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Tax knowledge and tax compliance of the small and medium enterprises in Vietnam

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Abstract

This research explored the motivations, behaviors, and consequences of tax non-compliance and aimed to provide empirical evidence to evaluate the impact of tax knowledge, perceived non-tax opportunity and felt tax loss on tax compliance in small and medium enterprises (SMEs). A quantitative approach on a panel of 326 SMEs through SEM linear structural model analysis using SmartPLS software. The hypotheses were tested in a parallel mediation model. The perceived non-tax opportunity and felt tax loss, in contrast to tax knowledge, negatively affect taxpayers' behavior and tax-compliance level. The two mediators, i.e., perceived non-tax opportunity and felt tax loss, create an indirect relationship between tax knowledge and tax compliance. Without the two mediators, there is no relationship between tax knowledge and tax compliance. The study also added evidence in supporting the view that tax compliance behavior depends on both personal (economic) and social motivations. Furthermore, in the disadvantage case, prospect theory is more suitable to explain tax non-compliance behavior than deterrence theory and vice versa.

Keywords: Audit, Felt tax loss, Opportunity, Tax compliance, Tax knowledge, Tax.

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1. Introduction

Tax research is a central topic in national governance, especially in developing nations that require significant resources for investment in development. In Vietnam, SMEs are the primary source of tax revenue. According to [Trinh and Thanh \[1\]](#) in Vietnam, SMEs make a major contribution of state budget revenue. However, tax evasion by SME is widespread; it is estimated that the total amount of tax lost from SME is approximately VND 10 trillion, which is

equivalent to roughly 4.6% of the total annual corporate income tax. According to the audit results of the State Audit Office of Vietnam in 2022, of the total samples selected for tax audit, about 90% of the samples violated tax laws [2].

There are two main branches of research on tax compliance based on economic theory and psychology, including behavioral aspects. Economic approaches to tax compliance often utilize simulation studies to address taxpayers' motivations. These simulations, however, may not accurately reflect real-world data concerning perceived tax loss levels [3]. In contrast, models grounded in social psychology theory are adept at explaining taxpayer behavior by considering individual intentions, although the empirical evidence supporting these models remains mixed [4]. Empirical studies confirm that various factors influence individuals' compliance decisions, including personal and societal norms, tax knowledge, fairness judgments, demographics, attitudes, isomorphic forces, and motives [5-8]. However, these studies typically only examine the correlation between compliance behavior and other factors based on taxpayers' intentions and attitudes. Nevertheless, turning intention into personal behavior also depends on other factors, such as personal and social norms. This reliance on taxpayer intentions alone can lead to inaccuracies in measuring tax compliance. Our study uses tax compliance as a proxy measure to evaluate the level of tax compliance among SME owners and managers. Assessing compliance indirectly via the quality of tax declarations presents two key advantages: it mitigates the impact of subjective factors that may affect taxpayers' decisions to evade or avoid taxes, even in the absence of the capacity or qualifications to do so; furthermore, it offers insights into the decision-making processes of taxpayers in contexts where opportunities and perceptions of potential loss exist.

Most studies focus on estimating the amount of tax payable compared to the amount of tax paid, or measuring the level of tax non-compliance on the part of tax authorities or tax-audit agencies. However, very few studies have examined compliance with preparing and declaring tax reports and paying the correct tax amount on time [9]. Furthermore, there is a lack of empirical studies examining the relationship between tax knowledge, perceived non-tax opportunity, felt tax loss, and tax compliance. Therefore, this study aims to answer the following research questions:

RQ1: How does tax knowledge influence the tax compliance decisions of SME in Vietnam, through their perceptions of tax non-compliance opportunities and the level of felt tax losses when complying with tax laws?

RQ2: Perceived non-tax opportunity and felt tax loss have mediating effects on the relationship between tax knowledge and tax compliance among SME in Vietnam?

This study aims to enhance the understanding of the motivations for tax compliance by examining two distinct cases of tax non-compliance among taxpayers permitted to offset perceived losses. By investigating perceived non-tax opportunities and felt tax losses as simultaneous mediators, the study obtains deeper insights into how these factors collectively influence the relationship between tax knowledge and tax compliance. The existing literature reveals an inconsistent relationship between tax knowledge and compliance, indicating a gap in empirical research. By integrating both mediators, this research aims to construct a robust theoretical model that accurately reflects the psychological mechanisms underpinning tax compliance behavior.

2. Theoretical Basis for Tax Compliance

The definitions of tax compliance vary based on the goals and objects of the research Taing and Chang [10]. Allingham and Sandmo [11] defined tax compliance as "the decision to declare actual income under to tax authorities under conditions of uncertainty. That is, taxpayers may decide to declare their actual amount tax liability or less than the actual amount; their decision depends on the probability of being caught and the penalty rate". Adopting a social and psychological approach, Roth, et al. [12] defined tax compliance as the "accurate reporting of tax liability" (p. 20), whereas Kirchler [8] identified it as "taxpayers' willingness to pay their taxes". Tax compliance may not be forced [13] or may be viewed as the correct and complete compliance with tax laws [14].

Taxpayer may voluntarily fulfill their tax obligations or explicitly decide to evade paying their full share. In the context of tax behavior, much research concerning tax compliance decisions is grounded in prospect theory, framing effects, and the propensity for risk-seeking behavior when faced with potential losses, in addition to risk avoidance under potential gains [15]. As proposed by Kahneman and Tversky [16] prospect theory seeks to bridge the gap between theoretical models and actual behavioral observations in decision-making processes. This theory posits that individuals avoid risks when faced with positive prospects. In contrast, they are likely to engage in riskier behavior when confronting negative prospects in an effort to mitigate perceived losses [16].

The tax compliance behaviors of SME owners are influenced by several factors. These factors can be grouped into the following categories: (i) tax knowledge, which includes awareness and understanding of tax [17, 18]; (ii) taxpayer attitudes, such as trust in the tax system [18, 19] tax fairness [5, 18, 20] or different tax burdens [21]; (iii) opportunities for non-tax compliance, such as personal expenditures, which may be tax-deductible for SME [22] and cash-based economic transactions that are more challenging to detect [23-25] and (iv) institutional, firm and entrepreneurs' characteristics [26] economic and non-economic public policies [27]. Several studies confirm the presence of non-tax compliance, but the degree of non-compliance varies with contexts and times [24, 28]. Thus, eliminating non-tax compliance may be challenging for various reasons, including the fact that non-compliance can have positive aspects, such as helping SME generate capital to expand their businesses and improve competitiveness [29]. Furthermore, tax compliance can be more complex than non-compliance. Additionally, non-tax compliance is easier to commit and harder to detect than other financial frauds because it is hidden in everyday economic transactions. For instance, the use of accounting techniques or business strategies to minimize taxes may not qualify as non-tax compliance. According to the theory of planned behavior, taxpayers' behavior is driven by their intentions [10].

3. Literature Review and Hypotheses Development

3.1. Model For Measuring Tax Compliance Levels

Several theoretical tax-compliance models that are based on neoclassical economic theory have attempted to explain taxpayer decision choices. For example, the expected utility theory [30]. assumes that taxpayers do not like risk but always want to maximize utility and only accept risks to avoid losses because they fear being detected and punished [11]. In contrast, [Kahneman and Tversky \[16\]](#) prospect theory posits that people will make different decisions depending on which choice includes gain frames and felt tax loss frames, collectively known as the dependency framework. The tax dependency framework helps explain taxpayers' behaviors when faced with greater-than-expected risks or perceived losses. Individuals tend to exhibit risk aversion when it comes to gains with high probabilities and losses with low probabilities while demonstrating risk-seeking behavior for gains perceived as having low probabilities and losses associated with high probabilities. When faced with actual or anticipated losses, people are inclined to take risks to recover from or prevent such losses. Conversely, in scenarios involving potential gains, decision-makers typically exhibit risk aversion [8].

SME' tax compliance decisions also depend on other factors, such as tax knowledge and perceived opportunities for non-tax compliance by taxpayers. [Kamleitner, et al. \[31\]](#) proposed a theoretical model to evaluate the tax compliance behavior of SME owners based on prospect theory, including opportunities for non-compliance, tax knowledge, and tax dependency framework. This theoretical model was based on previous research results tax compliance and is yet to be experimentally verified. Furthermore, this model does not consider the influence of tax knowledge on the opportunity for non-tax compliance in the case of perceived loss on tax compliance decisions. [Bornman and Ramutumbu \[32\]](#) in summarizing the theory of tax knowledge, affirmed the vital role of tax knowledge in influencing taxpayers' behavior and tax-compliance decisions, especially in cases where taxpayers have tax compliance obligations and promote voluntary tax compliance.

A tax compliance model grounded in behavioral economics can effectively estimate levels of tax compliance and non-compliance, as well as the economic motivations of taxpayers. However, these models often fail to account for behaviors driven by factors beyond rational choice or utility maximization. Conversely, tax compliance models informed by social psychology can elucidate the social motivations of taxpayers, particularly concerning voluntary tax compliance and tax morale. Nonetheless, mixed evidence supports this theory, largely due to a gap in understanding the behavioral intentions of taxpayers, whether individuals or organizations.

To address this gap and clarify the economic and social motives of SME owners and managers, this study proposes a tax compliance measurement model ([Figure 1](#)). According to this model, tax compliance is influenced by tax knowledge, which is shaped by three factors: (i) the level of tax knowledge, (ii) awareness of non-tax compliance opportunities, and (iii) the taxpayer's attitude (intention). The level of tax compliance also depends on two key factors: perceived non-tax opportunity and felt tax loss.

Furthermore, perceived non-tax opportunity is determined by three components: tax awareness, evaluation of benefits, and assessments of the likelihood of detection and punishment. Similarly, felt tax loss is characterized by the taxpayer's perception of the fairness of the tax authority and their reactions when confronted with a tax bill exceeding expectations.

The tax compliance measurement model has a dual purpose: to evaluate whether tax knowledge serves as a parallel mediating factor affecting taxpayers' awareness and attitudes, and to assess the opportunities and perceived losses associated with fulfilling tax obligations, which are critical determinants of tax compliance levels.



Figure 1.
Tax compliance measurement model.
Source: [Dung, et al. \[2\]](#).

3.2. Tax Knowledge

Tax compliance theory does not provide a single universal definition of 'tax knowledge'. The term is often used differently depending on the context. Generally, tax knowledge refers to the understanding or awareness about tax system and tax requirement in term of law [18]. It includes the knowledge of tax roles, tax laws, responsibility for declaring and paying taxes [33] tax evasion opportunities [34] and the ability to estimate the economic consequences when making decisions [35]. Tax knowledge can be divided into two levels—the level of general knowledge about taxes and the level of willingness to accept tax obligations. The latter refers to the point “where taxpayers fully understand why they must pay taxes and comply with the law” Amin, et al. [36]. Bornman and Ramutumbu [32] proposed a conceptual framework for tax knowledge that includes three components—general tax knowledge, tax law knowledge, and knowledge of tax procedures—to provide a more consistent measurement framework. Recent studies by Kasipillai, et al. [37] and Olsen, et al. [38] have indicated that tax knowledge has the most positive and significant influence on tax compliance behavior and decisions in terms of both economic and social motivation. Kamleitner, et al. [31] suggested that tax knowledge may play a more significant role for SME owners than for individual taxpayers who are employees, since the former group interacts less with tax authorities compared to other groups of taxpayers.

However, some studies provide contrary evidence, indicating that knowledge has no effect or, in some cases, a negative effect on tax compliance behavior [39, 40] because taxpayers have enough knowledge and opportunities to avoid or evade taxes, such as the research results of Hapsari [41] indicated that taxpayers with adequate knowledge of taxation got tax avoidance efforts.

3.3. Perceived Non-Tax Opportunity

Perceived non-tax opportunity refers to the various ways in which employees, business individuals, and business owners can evade or avoid paying taxes [42]. It is often defined as the perception that the benefits of not paying taxes outweigh possible detection and punishment because the taxpayer has enough knowledge and ability to save the amount of tax payable. Therefore, taxpayers may choose not to comply with taxes based on cost-benefit considerations, assuming that taxpayers always want to maximize utility. Generally, the greater opportunity- or, more accurately, perceived greater opportunity - to declare lower taxes is associated with self-employment and moonlighting. Besides higher opportunities to hide income and claim improper deductions, paying “out of pocket” is more likely to be considered a loss than receiving tax-deductible income [13].

SME owners also have several other opportunities for non-tax compliance, such as enjoying more tax incentives; having several opportunities to interact with tax authorities; being proactive about business results; having complete authority to decide on strategy and tax planning; not being required to do accounting and tax reporting based on software or automated processes, unlike large enterprises; not being subject to an annual financial statement audit; and being small in scale with few inspections [31]. Additionally, for SME, the trade-off for reputation and prestige will be less heavy than for large enterprises.

Research has consistently indicated that the availability of opportunities to evade or avoid taxes is one of the most significant factors influencing tax evasion or avoidance [13]. Empirical studies have proved that the higher the opportunity for non-tax compliance, the lower the level of tax compliance. Accordingly, in this model, perceived non-tax opportunity is understood as the perception that the benefits outweigh the possibilities of detection and punishment because the taxpayer has the requisite knowledge and qualifications to perform non-tax compliance.

3.4. Felt Tax Loss

According to Alm [4] the level of tax compliance cannot be predicted by just individuals' economic motivation, because individual tax compliance behavior also depends on interactions between individuals as well as between individuals and different groups of people. Kahneman and Tversky [16] prospect theory posits that people will make different decisions depending on the choices they frame. In the first option, the gain frame pertains to the expected benefit, i.e., the amount of tax deducted or refunded is greater than expected or the amount of tax paid is lower than expected. On the other hand, in the loss frame, a taxpayer believes the amount of tax due is higher than the amount paid. Therefore, a tax difference lower than this expectation is considered to be a benefit (i.e., a gain frame) and the taxpayers tend to avoid risks, thus resulting in increased tax compliance. In the second option, the tax amount to be refunded or deducted or the amount that is additionally payable is different from the taxpayer's expected tax amount. In this case, people are willing to accept greater risk to avoid certain losses, thus resulting in an increased level of non-tax compliance.

Many simulation studies have provided empirical evidence demonstrating the relevance of prospect theory for tax-related decisions; for example, Chang, et al. [43] found that risk seeking occurs more frequently in situations where tax payments are considered losses. Similar to Robben, et al. [44] conducted an international simulation study in six countries and demonstrated that non-tax compliance and fraud are more pronounced among those facing the possibility of additional tax payments.

SME owners are also considered individual taxpayers and, therefore, face different contingencies in choosing whether to comply with taxes and the level of tax compliance. They often desire to reinvest their profits and may view taxes as restricting their freedom to make financial choices and a significant loss of their own capital. Within prospect theory, these owners might thus perceive tax evasion as risky in the loss domain [16]. In case of perceived losses due to fulfilling tax obligations, SME owners will feel a greater loss for the same amount of tax payable than managers of companies. On the other hand, for SME, tax payment is directly linked to business decisions and the taxpayer's personal life. Therefore, when paying taxes, SME owners feel like they may have to take it out of their pockets, and the sense of loss will be more

pronounced for SME owners. Therefore, to reduce the perceived loss, SME owners often accept higher risks to minimize the amount of tax payable (profitable choice) [16].

Therefore, this study proposes a research model to examine the impact of tax knowledge on taxpayers' tax-compliance decision-making choices based on two behavioral economic theories—utility theory and prospect theory. The study further inherits its dependency factor from Kamleitner, et al. [31] conceptual model.

Taxpayers who own SME perceive the benefits of tax evasion to be much greater than the possibility of detection and punishment (assuming they have sufficient tax knowledge) but still comply with paying taxes. This could be the influence of the third factor in the dependency frame: felt tax loss. With the perceived loss being more significant for SME owners and managers compared to other taxpayers, as well as having to fulfill tax obligations beyond the expected levels, may be instrumental in making taxpayers less compliant. Accordingly, research model was proposed in Figure 2 and established research hypotheses (Table 1).

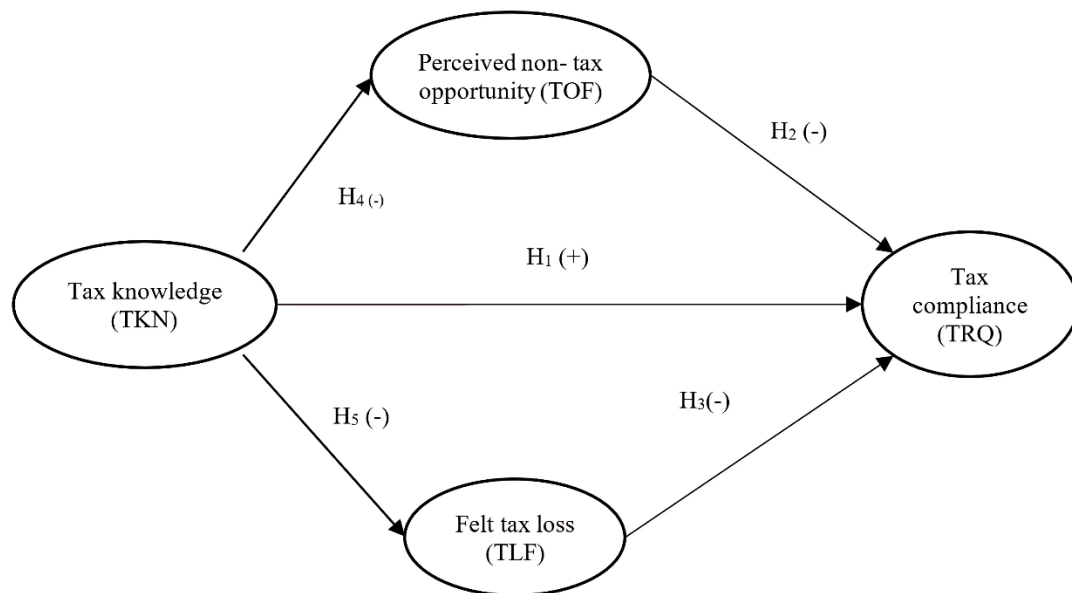


Figure 2.
Proposed research model.

Table 1.
Research hypotheses.

Hypotheses	Expected	Source
H1. Tax knowledge of SME owners positively influences tax compliance.	(+)	Kasipillai, et al. [37]; Olsen, et al. [38] and Kamleitner, et al. [31]
H2. Perception about non-tax compliance opportunity has a negative influence on SME owners' tax compliance	(-)	Marandu, et al. [45] and Kamleitner, et al. [31]
H3. Felt tax loss has a negative influence on SME owners' tax compliance	(-)	Alm [4] and Kamleitner, et al. [31]
H4. Perceived non-tax compliance opportunity mediates the relationship between tax knowledge and tax compliance	(-)	Marandu, et al. [45] Kamleitner, et al. [31] and Agegn and Abebe [21]
H5. Felt tax loss mediates the relationship between tax knowledge and tax compliance	(-)	Alm [4] and Kamleitner, et al. [31]
H6. The parallel mediating effect of perceived non-tax opportunity and felt tax loss on the causal relationship between the tax knowledge and tax compliance of SME	(+)	Author's expectations

4. Research Methodology

4.1. Sample and Data Collection Procedure

The population of SME is based on data sources from the General Statistics Office of Vietnam (GSO). The sample size used in a research study is an essential factor. According to Hair, et al. [46] the sample size depends on factors such as the significance level, R² value, and the maximum number of arrows pointing to a latent variable. Hoyle [47] recommended a sample size of 100 or more as a good starting point. Hence, this study used a sample size of approximately 300. To collect research data, the questionnaire designed on Google Docs was sent from July to October 2023 to 500 randomly selected SME owners and managers in Vietnam (selected from the General Statistics Office of Vietnam) via an e-mail containing a link to the questionnaire, who are taxpayers in Vietnam.

4.2. Measurement of Variables

This study based on Kamleitner, et al. [31] theoretical research model (Figure 2), which includes a dependent variable, (i.e., tax compliance), and three independent variables (i.e., tax knowledge, perceived non-tax opportunity, and felt tax loss). All items were measured using a seven-point Likert scale.

The dependent variable, tax compliance, is measured using ten scales developed from ten acts of incorrect tax declaration leading to underpayment of the tax amount or increase in tax amount exempted, reduced, or refunded (in accordance with the Vietnamese Law on Tax Administration 38/2019/QH14).

The independent variable scales, which are inherited from previous related studies, are measured using seven scales for tax knowledge, five scales for perceived non-tax opportunity, and seven scales for felt tax loss (Table 2).

Table 2.
Measurement scale in research.

Latent variable	Code	Number of measurement scales	Source of measurement
Tax knowledge	TKN	7	Bornman and Ramutumbu [32]; Taing and Chang [10]; Alm [4]; Marandu, et al. [45]
Perceived non-tax opportunity	TOF	5	Alm [4]; Marandu, et al. [45]
Felt tax loss	TLF	7	Kamleitner, et al. [31]; Marandu, et al. [45]; Bornman and Ramutumbu [32]
Tax compliance	TRQ	10	Vietnamese law on tax administration 38/2019/QH14

5. Research Results and Discussion

5.1. Descriptive Statistics

There were 344 responses, indicating a response rate of 69%. However, 18 responses were excluded from the analysis due to insufficient data, leaving 326 responses for analysis. The descriptive statistical results reveal that the majority of survey respondents are female (67%), have 3 to 5 years of experience (35.6%), and hold a bachelor's degree (40.8%). Furthermore, the largest proportion of SME surveyed have been in operation for more than 5 years (36.5%) (refer to Table 3).

Table 3.
Demographic profile.

Items		Frequency	Percent	Cumulative percent
Gender of respondent	Male	109	33.4	33.4
	Female	217	66.6	100.0
	Total	326	100.0	
Experience of respondent	From 1 to 3 years	106	32.5	32.5
	Over 3 years to 5 years	116	35.6	68.1
	Over 5 years to 10 years	84	25.8	93.9
	Over 10 years	20	6.1	100.0
	Total	326	100.0	
Qualification	After university	36	11.0	11.0
	University	133	40.8	51.8
	College	111	34.0	85.9
	Intermediate Level	46	14.1	100.0
	Total	326	100.0	
Business age	Less than 1 year	35	10.7	10.7
	1 to 3 years	107	32.8	43.6
	3 to 5 years	65	19.9	63.5
	5 to 15 years	70	21.5	85.0
	Over 15 years	49	15.0	100.0
	Total	326	100.0	

Table 4 shows that the mean for tax compliance (TRQ) is 3.38, indicating that the respondents fairly agree that they comply with the applicable tax laws. Also, the means for tax knowledge (TKN), perceived non-tax opportunity (TOF), and felt tax loss (TLF) are 3.27; 3.48, and 3.50, respectively. These values mean respondents agree fairly on tax knowledge, perceived non-tax opportunity, and felt tax loss. The difference in scores (standard deviations) is slight, indicating that the responses are close to the mean responses.

Table 4.

Descriptive statistics and correlation results.

Variable	Mean	SD	TOF	TLF	TKN	TRQ
TOF	3.48	0.68	1,000			
TLF	3.50	0.63	0.881**	1,000		
TKN	3.27	0.80	-0.252**	-0.252**	1,000	
TRQ	3.38	0.73	-0.767**	-0.780**	0.247**	1,000

Note: *p < 0.10; **p < 0.05; ***p < 0.01

5.2. The Measurement Model

The research model (Figure 2) included four factors—tax knowledge (TKN), perceived non-tax opportunity (TOF), felt tax loss (TLF), and tax compliance (TRQ). However, the variables measuring these factors must be more consistent across studies. Therefore, a Cronbach's alpha test was conducted to evaluate the reliability of the survey questions as a basis for measuring concepts. Reliability is measured through the Cronbach's alpha coefficient. There were six scales, including TLF5, TLF6, and TLF7 belonging to the felt tax loss factor and TRQ3, TRQ4, and TRQ9 belonging to the tax compliance factor (Figure 3). However, since the scales of the tax compliance factor have outer loadings <0.7, they were eliminated. Thus, after eliminating six scales that do not ensure reliability, the proposed measurement model includes four factors with 23 scales, all with outer loadings >0.7 (Figure 4).

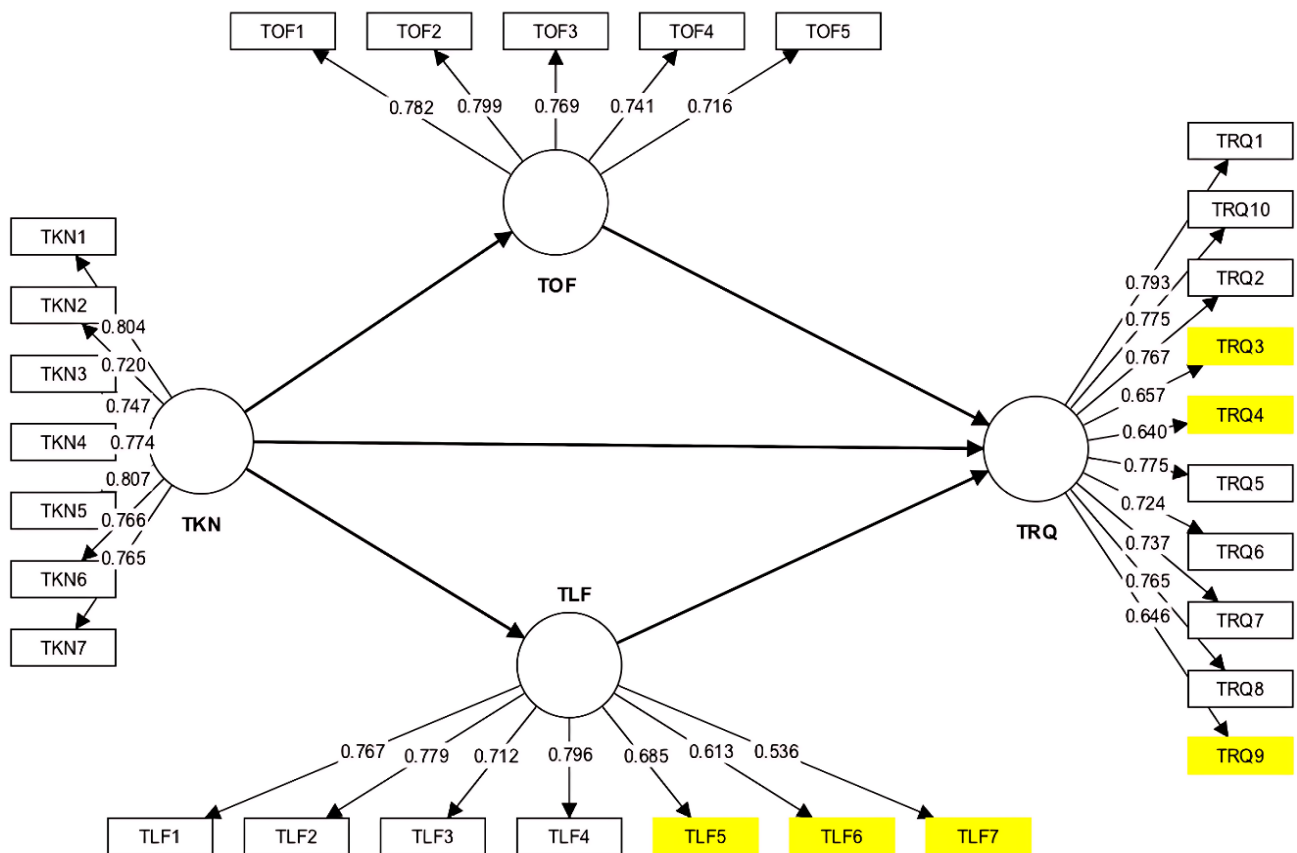


Figure 3.
The first test of the measurement model.

The output (Table 5) indicates that the Rho_A values of tax knowledge (0.910), perceived non-tax opportunity (0.874), felt tax loss (0.884), and tax compliance (0.915) are larger than 0.7, and all variables have an EVA of more than 0.5. The indicators of the four variables achieve the benchmarks of convergent validity.

The Cronbach's alpha values of tax knowledge (0.887), perceived non-tax opportunity (0.819), felt tax loss (0.826), and tax compliance (0.891) are greater than 0.7, and all variables have a composite reliability value greater than 0.7. Thus, the indicators of the four reflective measurement models achieve the reliability benchmarks.

Table 5.
Results of factor loadings in the PLS-SEM model.

Variable	Item	Item description	Factor loading	Cronbach's alpha	Rho_A (CR)	Average variance extracted (AVE)
Perceived non-tax opportunity	TOF1	I think there are some false tax declarations that tax authorities rarely detect.	0.783	0.819	0.874	0.581
	TOF2	I know that many businesses evade taxes but have not been detected.	0.800			
	TOF3	I can more easily adjust tax finalization reports than joint stock companies.	0.769			
	TOF4	I believe the tax authorities think that it is more difficult for us to evade taxes than large businesses.	0.740			
	TOF5	I realize that my business is inspected and inspected less than large businesses.	0.713			
Felt tax loss	TLF1	I would prefer a tax deduction.	0.825	0.826	0.884	0.657
	TLF2	I think the amount of tax paid reduces my income.	0.830			
	TLF3	I think profitable businesses should pay more taxes.	0.772			
	TLF4	I care more about the accuracy of tax finalization reports than financial reports.	0.814			
Tax knowledge	TKN1	My business's tax finalization reports do not contain material errors if inspected by the tax authorities.	0.810	0.887	0.910	0.592
	TKN2	My business's tax finalization reports do not declare increased expenses (using illegal invoices and documents).	0.726			
	TKN3	My business's tax finalization reports reflect the correct tax amount payable according to regulations.	0.743			
	TKN4	My business's tax finalization reports accurately reflect the tax amount payable.	0.770			
	TKN5	My business's tax finalization reports have all legal invoices and documents.	0.806			
	TKN6	My business's tax finalization reports are prepared on the basis of economic activities that are fully accounted for and in accordance with regulations.	0.765			
	TKN7	My business's tax finalization reports fully and properly declare related transactions.	0.764			
Tax compliance	TRQ1	My business has honestly declared all its tax obligations.	0.798	0.891	0.915	0.605
	TRQ10	My business does not declare increased costs (using illegal invoices and documents).	0.792			
	TRQ2	My SME's tax declaration and tax finalization documents reflect the correct tax amount payable according to regulations.	0.784			
	TRQ5	My business does not declare its tax obligations.	0.770			
	TRQ6	My business's tax declaration and tax finalization records have all legal invoices and documents.	0.751			
	TRQ7	My business has declared and settled fully and in accordance with regulations even though the tax declaration and payment procedures are quite complicated.	0.767			
	TRQ8	My enterprise fully and properly discloses affiliate transactions.	0.783			

Table 6 indicates that the HTMT values of all six pairs of the measurement models are less than 1.0, further ascertaining that the four measurement models achieved discriminant validity.

The analysis results indicate that the scales used in the study achieved reliability, convergent validity, and discriminant validity. Therefore, these scales are used analytically in the structural model.

Table 6.
Heterotrait-monotrait ratio (HTMT).

Variable	Tax knowledge	Felt tax loss	Perceived non-tax opportunity	Tax compliance
Tax knowledge				
Felt tax loss	0.311			
Perceived non-tax opportunity	0.294	0.987		
Tax compliance	0.296	0.824	0.859	

5.3. Respecification Measurement Model

The first step to ensure that the path coefficients, estimated by regression, are not biased, is to test the fit of the structural model by evaluating multicollinearity using the variance inflation factor (VIF). Multicollinearity can occur when VIF is greater than 5.0 [46]. The results in Table 7 show that all VIF values are less than 5.0, indicating that multicollinearity does not occur among all indicators of the four measurement models.

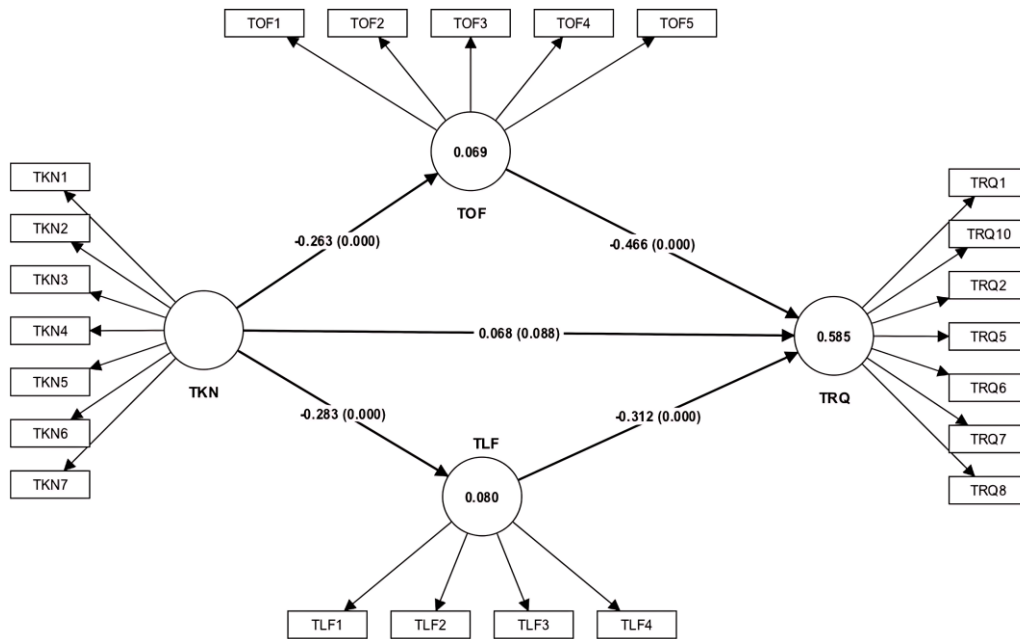


Figure 4.
The second test of the measurement model.

The output (Figure 4) shows that all the paths are significant at $p < 0.05$ except the tax knowledge-tax compliance paths ($\beta = 0.068$, $p > 0.05$). Since the path is insignificant—i.e., it does not occur in the study population and the results of this relationship are inconsistent in previous studies—removed the path from the model and re-ran the analysis. The new output is displayed in Figure 5.

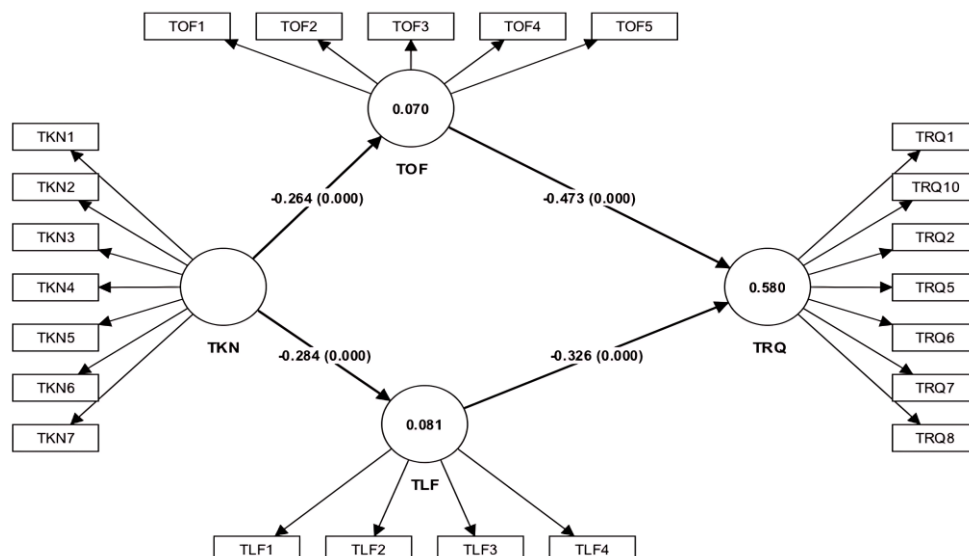


Figure 5.
Testing the measurement model.

According to the output in Figure 5, all the remaining paths are significant at a p-value less than 0.05. The results suggest that tax knowledge is a significant factor for both perceived non-tax opportunity ($\beta=-0.264$, $p<0.05$) and felt tax loss ($\beta=-0.284$, $p<0.05$), while perceived non-tax opportunity ($\beta=-0.473$, $p<0.05$) and felt tax loss ($\beta=-0.326$, $p<0.05$) are significant factors for tax compliance. All path coefficients are negative. This implies that perceived non-tax opportunity and felt tax loss are predicted to be parallel mediators for the relationship between tax knowledge and tax compliance.

Table 7.
Results of testing research hypotheses.

Hypothesis	Relationship	VIF	R	f ²	B	P	Results
H ₁	TKN -> TRQ	1.091	0.580		0.068	0.088	Rejected
H ₂	TOF -> TRQ	2.943		0.182	-0.466	0.000	Accepted
H ₃	TLF -> TRQ	2.978		0.086	-0.312	0.000	Accepted

In this case, tax knowledge significantly decreases perceived non-tax opportunity ($\beta=-0.264$, $p<0.05$), and in turn, perceived non-tax opportunity decreases tax compliance ($\beta=-0.473$, $p<0.05$). On the other hand, tax knowledge significantly decreases felt tax loss ($\beta=-0.284$, $p<0.05$), and in turn, felt tax loss decreases tax compliance ($\beta=-0.326$, $p<0.05$). Since there is no significant direct effect of tax knowledge on tax compliance, both perceived non-tax opportunity and felt tax loss may play the role of full mediators that create and establish the indirect relationship with tax compliance.

Table 8.
Indirect effects of perceived non-tax opportunity and felt tax loss.

Relationship	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (O/STDEV)	P -values
H ₄ : TKN -> TOF -> TRQ	0.125	0.129	0.038	3.265	0.001
H ₅ : TKN -> TLF -> TRQ	0.093	0.097	0.033	2.826	0.005
H ₆ : TKN -> TOF ->TLF ->TRQ	0.217	0.226	0.038	5.795	0.000

Table 8 shows the indirect effects (mediating effects) of perceived non-tax opportunity ($\beta=0.125$) and felt tax loss ($\beta=0.093$) are slightly significant ($p<0.05$). The total indirect effect or parallel mediating effect for the relationship between tax knowledge and tax compliance is $\beta= 0.217$ and is significant ($p <0.05$). The output shows the parallel mediating effect is the medium effect sizes [48]. The two mediators, i.e., perceived non-tax opportunity and felt tax loss, create an indirect relationship between tax knowledge and tax compliance. Without the two mediators, there is no relationship between tax knowledge and tax compliance. Thus, perceived non-tax opportunity and felt tax loss are full mediators. The output (Table 7) indicates that there are medium effects on the perceived non-tax opportunity-tax compliance path ($f^2 =0.182$) and a negligible effect on the remaining paths.

In the final parallel mediation model, the two mediators, perceived non-tax opportunity and felt tax loss, contribute 58% of the variance in tax compliance ($R^2 = 0.580$).

Finally, the output of the Q2 predict analysis showed that the Q2 predict values for the three dependent variables in the final model were positive (Q2 Predict: perceived non-tax opportunity=0.057; felt tax loss=0.069; tax compliance=0.067), indicating that the final model possessed sufficient predictive power. This means that the final mediation model can be used to predict the full parallel mediating effect of perceived non-tax opportunity and felt tax loss on the relationship between tax knowledge and tax compliance among the SME in Vietnam.

5.4. Discussion

The results of the analysis provide empirical evidence that tax compliance is dependent on two factors: perceived non-tax opportunity and felt tax loss. Perceived non-tax opportunity and felt tax loss have opposite effects on tax compliance. Tax knowledge has an impact on tax compliance through two fully mediating factors—perceived non-tax opportunity and felt tax losses. Additionally, tax knowledge has a positive impact on tax compliance. Perceived non-tax opportunity and felt tax loss depend on the taxpayer's understanding and awareness of tax. When the taxpayer's knowledge and tax awareness increase, their decision to take advantage of opportunities or the feeling of loss associated with deciding not to comply with taxes will decrease. This implies that SME owners with more knowledge and awareness about taxes will have higher compliance with tax laws, which is consistent with the findings in the studies of Kasipillai, et al. [37]; Olsen, et al. [38] and Kamleitner, et al. [31]. However, this is contrary to the research of Bird and Zolt [39] and Fauziati, et al. [40]. On the other hand, the higher the chance of non-tax compliance and the greater the perceived felt tax loss, the lower the tax compliance level of SME. This result is consistent with the research results of Marandu, et al. [45]; Gërxhani and Schram [49]; Kamleitner, et al. [31]; Casal, et al. [50]; Alm [4]; Bornman and Ramutumbu [32] and Alm, et al. [51]. Furthermore, tax knowledge negatively impacts perceived non-tax opportunity and felt tax loss. This result suggests that the higher the tax knowledge, the lower the taxpayer's intention to not comply with taxes due to the greater perceived losses if detected and punished.

Tax knowledge includes three general knowledge components, tax law knowledge, and tax procedure knowledge, which are measured using seven scales (Table 5). The survey results show that SME owners have good knowledge and awareness of taxes, with an average score of 3.27 (Table 4). Among these, the highest level is knowledge of when to

declare and pay taxes and the type of tax payable (i.e., knowledge of tax procedures). This is followed by knowing the amount of tax payable annually, the possibility of tax audits, and total awareness, adequate tax policies (i.e., tax law knowledge), awareness of tax evasion penalties, and adequacy of tax policies and laws (i.e., general knowledge). These results indicate that SME owners have detailed to general tax knowledge, with a fairly complete understanding and awareness but the level of tax law violations by this group of subjects remains high. Therefore, tax knowledge acts as a moderator rather than an independent variable in the relationship with tax compliance. This helps to explain the variations in findings regarding the impact of tax knowledge on tax compliance across studies.

Perceived non-tax opportunity offers three opportunities—tax knowledge, awareness of benefits from non-compliance, and the possibility of detection—which are measured using five scales (Table 5). The survey showed that respondents perceive the opportunity for non-tax compliance to be relatively high (with an average score of 3.48 - Table 4). In particular, the surveyor, who is a SME owner, realized that tax fraud can be hidden. Furthermore, tax evasion is easy and the possibility of being caught is low. This is consistent with the findings of [Marandu, et al. \[45\]](#) and [Kamleitner, et al. \[31\]](#) who found that SMEs are less likely to be subject to tax audits due to their small size. Moreover, SMEs require more conditions to evade taxes than large enterprises. The survey results support the view that taxpayers who have the opportunity to evade taxes because they are aware of their advantages will decide not to comply with taxes. The level of non-tax compliance will increase if triggered by personal motivation, i.e., when SMEs perceive that tax fraud can be easily committed and concealed with a low probability of detection, and by social motive, i.e., when SME owners feel less guilty when tax fraud is not strictly handled by tax authorities. This implies that social factors also influence the individual motivations of SME taxpayers. Therefore, tax fairness recognized from the strict implementation of tax laws by tax authorities is essential to creating a healthy, competitive environment for businesses.

Felt tax loss is made up of three components—taxpayers' general attitudes, attitudes towards fairness issues, and the tax burden—which are measured using four scales (Table 5). According to survey respondents, the highest loss was perceived when compared to tax knowledge and perceived non-tax opportunity (with an average score of 3.58 – Table 4). Specifically, SME owner feels the loss of having to pay taxes and not receiving more tax deductions. They express disappointment when they have to pay more taxes or receive tax refunds that are less than expected. When SME experience a decrease in income due to paying taxes, they tend to pay closer attention to preparing tax finalization reports to minimize the amount of tax payable, even if they have to violate tax laws to reduce the loss. The survey results show that SME owners choose non-tax compliance decisions based on the perception of loss being greater than the benefit. To minimize losses, they are willing to accept risks, so that the level of non-tax compliance increases. This finding supports the view of [Alm \[4\]](#) and [Kamleitner, et al. \[31\]](#) which indicates that, SME will feel greater losses for fines for non-tax compliance because the value of fines accounts for a larger proportion of the losses.

6. Conclusion and Policy Implications

This study analyzes how tax knowledge, perceived non-tax opportunity and felt tax loss affect tax compliance behavior through tax declaration quality.

Regarding the first research question (RQ1) — "How does tax knowledge influence the tax compliance decisions of SME in Vietnam, through their perceptions of tax non-compliance opportunities and the level of felt tax losses when complying with tax laws?". The analysis reveals that tax knowledge exerts a negative effect on the perception of non-tax compliance opportunities, which subsequently results in decreased tax compliance. Likewise, tax knowledge negatively influences feelings of tax loss, which also adversely impacts tax compliance. Importantly, no significant direct effect of tax knowledge on tax compliance was identified. The findings indicate that SME owners in Vietnam possess a strong understanding of tax regulations; however, their tax compliance remains low, primarily due to their awareness of various tax evasion opportunities. Additionally, the perception of higher-than-expected losses further incentivizes tax fraud. This study also evaluates tax compliance through the quality of tax declarations, providing empirical evidence that the impact of tax knowledge on compliance levels is contingent upon the taxpayer's perception of non-compliance opportunities and perceived losses.

Regarding the second research question (RQ2) — "Perceived non-tax opportunity and felt tax loss have mediating effects on the relationship between tax knowledge and tax compliance among SME in Vietnam?". The analysis indicates that perceived non-tax compliance opportunities and felt tax loss function as full mediators in this relationship. Specifically, in the absence of these two mediators, no direct relationship between tax knowledge and tax compliance is evident. Consequently, it can be concluded that perceived non-tax compliance opportunities and felt tax loss are indeed full mediators within this context. This study demonstrates that tax knowledge is crucial for taxpayers to identify potential opportunities for both tax compliance and non-compliance, as well as the economic implications associated with these decisions. Moreover, the perception of loss serves to incentivize taxpayers to engage in non-tax compliance, while the awareness of non-tax compliance opportunities aids them in assessing their level of non-compliance.

The study also contributes to the tax compliance theory by clarifying the mixed results of the influence of tax knowledge on the tax compliance behavior of SME. The study shows that tax knowledge is a prerequisite for taxpayers to recognize opportunities for tax compliance or non-compliance. Without the two mediators (perceived non-tax opportunity and felt tax loss), there is not directly relationship between tax knowledge and tax compliance. The study also adds to the evidence in support of the view that tax compliance behavior depends on both personal (i.e., economic) and social motivations. The tax compliance measurement model is based on three factors—tax knowledge, perceived non-tax opportunity and felt tax loss—and can help explain why SME owners choose not to comply with taxes. This helps to explain the variations in findings regarding the impact of tax knowledge on tax compliance across studies.

To minimize this behavior, this study proposes two policy implications. Firstly, it is imperative that the government develops comprehensive training and awareness programs that are targeted specifically at taxpayers, particularly SME. These programs should encompass workshops and seminars focused on enhancing tax knowledge, social responsibilities, and taxpayer ethics.

Secondly, the research proposes a strategic shift in the management approach of tax authorities towards SME. This should involve reorienting communication strategies to position taxpayers as partners rather than mere subjects of enforcement.

7. Limitations of the Study

The study focuses on SMEs in Vietnam and is based on an analysis of 326 responses, which meets the minimum required sample size. However, it's important to note that 326 responses may be considered a small sample size compared to the entire population of SME in Vietnam. Therefore, future researchers should consider using a larger sample size to ensure more accurate results.

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