

# The Effect of Tax Modernization, Tax Rates, and Tax Sanctions on MSME Taxpayer Compliance in the Medan Area District

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Determining the effect of tax modernization, tax rate, and tax sanction on taxpayer's compliance became the aim of this study by utilizing quantitative approach as its research method. This study utilize primary data that had been gathered through the distribution of questionnaires to taxpayers who were Micro, Small, and Medium Enterprise (MSME) owners in the Medan Area sub-district. Non-Probability Sampling with an Accidental Sampling approach was used as the sampling technique in this study, with a sample size of 100 from the population of 7.263 MSME owners. Multiple Linear Regression Analysis is used as its analysis technique, executed in the SPSS 26 software. The analysis results found the tax modernization, tax rate, and tax sanctions to have had a positive and significant effect, both simultaneously and partially, on the MSME taxpayer's compliance in the Medan Area sub-district.

**Keywords:** tax modernization, tax rate, tax sanction, tax compliance

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## 1. Introduction

As one of the main sources of state revenue, taxation is implemented with the objective of funding government routine expenditures for fiscal needs, supporting national development efforts, and carrying out the government's regulatory functions in social and economic sectors (Indawati et al., 2024). The important role of this public contribution makes it crucial to be continuously improved for the sustainability of the state. The realization of tax revenue can serve as an indicator of taxpayer compliance. The following is a summary of tax revenue realization and annual targets over the last five years based on information available on the website of the Directorate General of Taxes (DJP):

**Table 1.** Realization of Tax Revenue 2020–2024

Year	Annual (trillion IDR)	Target	Realization (trillion IDR)	Target Achievement (%)	YoY Growth (%)
2020	Rp1,198.8		Rp1,072.11	89.4%	-19.6%
2021	Rp1,229.6		Rp1,278.63	104.0%	19.3%
2022	Rp1,485.1		Rp1,716.77	115.6%	34.3%
2023	Rp1,818.3		Rp1,869.23	102.8%	8.9%
2024	Rp1,988.9		Rp1,932.4	97.2%	3.5%

Source: (pajak.go.id, 2025)

Based on the information presented in Table 1, tax revenue in 2020 recorded realization that only reached 89.4% of the target of IDR 1,198.9 trillion, as a result of the global economic downturn caused by the COVID-19 pandemic. The subsequent economic recovery showed optimistic results, as the 2021–2023 realization achieved the target for three consecutive years. This condition of national tax compliance should be

maintained. However, in 2024, a slight shortfall occurred where the realization only reached 97.2% of the target of IDR 1,988.9 trillion.

This unstable growth trend indicates that although tax revenue is increasing, there are still obstacles in equalizing taxpayer compliance across sectors, especially sectors with high informality levels that are still affected by global economic recovery, such as MSMEs. In May 2025, the MSME sector reached 64.2 million units, contributing IDR 8,573.89 trillion or 61.07% to the Gross Domestic Product (GDP), with around 117 million workers, equivalent to 97% of total employment absorption (djpb.kemenkeu.go.id, 2025). MSMEs are potential taxpayers given their large number, as also reflected in the growth of MSMEs in Medan City. However, this large contribution has not yet been reflected in optimal tax revenue.

Indonesia still has a tax gap of around 6–9% of GDP, which indicates that the informal sector has not been fully reached and non-compliance results in potential tax losses of approximately IDR 1,300 trillion annually (Tamba, 2025). In general, MSME taxpayer compliance is still considered low, as their contribution to GDP is not proportional to their contribution to state revenue, where MSME contributions to total tax revenue are only around 0.5%, which could still be optimized further (Zulma, 2020). This is supported by research by (Situmorang, 2025), which states that around 45% of MSME actors in Indonesia admit they do not pay taxes regularly, while 25% are still confused and uncertain about their tax obligations.

To improve state tax revenue, which is directly influenced by taxpayer compliance, the Directorate General of Taxes (DJP) has implemented tax administration modernization by providing more efficient and accessible tax services through information technology (e-Filing, e-Billing, etc.). This serves as an incentive for convenience and transparency alongside the transition from an Official Assessment System to a Self-Assessment System, which relies on voluntary compliance. Tax obligations can be simplified through reduced administrative complexity resulting from such improvements. Especially for MSMEs, considering the diversity of taxpayers in terms of education, income, and awareness levels, the tax system is expected to be simplified as much as possible (Rahman, 2024).

There has also been a reduction in the Final Income Tax (PPH Final) rate for MSME actors, from 1% to 0.5% based on Government Regulation (PP) No. 23 of 2018. The tax rate is the basis used to determine the tax burden imposed on a tax object (Safarti, 2021). Therefore, the reduction in tax rates can create a perception of reduced tax burden for taxpayers. After the policy was implemented, an increase in the number of MSME taxpayers can be observed, although the reduction in rates also decreased nominal tax revenue (Nurhidayah, 2021). Such tax relief is considered to facilitate MSME taxpayer compliance.

Failure to comply with tax regulations will result in consequences for taxpayers. Tax sanctions are the intended consequences, which may take the form of administrative penalties such as fines or even criminal sanctions (Putra, 2020). The existence of sanctions can discourage taxpayers from violating tax regulations to avoid punishment, thereby potentially improving compliance.

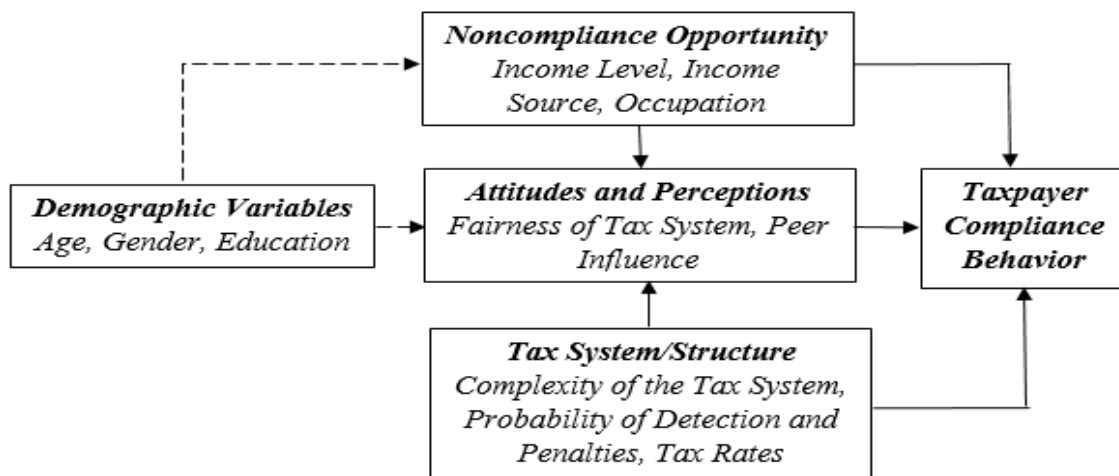
Several previous studies show a research gap regarding the influence of tax rates, tax modernization, and tax sanctions on taxpayer compliance. Research by (Putra, 2020) found that tax modernization has a significant positive effect on taxpayer compliance, while research by (Madurano & Umaimah, 2023) found that tax modernization has no significant effect on taxpayer compliance. In research by (Wijaya & Yanti, 2023), tax rates were found to significantly and positively affect taxpayer compliance. However, (Zulma, 2020) found that tax rates do not partially affect taxpayer compliance. Furthermore, (Kurnia et al., 2023) found that tax sanctions have a significant positive effect on taxpayer compliance, while (Adikara & Rahayu, 2022) found that tax sanctions do not affect taxpayer compliance. These studies indicate that tax rates, tax modernization, and tax sanctions are related to taxpayer compliance, but not always consistently.

The low level of MSME taxpayer compliance shows that factors such as tax modernization, tax rates, and tax sanctions need further investigation. Therefore, this study aims to examine the effect of tax modernization, tax rates, and tax sanctions on MSME taxpayer compliance in Medan Area District, both partially and simultaneously. The results are expected to provide additional input for the government in MSME taxation policies as well as serve as a reference for future research on similar topics.

## 2. Literature Review

### Fischer Model of Tax Compliance

The Fischer Model of Tax Compliance is a behavioral model that explains tax compliance behavior, developed by Fischer, Wartick, and Mark in 1992. This model was based on 14 key factors related to tax compliance previously identified by Jackson and Milliron in 1986 (Chau & Leung, 2009). These key factors are grouped into four main categories: demographic variables, opportunities for tax non-compliance, attitudes and perceptions, and the tax system/structure. This model integrates social, economic, and psychological conditions into a unified framework, explaining that taxpayer compliance behavior is influenced not only by external factors such as the structure of the tax system, but also by internal factors such as individual characteristics.



Source: Fischer et al. (1992) in research by (Chau & Leung, 2009)

Figure 1. Fischer Model of Tax Compliance

### Relationship Between Variables and Hypothesis Statements

#### Tax Modernization and Taxpayer Compliance

The cultural shift in tax collection is part of tax modernization, where responsibility is increasingly entrusted to taxpayers to fulfill their own tax obligations. This condition can foster a sense of control and responsibility within taxpayers, leading them to comply based on moral considerations. However, this system heavily depends on voluntary tax compliance, which is not always ensured solely through morality and ethics. The introduction of technology-based systems is the next step, aiming to facilitate taxpayers in fulfilling their obligations through online tax services (Sulistiyanti & Fakhrunnisa, 2023).

This serves as an incentive in the form of convenience, which aligns with the Tax System/Structure dimension in the Fischer Model of Tax Compliance, emphasizing tax system complexity. Given the diverse backgrounds of MSME taxpayers, tax compliance can be improved through a simpler and more practical tax system. Research by (Putra, 2020) found that tax modernization has a significant positive effect on taxpayer

compliance. However, (Madurano & Umaimah, 2023) found no significant effect due to the lack of utilization of digital tax services by taxpayers. Therefore, the hypothesis is proposed:

H1: Tax modernization has a significant partial effect on MSME taxpayer compliance.

### **Tax Rates and Taxpayer Compliance**

The amount of tax liability borne by individuals or entities is determined by the tax rate, which also serves as an instrument of fairness in tax determination (Susanti et al., 2025). The reduction of tax rates eases the tax burden on MSMEs, thereby supporting compliance, as this group is highly sensitive to costs relative to their income levels.

This relates to the Tax System/Structure dimension in the Fischer Model of Tax Compliance, where taxpayer compliance is encouraged when tax rates are perceived as fair and aligned with taxpayers' economic capacity. Research by (Wijaya & Yanti, 2023) shows that tax rates have a significant positive effect on taxpayer compliance. However, (Zulma, 2020) found that taxpayer compliance is not affected by tax rates due to unstable economic conditions during the study period. Therefore, the hypothesis is proposed:

H2: Tax rates have a significant partial effect on MSME taxpayer compliance.

### **Tax Sanctions and Taxpayer Compliance**

Tax sanctions are preventive instruments designed to ensure compliance with tax laws and regulations as stated in the tax law system (Mardiasmo, 2023). Tax sanctions represent the Probability of Detection and Penalties component in the Fischer Model of Tax Compliance, where taxpayer compliance is driven by the desire to avoid sanctions, based on the perception that penalties are deterrent and supported by strict enforcement mechanisms.

Research by (Adikara & Rahayu, 2022) found no effect of tax sanctions on taxpayer compliance due to low taxpayer perception of sanctions. However, (Kurnia et al., 2023) found contrasting results, stating that tax sanctions have a significant positive effect on taxpayer compliance by minimizing violations. Therefore, the hypothesis is proposed:

H3: Tax sanctions have a significant partial effect on MSME taxpayer compliance.

### **Tax Modernization, Tax Rates, and Tax Sanctions on Taxpayer Compliance**

Referring to the Fischer Model of Tax Compliance, taxpayer compliance is formed through the interaction between internal factors of taxpayers and external factors such as tax policies and administration. Taxpayer perceptions based on personal characteristics toward tax modernization, tax rates, and tax sanctions classified as external structural factors contribute to compliance levels.

The effectiveness of technology utilization in tax modernization is expected to increase taxpayers' willingness to comply (Asweril, 2022). Likewise, the reduction of tax rates to 0.5% is expected to ease the burden on MSMEs (Rahman, 2024), and when combined with strict tax sanctions, it can strengthen taxpayers' compliance intentions (Vidyarto Nugroho, 2021). Therefore, the hypothesis is proposed:

H4: Tax modernization, tax rates, and tax sanctions simultaneously have a significant effect on MSME taxpayer compliance.

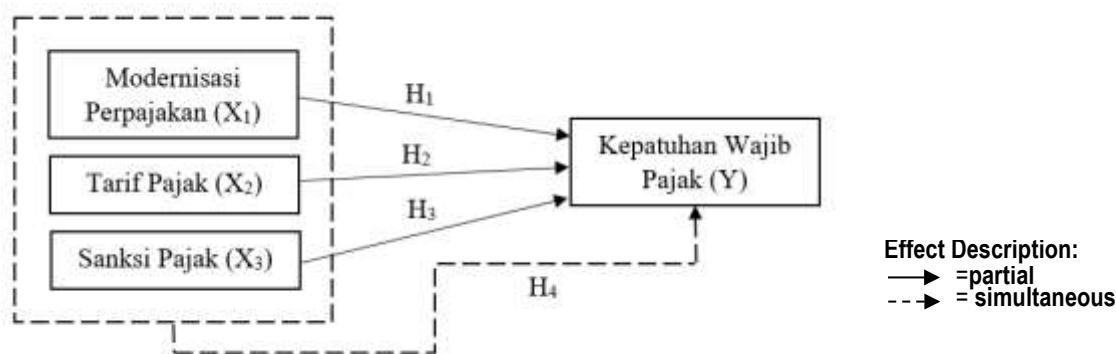


Figure 2. Research Conceptual Framework

### Research Methodology

A quantitative approach with a causality research design is employed in this study to examine the effect of the independent variables, namely tax modernization, tax rates, and tax sanctions, on the dependent variable, namely taxpayer compliance.

Tax modernization is a process aimed at improving efficiency and effectiveness by transforming all traditional aspects of the tax system into new procedures that enhance administrative performance for both individuals and institutions (Supratiwi, 2023). Its indicators include: the shift of responsibility based on trust in taxpayers, understanding of the tax system, the use of information and communication technology, ease of use and simplicity of understanding, and taxpayers receiving various benefits.

Tax rates refer to the basis of the tax burden that must be paid by taxpayers in the form of a percentage imposed on taxable objects (Ainiyyah, 2025). The indicators include: understanding of tax rates, reduced tax rates motivating tax payment, tax rates being aligned with taxpayers' ability, and tax rates not being the sole determinant of taxpayer awareness of obligations. Tax sanctions are imposed on taxpayers when they fail to fulfill their tax obligations (Asweril, 2022). The indicators include: understanding of tax sanctions, level of enforcement of tax sanctions, taxpayers' attitudes toward tax sanctions, and the existence of tax sanctions improving tax compliance.

Taxpayer compliance is defined as the condition in which taxpayers fulfill their obligations in accordance with tax regulations. Compliance and awareness are key components of taxpayer compliance (Ariva, 2021). The indicators include: possession of a Taxpayer Identification Number (NPWP), timely submission of Tax Returns (SPT) and payments, and proper calculation of tax payable and underpayment in accordance with applicable regulations.

The population in this study consists of MSME actors in the Medan Area District, totaling 7,263 individuals based on data from the Central Statistics Agency (BPS) of Medan City. The sample size is determined using the Slovin formula, resulting in 100 MSME actors as respondents. A non-probability sampling technique with an accidental sampling approach is applied, with strict selection criteria, namely MSME actors who are actively running real businesses in the Medan Area District. Data is collected using primary data through questionnaires distributed via Google Forms. Multiple linear regression analysis is used as the analytical technique in this study, processed using SPSS version 26. The multiple linear regression equation is formulated as follows:

$$\text{Tax Compliance} = a + b_1(\text{Tax Modernization}) + b_2(\text{Tax Rate}) + b_3(\text{Tax Sanctions}) + e$$

### 3. Research Results

#### Validity and Reliability Test

The calculated r-value for each questionnaire item served as a reference for the validity test, where the values obtained in this study were greater than the r-table value of 0.1966, indicating that the research instrument is suitable for use. The Cronbach’s Alpha value served as a reference for the reliability test, where the values obtained for each variable in this study were greater than 0.60, implying that the construct is reliable in fulfilling its role.

#### Normality Test

The results of the normality test based on the Kolmogorov–Smirnov statistical test lead to the conclusion that the obtained Asymp. Sig. (2-tailed) value of 0.200, which is above 0.05, indicates that the data distribution in the regression model of this study is normal.

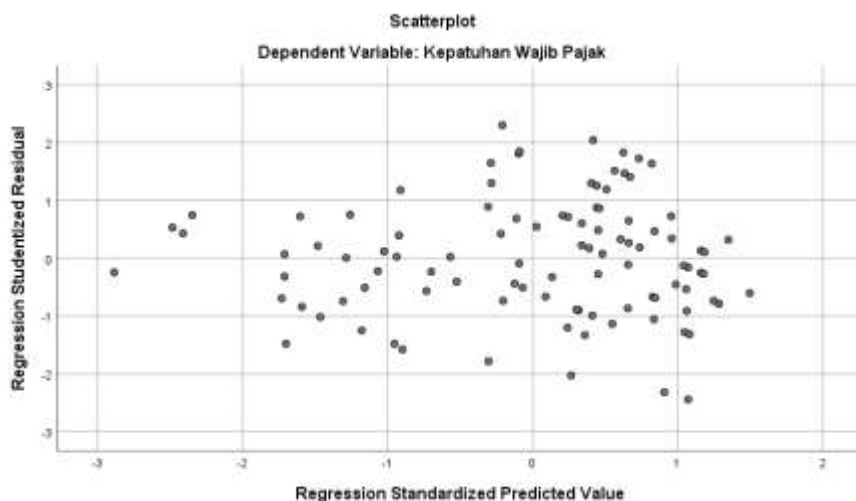
#### Multicollinearity Test

**Table 3. Multicollinearity Test Results**

Variable	Tolerance	VIF	Description
Tax Administration Modernization (X <sub>1</sub> )	0.363	2.755	No multicollinearity detected
Tax Rate (X <sub>2</sub> )	0.445	2.247	No multicollinearity detected
Tax Sanctions (X <sub>3</sub> )	0.565	1.770	No multicollinearity detected

The results of the multicollinearity test based on the information in Table 3 show that the Tolerance values for each variable are greater than 0.10 (> 0.10), with Variance Inflation Factor (VIF) values less than 10 (< 10). Therefore, the regression model in this study can be considered free from multicollinearity problems.

#### Heteroscedasticity Test



Source: Processed data using SPSS 26

**Figure 3.** Heteroscedasticity Test Results

The results of the heteroscedasticity test are based on observations of the scatterplot diagram presented in Figure 3. The pattern of the plotted points shows a random distribution without forming any specific pattern, and the points are spread around the zero line on the vertical axis. This indicates that the regression model in this study is free from heteroscedasticity problems.

**t-test (Partial)**

**Table 4.** t-Test Results

Variable	Unstandardized Coefficients (B)	Std. Error	t	Sig.	Description
Constant	3.256	2.112	1.541	0.127	-
Tax Administration Modernization (X <sub>1</sub> )	0.292	0.114	2.570	0.012	H <sub>1</sub> accepted
Tax Rate (X <sub>2</sub> )	0.309	0.114	2.702	0.008	H <sub>2</sub> accepted
Tax Sanctions (X <sub>3</sub> )	0.266	0.106	2.504	0.014	H <sub>3</sub> accepted

**Partial Test (t-test)**

The results of the partial test in Table 4 show a significance value of 0.012, which is less than 0.05 (< 0.05). This indicates that Tax Modernization has a significant positive effect on Taxpayer Compliance, based on the Unstandardized Coefficient B value of 0.292; therefore, H1 is accepted. A significance value of 0.008 (< 0.05) along with an Unstandardized Coefficient B value of 0.309 indicates that Tax Rates have a positive and significant effect on Taxpayer Compliance; therefore, H2 is accepted. The significance value of 0.014 (< 0.05), together with an Unstandardized Coefficient B value of 0.266, shows a significant and positive effect of Tax Sanctions on Taxpayer Compliance; therefore, H3 is accepted.

**F Test (Simultaneous)**

The results of the F test based on the ANOVA significance value show a value of 0.000 (< 0.05). This indicates that Tax Modernization, Tax Rates, and Tax Sanctions simultaneously have a significant effect on Taxpayer Compliance; therefore, H4 is accepted.

**Coefficient of Determination (R<sup>2</sup>)**

The Adjusted R Square value of 0.506 indicates that Tax Modernization, Tax Rates, and Tax Sanctions collectively explain 50.6% of the variation in Taxpayer Compliance. Meanwhile, the remaining 49.4% is influenced by variables outside this study.

**Discussion**

**The Effect of Tax Modernization on Taxpayer Compliance**

H1 proposing that tax modernization has a significant partial effect on Taxpayer Compliance is accepted based on the t-test results. This is in line with the Fischer Model of Tax Compliance, which explains that perceptions related to individual characteristics of the tax system influence taxpayer compliance. It can be concluded that in the tax administration environment, where taxpayers hold most of the responsibility, the facilitation of ease and other benefits from the implementation of tax modernization technology not only improves efficiency but also accessibility, which can reduce administrative burdens (time and complexity faced), including for MSMEs with diverse backgrounds and experiences, thereby encouraging taxpayer compliance.

These findings are consistent with previous studies (Putra, 2020; Subagijo, 2023), which state that tax modernization has a positive and significant impact on taxpayer compliance. However, contrasting results were found in the study by (Madurano & Umaimah, 2023), which reported that taxpayer compliance was not affected by tax modernization due to the minimal use of digital tax services by taxpayers.

### **The Effect of Tax Rates on Taxpayer Compliance**

H2 proposing that tax rates have a significant partial effect on Taxpayer Compliance is accepted based on the t-test results. This aligns with the Fischer Model of Tax Compliance, which explains that perceptions arising from taxpayers' economic backgrounds influence taxpayer compliance. It can be concluded that lower tax rates perceived as fair and in accordance with taxpayers' economic ability reduce the tax burden, enabling taxpayers to pay their taxes more easily, thereby increasing compliance, especially among MSMEs, which are more sensitive to costs.

Similar supporting findings were reported by (Hapsari & Kholis, 2020; Wijaya & Yanti, 2023), which show that tax rates have a significant positive effect on taxpayer compliance. In contrast, (Zulma, 2020) found that tax compliance was not affected by tax rates due to abnormal economic conditions during the pre-COVID-19 pandemic period.

### **The Effect of Tax Sanctions on Taxpayer Compliance**

H3 proposing that tax sanctions have a significant partial effect on Taxpayer Compliance is accepted based on the t-test results. This is consistent with the Fischer Model of Tax Compliance, which explains that taxpayers' perceptions based on internal psychological factors regarding the severity of consequences influence compliance behavior.

It can be concluded that taxpayer compliance can be maintained through the implementation of tax sanctions as a preventive measure against violations of tax regulations. Tax compliance is formed as an effort by taxpayers, including MSMEs, to avoid consequences in the form of strict and deterrent penalties. This is supported by studies (Kurnia et al., 2023; Safarti, 2021), which found that tax sanctions have a positive and significant effect on taxpayer compliance. However, (Adikara & Rahayu, 2022) found that tax sanctions were not statistically significant due to taxpayers' low perception of the strictness of such sanctions.

### **The Effect of Tax Modernization, Tax Rates, and Tax Sanctions on Taxpayer Compliance**

H4 proposing that tax modernization, tax rates, and tax sanctions simultaneously have a significant effect on Taxpayer Compliance is accepted based on the F-test results. This is consistent with the Fischer Model of Tax Compliance, which explains how the interaction between external factors (tax policies and administration) and internal factors (perceptions and taxpayer characteristics) influences taxpayer compliance.

The external factors in this case include tax modernization, tax rates, and tax sanctions. When these structural factors are perceived by taxpayers as competent and fair in their implementation such as providing accessible practical benefits and imposing deterrent penalties for violations they encourage taxpayer compliance as a response to the existing tax system.

## **4. Conclusions**

The conclusions based on the results of this study are as follows: Tax Modernization has a positive and significant partial effect on Taxpayer Compliance, Tax Rates have a positive and significant partial effect on Taxpayer Compliance, and Tax Sanctions also have a positive and significant partial effect on Taxpayer Compliance. Furthermore, the three variables Tax Modernization, Tax Rates, and Tax Sanctions simultaneously have a significant effect on Taxpayer Compliance. This study is limited in terms of its sample coverage, which only includes MSMEs operating in the Medan Area District, as well as the use of a quantitative approach that has not been fully able to explore taxpayer behavior in depth. Therefore, future research is suggested to expand the sample coverage and apply a qualitative research method in order to obtain a more comprehensive understanding of taxpayer compliance.



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