EXPLORATORY FACTOR ANALYSIS ON DETERMINANT FACTORS TO TAX EVASION BEHAVIOR: VIETNAMESE PERSONAL INCOME TAX CASE

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Abstract

Theoretical underpinnings and prior works have shown a dozen of determinants to tax evasion behavior. Some suggests categories of variables have been identified in tax evasion literature; however, these groups are manually divided basing on historical record of literature. Therefore, the study would base on data survey questionnaire on Vietnamese personal income tax case and apply Exploratory Factors Analysis technique to test and figure out determinant factor groups. The result suggests that there are four main determinant factors groups to tax evasion behavior, including deterrence factor, government performance factor, policy fairness factor, and tax knowledge factor.

1. Introduction

There is no doubt that tax plays a very important role and matters the development of nations in the world (Miskama, M., Noorb, R.M., Omarc, N. and AbdAzizd, R., 2013; Owens, J. and Parry, R., 2009). It constitutes a very most important source of government revenue in countries in order to finance public services such as transportation, health care, education and others; however, many people do not understand the crucial role of tax towards the growth of the country. That's why, to all the countries, tax liability is compulsory to everyone, but many taxpayers have been intentionally and unintentionally finding ways to evade the tax law. Policy attention to tax evasion was spotlighted after the financial crisis of 2008, the Great Recession, and the large deficits that followed (Slemrod, J., 2016). Finding determinants to tax evasion would be helpful to the policy maker to address the problem. And it seems to be better if all of determinants should be grouped into specific categories for macro policies and solutions.

The scarcity of evidence on determinant factor groups towards tax evasion is a call for the author to design empirical study that

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will contribute to tax evasion literature, and propose main categories of determinants to tax noncompliance behavior. Personal income tax is a direct tax which directly imposes taxes on personal income; accordingly, people would easily experience the tax burden and show their behaviors and decision on tax payment liability. Therefore, the paper would study Vietnam's personal income tax as case for empirical evidence.

2. The theoretical framework, model and methodology

2.1. Theoretical framework

According to Belkaoui, R. (2004) and Khlif, H. & Achek, I. (2015), the justifications for the determinants of tax evasion are based on three theoretical perspectives – general deterrence theory, economic deterrence models and fiscal psychology. Many empirical papers dealing with the determinants of tax evasion are identified (Ali, M., Fjeldstad, O.H. and Sjursen, I. H. (2014); Belkaoui.R., 2004; Picur and Belkaoui, R., 2006; Wright, V., 2010; Allingham, M.G. and Sandmo, A., 1972). Based on theoretical underpinning and previous studies, determinant factors of tax evasion are classified into four groups as follows;

(1) Deterrence factor

(2) Government performance factor

(3) Policy fairness factor

(4) Knowledge factor

2.1.1 Deterrence factor (DEF)

This group of factors based on the General Deterrence Theory (Khlif, H., & Achek, I., 2015 & Belkaoui, R., 2004). The theory refers to the capability of deterrence regulations (penalty and audit) to reduce the phenomenon of tax evasion and enhance tax compliance in one country.

There are many other empirical studies examining the relations of the deterrence factors to tax evasion. Allingham, M.G. and Sandmo, A. (1972) conclude that there were positive relations between declared income and the penalty rate and the probability of detection (audit). It means that if the government increases the penalty and apply tougher audit, it will help to reduce tax evasion. Kiri, N. (2016) reviews factors influencing on tax evasion. Based on previous researches' results, he comes to a conclusion that a high penalty rate tends to be an effective method to prevent people from evading tax, and that an increase in penalty rate enhances compliance behavior so decreases tax evasion actions. Similarly, Wright, V. (2010) supposes general deterrence theory suggested that increasing the certainty of punishment, potential offenders may be deterred by the risk of suspicion. That is, deterrence factors are implemented by increasing the probability of detection (audit) and imposing of tougher penalties. Therefore, it comes to a hypothesis that applying deterrence methods by applying high penalty rate and tough audit regime would help to reduce tax evasion.

2.1.2. Government performance factor (GPF)

Government performance factors are based on the Theory of Fiscal Psychology and Economic Deterrence Theory (Khlif, H., & Achek, I., 2015; Belkaoui, R., 2004; Damayanti, T.W., Sutrisno, T., Subekti, I. and Baridwan, Z., 2015).

The Fiscal Psychology Theory suggests the importance of positive policies that are developed by government to improve

taxpayers' perception in government performance in order to reduce tax evasion (Damayanti, T.W., Sutrisno, T., Subekti, I. and Baridwan, Z., 2015). Moreover, Tsakumis et al. (2007) shows that trust in government performance is negatively associated with tax evasion across countries. Accordingly, as if the government performs better, the tax evasion behavior would be reduced.

Ali,.M, Fjeldstad,. O & Sjursen, H. I, (2014) find out that tax compliance attitude was positively correlated with the provision of public services by the government. This expresses the role of government performance in providing public projects and services. Besides, The World Value Surveys project supports the efforts of governments to improve tax morale and tax compliance through strengthening and clarifying the links between revenue and expenditure, building taxpayer profiles, increasing the transparency of tax policy making and modernizing tax administration procedures to avoid negative interactions among the drivers of compliance (OECD, 2013). GmbH (2010) advises the governments to enhance tax compliance through a transparent, accountable and efficient manner by developing a sound state-society relationship and enhancing the legitimacy of the state taking into account the entire public system. Picur & Belkaoui, R. (2006) document that the low level of corruption is positively associated with tax compliance, whereas the high level of bureaucracy increases tax evasion. Economic Deterrence Theory basing on the cost and benefit analysis suggests tax evasion decreases if a taxpayer finds the benefit of the public expenditures for public projects and services as return for tax payments.

In Vietnam, the President Nguyen Xuan Phuc also agrees that the Vietnamese government should take the people's perception and satisfaction to assess the government performance and effectiveness (Hoai Thanh, 2017).

2.1.3. Policy fairness factor (POF)

According to Price Waterhouse Cooper - PWC (n.d), tax policy refers to what taxes governments choose to levy, in what amounts, and on whom. It concerns broad issues such as how much tax the government needs to collect in order to pay for expenditures and the effect that taxes can have on overall economic activity. It also concerns issues of fairness, by which who should pay taxes with how much in tax rates, and which allowances and incentives are allowed to narrow the gap of inequality.

Kircher, Hoelzl & Wahl (2008) suggest that the levels of tax compliance involved many contributing factors including the perceived of tax system fairness by taxpayers. Additionally, it's concluded that the high level of policy fairness is negatively associated with tax evasion (Richardson, 2006).

Many Vietnamese taxpayers suppose that they consider tax policy inequality regarding tax rate, tax allowance and tax incentives. Accordingly, the current tax policy in Vietnam is unfair because they are suffering a high tax rates for their income from salaries and wages. Besides, the current tax allowances are too low, so that they cannot afford their living expenses after paying tax and getting deduction from tax allowances. Moreover, there are no incentives for encouraging people to pay more taxes in comparison to those who don't pay taxes or pay lower tax amounts (Anh Hong, 2015; Le Thanh, 2017).

2.1.4. Knowledge factor (KNF)

Hassan, N. et al (2016) suppose that individual taxpayers need adequate various aspects of tax knowledge in order to fulfill their tax liability responsibly, precisely and timely. Without tax knowledge, they may involve in certain risks being penalized by the tax authority.

The Economic Deterrence Theory suggests the form of better education/knowledge to enhance tax compliance.

Findings from prior researches are mixed. Hassan, N. et al (2016) said that there are many cases of unintentional non-compliance in Malaysia due to taxpayers' limited knowledge about tax and poor familiarity with the new tax system. Ali, M., Fjeldstad, O., & Sjursen, I. (2014) come into a conclusion that tax knowledge and awareness are found to be positively correlated with tax compliance attitude. Kasipillai & Jabbar (2003) and Kirchler et al. (2006) document that possessing tax knowledge would lead to higher compliance rates. On the contrary, Collins et al. (1992) find that the respondents' tax knowledge is not significantly correlated with their tax compliance behavior in general. An earlier study by Harris (1989) claim that tax knowledge has no direct significant impact on taxpayers' compliance behavior.

2.2. Methodology

The methodology applied in the thesis is quantitative approach (Creswell, W.J., 2014). Quantitative approach is necessary because the study conducts an empirical study, collect data by survey questionnaire, and then then find out the determinants factors to tax evasion behavior. For this research, internet survey questionnaire is applied because it can be distributed easily and quickly, then help to save time and cost effectively, managed conveniently and the survey respondents can answer whenever they have free time (Sekaran and Bougie, 2010).

2.2.1. Questionnaire

Design the questionnaire and measurement

Based on the theoretical framework, empirical studies, and reference to Vietnam personal tax law and regulations, interview information of taxpayers, the research questionnaires are designed as follows;

Using likert questions (Flatworldsolution, n.d), respondents are asked to evaluate people's knowledge and understanding on personal income tax in Vietnam, and people's perceptions on personal income tax related issues as well.

The lilert scores range from 1 to 4, which stand for the lowest level of "know nothing" of PIT related issues to the highest level of "know very well" of tax issues including tax law, tax calculation, tax forms declaration, online tax software, tax finalization and return, and penalty of tax evasion. This question is to measure the variable "tax knowledge factor" - KNF.

The study measures the deterrence factor (DEF), government performance factor (GPF) and policy fairness factor (POF) by likert questions to see people's perception of deterrence methods (high penalty, and tough audit and examination), government performance through tax reform, public projects and services, tax services, tax budget transparency, tax anti-corruption, and policy fairness in tax rates, tax allowances and tax incentives in Vietnam. The likert scores

ranging from 1 to 4 point stand for four levels of agreement with the assessments, which include "Totally disagree", "Partially disagree", "Partially agree", and "Totally agree". Accordingly, higher scores mean a higher level perception of deterrence methods, government performance and policy fairness in Vietnam.

The question to clarify whether people evade tax or not is based specific actions in tax evasion regulations in Vietnam (i.e Article 3, Circular no 166/2013/TT-BTC). As a result, people who perceive that they conducted one or more actions in the list mean that they evaded tax.

The dependent and independent variables and observation are coded as follows (Table 1);

Table 1: Research variables and measurement items

Code	Content of variable observations	Reference
Deterrence factor (DEF)		
DE1	Penalty rates are high	General Deterrence Theory
DE2	Audit regime and examination are tough	
Government performance factor (GPF)		
GP1	More tax reform	Economic Deterrence Theory and Fiscal Psychology
GP2	Clear tax guideline and supporting services	
GP3	Provide good public projects and services	
GP5	Transparent and effective tax budget expenditure	
GP6	Good methods for tax anti-corruption	
Policy fairness factor (POF)		
PO1	Low tax rate	Fiscal Psychology; Anh Hong (2015); Le Thanh (2017)
PO2	Suitable tax allowances	
PO3	Many tax incentives	
Knowledge factor (KNF)		
KN1	Tax law	Ali, M., Fjeldstad, H.O., & Sjursen, I.H. (2014); Economic Deterrence Theory
KN2	Tax calculation	
KN3	Declaration of tax forms	
KN4	Using online tax software	
KN5	Tax finalization and return	
KN6	Regulations of tax evasion	

Code	Content of variable observations	Reference
Tax evasion (TV)		
TV1	Delay submission of tax registration files/dossiers	Ali, M., Fjeldstad, H.O., & Sjursen I.H., (2014); Circular no 166/2013/TT-BTC
TV2	Delay notification of information in registration dossiers compared with required time	
TV3	Provide inappropriate information in tax declaration dossiers	
TV4	Delay submission of tax declaration dossiers compared required time	
TV5	Declare wrong information leading to reduce tax amount or increase tax amount refund	
TV6	Declare increase in tax costs or tax exempts/relief	
TV7	Failure to declare all taxable incomes	
TV8	Never conducted such above actions	

Testing and finalizing the questionnaire

After the first drafting the questionnaire, the author ask for supervisor who always understand, give advices and support this study process, researchers who have much experiences in conduct survey questionnaire researches, tax experts who are also tax professors in Foreign Trade University, tax officers in Vietnam who understand well the regulations and the reality of law implementations to give comments on the survey design and contents.

After receiving comments from supervisor and experts, some sentences in the questionnaire are reworded to make it become familiar with the life and less sensitive to answer. After that, the author conducts a test with potential respondents who are senior professors at university, accountant and audit consultant, and officers as well. They are randomly chosen by connecting and asking through zalo and email. The author finalizes the questionnaire after testing respondents.

Sampling and Data collection

Survey sample is randomly selected. Responses taken from the sample will be either taken personally or through online platform of Surveymonkey.com. Accordingly, the author has launched the questionnaire on various channels such as social blogs, university alumni association, people community, friends and friends' relationship. As a result, the questionnaire is circulated around Vietnam in one month. The sample size gets 420 respondents. The data is processed by Statistical Package for Social Science (SPSS) software to get the results.

2.2.2. Reliability of survey

The reliability of survey means that it's consistent and stable, and, hence, predictable and accurate (Kumar, R., 2005). That's the degree to which the questions used in a survey bring the same type information each time they are used under the same conditions.

The research variables are constructed from 2 to 6 different variables of observation; therefore, for reliability testing, the common methodological factors are the Cronbach Alpha coefficient (Suanders et al., 2007). To examine the relevance of an item of question, the total variable correlation coefficient (Hair et al., 2006) should be considered. Testing standards are Cronbach Alpha coefficients of at least 0.7 and a minimum total correlation coefficient of 0.3 (Nunally and Burstein, 1994). Using SPSS software to process with the survey data, he Cronbach Alpha coefficient test shows that the coefficients are greater than 0.7 (Table 2). The correlation coefficients of the variables observed in a factor are greater than 0.3. This shows that research concepts are appropriate and reliable.

However, due to the limitation of time, the author fails to test the questionnaire with the same groups of respondents in many times to examine the consistence of answers. Besides, the thesis is about "tax evasion" which is quite sensitive to answer. Then after getting comments from testing, the author has to reword some questions to get the information and respondents. Therefore, for some above aspects, the reliability is one of limitation of the study's methodology.

2.3. Data results

2.2.1. Verification of scale reliability

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Table 2: Cronbach Alpha reliability test results

No	Factor	Cronbach Alpha	Minimum of Total correlation	Number of observation variables
1	Deterrence factor	0.818	0.693	
2	Government performance	0.904	0.713	6
3	Policy fairness	0.775	0.462	
4	Knowledge	0.927	0.748	

Source: Results from data analysis using SPSS software version 20.0

2.3.2. Exploratory Factor Analysis (EFA)

The Exploratory Factor Analysis (EFA) method is interdependence techniques, which means that there are no independent variables and dependent variables that rely on correlation between variables. EFA method is used to abbreviate a set k of observation variables into a set F (F <k) of more meaningful factors. The basis of this reduction is based on the linear relationship of the

elements to the original variables (observed variables). Mayers, L.S., Gamst, G., Guarino A.J. (2000) mentioned that in EFA, the method of extracting Pricipal Components Analysis with varimax rotation is the most commonly used method. According to Hair & et al (1998), factor loading is the norm to ensure the true level of EFA, so that, the factor loading of greater 0.3 is considered to be the minimum. The condition for EFA is to satisfy the following requirements including in factor loading is greater 0.3 (> 0.3); $0.5 \leq KMO \leq 1$. The KMO (Kaiser-Meyer-Olkin) coefficient is an index used to determine the suitability of factor analysis. High KMO values have factorial analysis as appropriate. Besides, Bartlett's test is statistically significant (Sig. <0.05), which is a statistical item used to consider the hypothesis of unrelated variables in the whole. If this test is statistically significant (Sig. <0.05), the observed variables are correlated in the overall. Moreover, percentage of explaining variance (> 50%), which represents the percent variance of the observed variables. If the variance is 100% then this value tells you how much factor analysis explains.

Table 3: Result of EFA of dependent variables

Observation variables	Factor	Cronbach Alpha	Minimum of Total correlation	Number of observation variables
	1	2	3	4
KN3	.889			
KN5	.886			
KN4	.851			
KN1	.848			
KN2	.840			
KN6	.827			
GP4		.881		
GP3		.868		
GP5		.843		
GP2		.782		
GP1		.705		
DE1			.895	
DE2			.830	
PO3				.348
PO1				.903
PO2				.861
KMO	**.849**			
Sig.	**.000**			
Variance explanation (%)	**75.27**			

Source: Data analysis results by using SPSS software version 20.0

The results of the analysis show that KMO coefficient is 0.849 that is greater than 0.5, Bartlett's test has significant level which is less than 0.05, the variance explained by 75.27% is greater than 50%, loading factor coefficients are greater than 0.3, and observation variables form four factors (Table 3) as same as four determinant factors developed by theoretical frameworks. This shows that the criteria of exploratory factor analysis are satisfactory, suggesting that the use of exploratory factorial analysis for research data is appropriate. As a result, four categories of determinant factors to tax evasion behavior including deterrence factor, government performance factor, tax policy fairness, and tax knowledge as well are valid and reliable.

4. Conclusion

The study contributes to literature on determinant factors to tax evasion and shows the practical implication the government and tax authority in designing the personal income tax policy in pursuit of addressing tax evasion situation. The result suggests that there are four main determinant factors groups to tax evasion behavior, including deterrence factor, government performance factor, policy fairness factor, and tax knowledge factor.

This paper is limited with Exploratory Factor Analysis (EFA), but Confirmatory Factor Analysis (CFA) technique and regression method would be used to verify the factor structure of a set of observed variables, and confirm the hypothesis that a relationship between the observed variables and their underlying latent construct exists.

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