills, demand for low or high skilled workers, cross-country matching of jobseekers and vacancies, cross-border differences in demand and rewards for health care workers, especially medical doctors and nurses, mutual recognition of professional qualifications, family ties in abroad,

occurrence of international marriages, transformation of formerly temporary stay in host country into to the center of living, shifts of homes motivated by more plausible weather, adventure, and searching for new experience.

There is one additional important force which intensifies international mobility of Slovak workforces: fundamental right to free mobility of work forces within the European Union. Slovak Republic, having been a Member State of the European Union since May 1, 2004, must follow provisions of the Treaty on the Functioning of the European Union (TFEU, hereinafter Lisbon Treaty), which has been in effect since January 1, 2009. Articles 45-48 of Lisbon Treaty laid down freedom of movement of citizens including workers within the internal market of the European Union.

The right to free movement of workforces has impact on cross-country movement of workforces. Intra-EU mobility flows declined considerably during the first phase of the economic crisis – in 2009 and 2010, mobility flows fell by 41% compared with 2007-2008. In 2011-2012 intra-EU labor mobility increased by 22% compared with 2000-2010. Some EU countries, among them Greece, Spain, Ireland, Hungary and Latvia experienced growing labor outflows due to extremely high level of unemployment. It is estimated that recently more than 1.2 million people work cross-border in the EU. Gross wages paid to cross-border and seasonal workers in 2010 amounted to €46.9 billion (European Commission, 2012). Worker mobility has been identified as one of the key potentials for increasing growth and employment in Europe. The importance of migration in Europe is shown also in the report of the German Destatis, which states that in January 2011 in the EU there were employed 33,2 million people who were not nationals of the country in which they work, while more than a third of them (12, 8 million) were citizens of another EU country. According Lászlo Andor, European Commissioner, in 2013 there were around 7 million EU citizens – or 3,3% of the EU's total labor force – working and living in a member country other than their country of citizenship. In addition, there were 1,1 million cross-border or frontier workers (Andor, 2014: 4). Eurostat data states that in 2014 there were 15.2 million persons living and working in an EU Member State of which they were not a citizen, accounting for 7.0% of total EU employment and 7.3 million of them were citizens from another EU Member State and 7.9 million were non-EU citizens (Eurostat, 2014). According to a 2010 Eurobarometer survey, 10% of people polled in the EU replied that they had lived and worked in another country at some point in the past, while 17% intended to take advantage of the right to free movement in the future (Eurobarometer survey, 2014).

From the perspective of the Slovak Republic, mobility of work forces has increased following the membership in the European Union and right to free movement of workforces. Most citizens of Slovak Republic migrate from Slovakia to work in Czech Republic, then other most frequently impact countries are Germany, Austria, United Kingdom, Ireland and other countries (Table 1).

TABLE 1. WORKERS ABROAD (000 PEOPLE)

Country	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Austria	7,0	9,7	11,6	15,1	17,6	19,9	23,9	25,6	29,3	36,5
Czech rep.	61,4	65,4	69,5	72,1	70,1	49,9	52,4	43,6	44,9	43,6
Germany	7,6	6,3	7,9	8,8	9,3	8,5	6,3	5,7	9,8	15,0
Hungary	6,7	11,8	16,6	19,5	18,9	14,5	11,6	9,8	7,3	6,7
Ireland	0,5	2,8	7,0	9,0	8,1	3,1	3,4	1,9	1,0	2,0
Italy	3,8	1,7	7,1	6,7	8,9	4,7	3,0	3,1	4,0	4,2
Netherland	0,6	0,8	2,5	2,7	2,9	4,2	5	5,9	6,4	5,0
United Kingdom	7,0	13,0	22,6	29,0	20,2	14,1	10,6	9,7	7,5	10,5
Other	9,0	13,9	13,3	14,3	11,6	10,1	10,5	9,8	10,5	12,8
Total	95,5	125,4	158,1	177,2	167,6	129	126,7	115,1	120,7	136,3

Source: Ministry of Foreign Affairs of the Slovak Republic. (2014: 29)
Note: Data for 2013 are for the second quarter.

Other sources, however, indicate even higher portion of individuals working abroad. Document British Annual Population Survey (APS) reported that in 2010, worked in England, 52,000 Slovaks (Office for National Statistics, 2015). Similarly, there are large differences in the figures for the Slovaks in Germany, Austria, Switzerland and elsewhere. In addition to the official data it is presented and various estimates and partial data according to which it is abroad significantly more citizens of Slovakia, then the Statistical Office of the Slovak Republic reports.

EURES states that in 2006 left Slovakia to work in EU countries 230,000 citizens and there is the high acceleration of migration. From 2000 to 2014, the number of Slovaks working abroad increased almost threefold (Ministry of Foreign Affairs of the Slovak Republic, 2014).

If individuals who work abroad keep their permanent address in Slovak Republic, they are deemed residents of the Slovak Republic. As stated in the provisions of the Income Tax Act No 595/2003 Coll. of Laws, individuals who are residents of the Slovak Republic have unlimited tax liability in the Slovak Republic. This implies that that at the end of the tax year individuals compulsory submit tax return in the Slovak Republic. Resident principle of taxation requires computation of residents' tax liability from *worldwide* income.

Worldwide income taxation requires residents to submit tax return and declare income earned from home country as well as income earned abroad. After worldwide income is computed, tax liability in the country of residence is computed and resident country tax provisions are applicable. If source country applied source principle of taxation, and imposed income tax on income earned there, and if at the same time home country applies resident principle of taxation, these conflicting principles of taxation may cause double international juridical taxation. In that case two options are

possible. Should there not be either unilateral measure to eliminate double international taxation or bilateral tax treaty, it is likely, that individual will definitely end up with income sourced abroad taxed twice. If there is bilateral tax treaty signed between Slovakia and foreign country where income was sourced, application of either ordinary tax credit or exemption method will secure foreign sourced income from being taxed twice.

To illustrate different impact of the two most frequent methods to eliminate double international juridical taxation, let us compare two examples. Assume that Mr. George S. is resident of Slovakia and he works in foreign country – let's label it A, where he earned gross salary of 28,000 Euro in 2014. Mr. George S. is also a member of statutory body in the SlovCo Ltd., Slovak resident company, where he earned in 2004 director's fees of 10,000 Euro. Assume that the effective tax rate on income from dependent activity is 7% in country A, while in Slovakia it is 19%. Mr. George S. will pay in country A 1,950 Euro (0.07 x 28,000). Now let us consider situation of Mrs. Kate B., resident of Slovakia, who works as a nurse in country B where she earned gross salary 28,000 Euro in 2014. The country B applies effective tax rate of 7%. Mrs. Kate B paid income tax of 1,950 Euro (0.07 x 28,000) withheld in source country B. Mrs. Kate B. is also member of the statutory body of SlovCo Ltd. and she earned director's fees of 10,000 Euro in 2014.

Now assume that there are bilateral tax treaties between Slovakia and both countries, country A and country B. While former treaty provides exemption method to eliminate double international juridical taxation of income from dependent activities, later treaty applies ordinary tax credit method on the same type of income sourced in country B. Mr. George S. fills tax return in Slovakia where he admits worldwide income of 38,000 Euro (28,000+10,000). However, his tax liability will be computed from income earned in resident country only, as income earned abroad is exempted from taxation in resident country. His final tax liability in Slovakia will be 1900 Euro (0.19 x 10,000). Mrs. Kate B's worldwide income is 38,000 Euro (28,000+10,000), her worldwide tax liability before foreign tax credit is 7,220 Euro (0.19 x 38,000), and after foreign tax credit is applied, her final tax liability in Slovakia equals 5,270 Euro (7,220-1,950). Our example shows, that individuals - residents of Slovakia may be motivated not to declare their income earned abroad. At the same time, tax administration has not enough information how many residents of Slovakia work abroad and how much income they earn abroad annually.

The aim of this paper is to search for factors that determine tax compliance of individuals - residents of Slovakia, more narrowly factors of compliance with obligation to fully admit income earned abroad and submit tax return and. To uncover factors that determine foreign income disclosure and submission of tax returns by Slovak residents we first gather data by questionnaire and then employ factor analysis. We expect that knowledge of identified factors may help understand tax

compliance behavior of Slovak residents and provide more information necessary to adopt efficient ways to increase tax compliance of individuals. Increased tax compliance may contribute to better income tax revenues of Slovak government budget.

The rest of this paper is organized as follows. Second section provides review of literature on tax compliance, section three presents questionnaire, gathered data and methodology, then section five provides results of factor analysis, and finally the sixth section offers conclusion.

LITERATURE REVIEW

Correct filling of tax return, including admission of income earned abroad, as well as submission of tax returns by individuals, are issues covered under the broad topic of the tax compliance. Not filling of tax return, not disclosure of income earned abroad or not submission of tax return at all are all covered by concept of tax non-compliance.

There is rich theoretical and empirical literature on tax compliance issues. In the course of time there appeared two classical approaches to modelling tax compliance in tax compliance literature: *microeconomic* and *behavioral* approach. (Gulyás et al, 2015). Some authors believe that there are three approaches to tax compliance theories (Bătrâncea et al, 2012; Sour, 2004).

The *microeconomic* approach was introduced in the seminal paper published by Alingham and Sandmo in 1972. A taxpayer who is rational and amoral maximizes expected utility which depends on income, frequency of tax audit, imposition of penalty which is linked to evaded income and tax rate. Those are key economic variables of the microeconomic tax evasion model (Allingham & Sandmo, 1972), (Sandmo, 2004). Taxpayer who does not comply with tax law must pay penalty the size of which depends on the amount of not admitted income. There is specific relation between tax rate and tax compliance: if tax rate increases the income then substitution effects may cause more or less likely compliance with tax law. As Gahramanov (2009) explains, "the substitution effect encourages evasion since the marginal benefit of cheating goes up with the tax rate", and on the contrary, "the income effect tends to suppress evasion since a higher tax rate makes the taxpayer with decreasing absolute risk aversion feel worse-off, and thus decrease risk-taking". Later on Yitzaki (1974) found out that if the size of penalty is derived from the amount of taxes then the substitution effect disappears and the remaining income effect causes that taxpayer cheats less, thus the higher tax rates encourage tax compliance (Gahramanov, 2009). Standard tax evasion model introduced by Allingham and Sandmo (1972) and like models investigate impact of economic factors on tax compliance, among them mainly influence of tax rates level, frequency, assurance or probability of tax audit and risk of discovering of tax non-compliance by tax administration, and size of penalties

(Gideon, 2009). Level of tax rates belongs to one of the most important economic factors of tax compliance. When Doerrenberg and Peichl reviewed determinants of tax morale they paid special attention to effect of progressive taxation on tax morale, as tax morale is positively linked to tax evasion (Doerrenberg & Peichl, 2010). Microeconomic theories pay attention to the role of tax audits and penalties in taxpayers' compliance. There is a question of what the government can do to foster better voluntary compliance, and whether tax audits may do the job. According the IRS study there is large, strongly significant, and positive deterrent effect of audits on the general population (Plumley, 1996). Blumental et al, (1998) run a controlled experiment in Minnesota to investigate role of tax audit in tax compliance of Minnesota taxpayers. Taxpayers were informed that their tax returns would be closely examined. They found out, that tax compliance of informed taxpayers varied depending on the level of their incomes. While low and middle income taxpayers increased reported income, high-level income taxpayers reported income fell sharply (Blumental et al, 1998). Bernasconi (1998) studied risk of tax audit and risk aversion of taxpayers as a factor of tax compliance. Friedland et al, (1978) examined impact of tax audit in comparison to fines on taxpayers' compliance. Economic cycle, especially recession, represents another possible force which influences tax compliance behavior of taxpayer (Lesnik, 2014). Several authors studied significant factors that affect tax compliance especially of juridical persons (Eze, 2014; Yamala et al, 2013).

The main shortage of microeconomic models is, that they do not offer a comprehensive perspective on the sociological and psychological factors that undoubtedly play, along with economic factors, decisive role in taxpayers' compliance. These factors are represented by attitudes, beliefs, norms, perceptions, motivations (Kirchler, 2007). *Behavioral* approach to tax compliance modelling pays attention to non-economic factors, mainly sociological and psychological factors like trust to tax authorities and the perception of the power of tax authorities (Giachi, 2014; Hageman, 2013; Lisi, 2015). Kirchler et al, (2008) proposed the "slippery slope" framework where trust in tax authorities and power of tax authorities increase tax compliance. Trust in tax authorities helps to increase voluntary compliance while power of tax authorities enhances enforced tax compliance (Alon et al, 2013; Azwadi et al, 2014; Hauptman et al, 2015; Kogler et al, 2013; Kirchler et al, 2014; Muehlbacher, 2010; Serim, 2014;). The relationship between taxpayers and tax authorities and the extend of respectful treatment of the taxpayers play important role in tax compliance behavior (Feld & Frey, 2007). Alabede et al, (2011) found that public governance quality has impact on tax compliance. Erard and Feinstein (1994) studied a link between honesty and evasion in the tax compliance game (Erard et al, 1994) and Togler (2002) investigated link between tax morale and tax compliance (Torgler, 2002). According Gordon (1989) reputation costs represent important socio-psychological role as a deterrent on tax non-compliance (Gordon, 1989). Existence of tax havens provides motivation and opportunity to tax non-compliance behavior (Kudrle, 2012).

There is also impact of tax law complexity, in particular perception of multiple tax returns, on tax compliance behavior (Bhattacharjee et al, 2015). In contrast supervision, knowledge and boosting of tax literacy increase tax compliance (Gangl et al, 2014; Nichita, 2015; Rhoades, 1999). Benk et al, (2012) examined the extent to which perceived vertical and horizontal tax equity, social and moral norms, and legal sanctions, namely detection risk and penalty magnitude, affect tax compliance intentions (Benk et al, 2012). Other factor which enhances tax compliance is information (Devos et al, 2015; Kosonen et al, 2015; Phillips, 2014). European Union pays close attention to how direct tax cross-border problems affect citizens (European Commission, 2012; European Parliament, 2015; Eurostat, 2014).

Tax compliance empirical research relies mostly on three types of data. Witte et al, (1987: 102), discuss three types of data that might be used to study compliance behavior, including their pros and cons: survey data, tax return data, audit data. The most frequently used methods used in empirical research of tax compliance are field experiments (Blumental et al, 1998; Durham et al, 2014; Gangl et al, 2014; Hallsworth, 2014; Iyer et al, 2010; Oğuz et al, 2013;), and factor analysis (Benk et al, 2012; Yamala et al, 2013). There are examples of tax compliance studies in individual country studies (Alabede et al, 2011; Azwadi et al, 2014; Eze, 2014) and cross-country studies as well (Wu et al, 2005).

DATA AND METHODOLOGY

As stated earlier, income earned by individuals abroad is part of the worldwide income that is subject to unlimited tax liability in Slovakia. Slovak residents must disclose income earned abroad by filling and submitting tax returns in Slovakia. If they do not comply with this obligation, no worldwide taxation happens, instead tax evasion take place. This may happen either unwillingly, as ordinary individuals who work abroad might not be sufficiently informed about their obligation, or willingly, if they know about such an obligation, however do not comply.

There may be several reasons why individuals - residents of Slovakia do not disclose their income earned abroad and reasons not to submit tax return to the Slovak Tax Authorities. To find possible factors that lead to this type of tax non-compliance, we used survey method. This section presents data gathered in the field study by the mean of electronic questionnaire.

To find answers on our questions, we elicited field survey by mean of electronic questionnaire. The questionnaire was prepared by using freely accessible web page docs.google.com. After questionnaire was prepared, it was spread among respondents by internet. To spread questionnaire, we used social networks of Slovak nationals living and working abroad, namely Facebook. The sample comes from the population of individuals - residents of Slovakia who earn income abroad.

TABLE 2 CODEBOOK: ITEMS, LABELS, FULL TEXT QUESTIONS, TEXT OF RESPONSES, AND CODES

Item No	Label	Full text of question
Item 1	*gend*	Gender 1=male; 0=female
Item 2	*age*	age 1=(18-24); 2=(25-32); 3=(33-44); 4=(45-65)
Item 3	*educ*	educational level 0=elementary school; 1=college; 2= secondary school without school-living examination; 3=secondary school with school-living examination; 4=university bachelor degree; 5=university magisterial degree; 6=university philosophies doctor degree
Item 4	*length*	How long have you been working or you had worked abroad within one calendar year? 0=less than 6 months; 1=more than 6 months
Item 5	*emplr*	Who was/is your employer in abroad? 0=labor agency; 1=Slovak company/person; 2=foreign company/person
Item 6	*euout*	Have you been employed/had you been employed outside the EU? 1=yes; 0=no
Item 7	*phmsr*	While working abroad, have you been keeping your permanent home in Slovakia? 1=yes; 0=no
Item 8	*jobonly*	Do you consider your stay abroad only as job-linked? 1=yes; 0=no
Item 9	*earn*	In the year when working abroad did you earn more than 1800,0 Euro (including income earned in sourced in Slovakia)? 1=yes; 0=no
Item 10	*sbmtr*	Did you submit tax return in the year to admit income earned abroad? 1=yes; 0=no
Item 11	*know*	Do you know that you must submit tax return in SR even if you earn income only abroad? 1=yes; 0=no
Item 12	*info*	Do you consider information provided by the state administration about this obligation satisfactory enough? 1=yes; 0=no
Item 13	*trown*	Do you fill your tax return yourself? 1=yes; 0=no
Item 14	*compl*	Do you think that filling/submission of tax return is complicated? 1=yes; 0=no
Item 15	*txasign*	Do you make tax assignation? 1=yes; 0=no
Item 16	*tpunlq*	Do you know who taxpayer with unlimited tax liability (resident) is? 1=yes; 0=no
Item 17	*tpunldf*	Define taxpayer with unlimited tax liability. (open question) 1=correct answer; 0=incorrect answer; 99=no answer
Item 18	*wincq*	Do you know what does it mean worldwide income? 1=yes; 0=no
Item 19	*wincdf*	Define worldwide income. (open question) 1=correct answer; 0=incorrect answer; 99=no answer

Item 20	*whrinf*	Where do you gather information necessary to understand your lawful tax obligations? 1=friends and professionals; 2=media; 3=media, friends, professionals; 4=media, legal acts, tax admin web; 5=media, legal acts, tax admin web, friends, professionals; 6=legal acts, tax Admin web; 0=legal acts, tax admin web, friends, professionals;
Item 21	*notsubmit*	Did it happen that you did not submit tax return even if you were legally obliged to? 1=yes; 0=no
Item 22	*web*	Do you know which web page provides information on BTTs? 1=yes ; 0=no

By the questions paced into the questionnaire, we asked individuals – residents of Slovakia, to reveal possible reasons and causes of their tax reporting compliance. There were 22 questions placed in the questionnaire. The complete wording of questionnaire items is exposed in the Table 2.

Our sample size was created based on answers received from 258 respondents - individuals who are residents of Slovakia and earn foreign income. Our sample size fits with the recommendations published by Comrey and Lee (1992), and by Gorsuch (1983) who states that the minimum sample size for the factor analysis purposes is given by evaluative determination of a sample size so that the number of observations should be 5 times the number of items in a questionnaire at least.

Table 3 presents number of observations received for each question, and minimum, maximum, mean and standard deviations.

TABLE 3. DESCRIPTIVE STATISTICS

	N	Min	Max	Mean	Std. dev
Age	258	1.00	4.00	1.9845	.88203
Do you think that filling/submission of tax return is complicated?	258	.00	1.00	.6357	.48218
In the year when working abroad did you earn more than 1800,0 Euro (including income earned in sourced in Slovakia)?	258	.00	1.00	.8760	.33026
Highest education level	258	.000	6.000	3.60853	1.169424
Who was/is your employer in abroad?	258	.00	2.00	1.7209	.65988
Have you been employed/had you been employed outside the EU?	258	.00	1.00	.2132	.41035
Gender	258	.00	1.00	.3760	.48531
Time mark	258	1.00	258.00	129.5000	74.62238
Do you consider information provided by the state administration about this obligation satisfactory enough?	258	.00	1.00	.1395	.34718
Do you consider your stay abroad only as job-linked?	258	.00	1.00	.3721	.48430
Do you know that you must submit tax return in SR even if you earn income only abroad?	258	.00	1.00	.4535	.49880
How long have you been working or you had worked abroad within one calendar year?	258	.00	1.00	.7171	.45131
Did it happen that you did not submit tax return even if you were legally obliged to?	256	.00	1.00	.2773	.44856
While working abroad, have you been keeping your permanent home in Slovakia?	258	.00	1.00	.8953	.30670
Did you submit tax return in the year to admit income earned abroad?	258	.00	1.00	.3101	.46342
Define taxpayer with unlimited tax liability (open question)	31	.00	1.00	.7097	.46141
Do you know who is taxpayer with unlimited tax liability (resident)?	258	.00	1.00	.1705	.37684
Do you fill your tax return yourself?	258	.00	1.00	.2674	.44349
Do you make tax assignation?	258	.00	1.00	.1822	.38674
Do you know which web page provides information on BTTs?	257	.00	1.00	.1128	.31702
Where do you gather information necessary to understand your lawful tax obligations?	258	.00	6.00	2.1395	1.78948
Define worldwide income (open question)	38	.00	1.00	.7632	.43085
Do you know what does it mean worldwide income?	258	.00	1.00	.2248	.41827

RESULTS OF FACTOR ANALYSIS

Inspection of the original correlation matrix with all 22 variables (not displayed here) disclosed that there were 18 items that produced correlation coefficients lower than 0.3. These variables are not appropriate for factor analysis (Hair et al, 1998) therefore they were excluded from our further analysis. The rest of variables that yield correlation coefficients higher than 0.3 are shown in correlation matrix (Table 4).

TABLE 4. CORRELATION MATRIX

	sbmtr	trown	tpunlq	know	compl	wincq	whrinf
sbmtr	1.000						
trown	0.049	1.000					
tpunlq	0.097	0.215	1.000				
know	0.534	0.136	0.270	1.000			
compl	-0.172	-0.307	-0.235	-0.135	1.000		
wincq	0.121	0.157	0.570	0.255	-0.190	1.000	
whrinf	-0.066	0.311	0.218	0.081	-0.275	0.181	1.000

To run factor analysis, we selected only variables that produce correlation coefficient higher than 0.3. Out of originally 22 items only 6 items (variables) in our analysis justified their availability to be involved into analysis of variance. They are: *sbmtr, trown, tpunlq, know, wincq, whrinf.* The rest of items showed lower correlation coefficient and they were not included into the further analysis. This is in line with the main purpose of principal component analysis, which is to reduce correlated observed variables to a smaller set of important independent comparative variables. In our case out of original set of 22 items, based on the level of the correlation coefficient among pairs of variables just 6 most important variables were chosen.

In the next step we determinate whether or not chosen variables can be grouped into smaller set of underlying factors, it means we have to test whether data will factor well. To indicate factorability of variables we executed the Kaiser-Meyer-Olkin test (KMO) the results of which are presented in the Table 5. According to Kaiser (1974) our result on KMO test is mediocre as KMO value lies in the interval 0.6-0.7, however being above 0.6 KMO test's result enables us to run factor analysis. Along with KMO test we run also Bartlett's test of sphericity that compares correlation matrix of our variables with identity matrix. To have factor analysis appropriate the Bartlett´s value should be significant. As displayed in the Table 5, the probability measured by p-value is more than 0.5, which suggests that it is possible to proceed with factor analysis.

TABLE 5. KMO AND BARTLETT'S TEST

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.631
Bartlett's Test of Sphericity	Approx. Chi-Square	310.962
	df	21
	Sig.	.000

Table 6 presents communalities, which are the percentages of variance explained by the extracted components. If communality is very low for the item, it suggests that variable is completely unrelated to the other items in the set. However, it is not our case, as values of all communalities for our variables exhibit level higher than 0.5. This suggests that questions were well understood and there is no bias in the answers of respondents.

TABLE 6. COMMUNALITIES

	Initial	Extraction
sbmtr	1.000	0.813
trown	1.000	0.578
tpunlq	1.000	0.771
know	1.000	0.724
compl	1.000	0.534
wincq	1.000	0.785
whrinf	1.000	0.557
Extraction Method: Principal Component Analysis.		

The purpose of principal component analysis is to explain as much variance as possible by using as few components as possible. Components are extracted based on the initial eigenvalues criterion, and components with eigenvalue more than 1.0 are chosen for further analysis. Information how much of the variable in the data has been explained by the extracted factors is reported in the Table 7. It shows three chosen components based on the initial eigenvalues, their values are 2,309 for component 1, then 1,386 for component 2, and 1,066 for component 3. All three chosen components explain altogether cumulatively 68.027% of total variance, and each of them separately explains approximately from 22.0-23.0% of variance.

TABLE 7. TOTAL VARIANCE EXPLAINED

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2,309	32,990	32,990	2,309	32,990	32,990	1,604	22,921	22,921
2	1,386	19,802	52,792	1,386	19,802	52,792	1,597	22,810	45,732
3	1,066	15,235	68,027	1,066	15,235	68,027	1,561	22,295	68,027
4	0,721	10,302	78,329						
5	0,676	9,653	87,982						
6	0,439	6,273	94,255						
7	0,402	5,745	100,000						
Extraction Method: Principal Component Analysis.									

Initial levels of eigenvalue serve us as critical measure when determining how many components should be chosen to process analysis. Other tool is to visualize information on eigenvalue levels. Scree plot is useful graph which plots number of components on x-axis and eigenvalues on y-axis. To indicate an appropriate number of components we look at the inflation point located in the elbow of the curve. In our case we chose three components, the same number as decided by checking eigenvalues expressed in numerical form. Figure 1 presents the plot of eigenvalues.

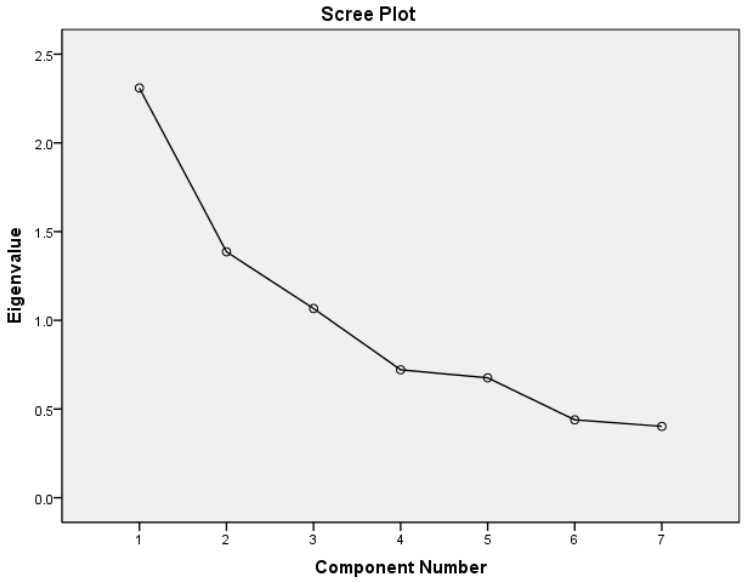

FIG. 1 SCREE PLOT

Component matrix shown in Table 8 presents only chosen components - those with initial eigenvalues more than 1.0. It displays factor loadings when values are unrotated.

TABLE 8. COMPONENT MATRIX

	Component		
	1	2	3
tpunlq	0.713	-0.101	0.502
wincq	0.676		0.572
compl	-0.564	0.223	0.408
trown	0.519	-0.376	-0.408
sbmtr	0.427	0.735	-0.301
know	0.595	0.598	-0.117
whrinf	0.469	-0.536	-0.223
Extraction Method: Principal Component Analysis.			
a. 3 components extracted.			

Rotated component matrix displayed by Table 9, shows how each variable loads into each component. We can see high numbers in component 1 and at the same time low or no numbers of those variables in component two and three. Contrary, high numbers for variables in component two are accompanied with low or no values of those variables in the component one and three.

TABLE 9. ROTATED COMPONENT MATRIX[A]

	Component		
	1	2	3
trown	0.755		
whrinf	0.707	0.185	-0.151
compl	-0.695		-0.210
wincq		0.875	0.109
tpunlq	0.189	0.852	
sbmtr			0.901
know		0.247	0.810
Extraction Method: Principal Component Analysis, Rotation Method: Varimax with Kaiser Normalization, a, Rotation converged in 4 iterations			

Component plot presented in the rotated space is a graphical help summarizing everything shown in previous tables (Figure 2).

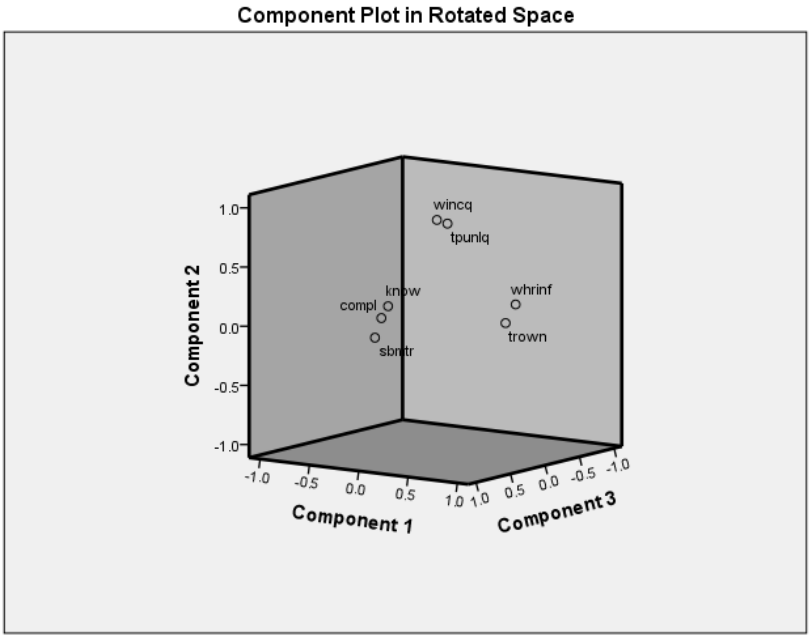

FIG. 2 COMPONENT PLOT IN ROTATED SPACE

CONCLUSION

Our factor analysis results allow us to identify and name some hidden factors that determine tax-reporting compliance of individuals - residents of Slovakia. According to our factor analysis there are three hidden factors of tax compliance of individuals - residents of Slovakia. Below we describe these three dimensions in order of their importance.

Component 1: ***Tax Complexity and Information***. This dimension represents 22.921% of the total variance. It consists of three items *trown, whrinf, compl.* Individuals who submit tax return themselves (*trown*, +), where they find information (*whrinf*, +) and degree of complexity of tax return form (*compl*, -). Our results are consistent with previous empirical research, for example with the finding, that tax compliance is

negatively related to complexity of tax returns (Bhattacharjee et al, 2015) and positively related to the accessibility of tax related information (Devos et al, 2015; Kosonen et al, 2015; Phillips, 2014). This result is in line with considerations of the EU which promoted settling up central one-stop-shop in tax administration where cross-border workers could seek reliable tax information (European Commision, 2015).

This finding implies, that in attempts to enhance tax compliance of individuals who reside in Slovakia, tax policy makers should pay closer attention on tax complexity and publication form, accessibility and easiness of tax related information.

Component 2: Tax Literacy. This dimension represents 22.810% of the total variance, and with component 1 it explains 45.732% of the total variance cumulatively. This component consists of two items: *wincq* and *tpunlq*. They focus on taxpayers' knowledge of tax law, especially on those tax law provisions that provide rules and requirements on income disclosure and obligation to submit tax return also by individuals who earn income abroad. One question asks about the meaning of the concept world income (*wincq, +)*, and the second question checks whether respondents understand clearly meaning of the concept of the taxpayer with unlimited tax liability (*tpunlq, +)*. Component 2 suggests that tax compliance of individuals who work abroad is closely linked and positively influenced by depth of knowledge of the tax law provisions and regulations. Our finding is consistent with findings in other empirical research studies (Gangl et al, 2014; Nichita, 2015; Rhoades; 1999). Policy implication is, that to improve tax compliance, Slovak government, including tax administration, should pay appropriate attention to quality education of individuals in the field of tax requirements.

Component 3: ***Foreign Income Level and Knowledge***. This dimension represents 22.295% of the total variance, and together with other two components it explains 65.027% of the total variability. It consists of two items. First, responses on question whether individual taxpayer submitted tax return to declare income above 1,800 Euro earned abroad in previous tax year (*sbmtr, +)*. Disclosure of foreign income earned abroad by individual taxpayers certainly increases tax compliance. It is interesting that this item is combined with item which examines whether individual taxpayers know that they have to submit tax return even if they earn income only abroad (*know*, +). Both items together indicate that individuals with higher income and more knowledgeable tend more likely to comply with tax obligations. This finding implies, that to boost tax compliance, Slovak government should pay more attention not only to higher income taxpayers, but also to individuals with lower income.

Our research proves that both, economic and behavioral factors, play important role in enhancing tax compliance of Slovak individuals who earn income abroad.

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