The Effect of Tax Socialization, Tax Understanding, and Tax Sanctions on Taxpayer Compliance With Tax Awareness as a Moderating Variable: Evidence From Individual Taxpayers at Medan Polonia Tax Office

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Abstract. This study aims to examine the influence of tax socialization, tax understanding, and tax sanctions on taxpayer compliance, with tax awareness as a moderating variable. The research is motivated by the importance of improving tax revenue, which heavily depends on taxpayer compliance. A quantitative approach was applied by distributing questionnaires to 300 individual taxpayers registered at the Medan Polonia Tax Office. Data were analyzed using Partial Least Square–Structural Equation Modeling (PLS-SEM). The findings indicate that tax socialization, tax understanding, and tax sanctions positively and significantly affect taxpayer compliance. Furthermore, tax awareness successfully mediates the effect of tax socialization and tax sanctions on compliance but does not mediate the effect of tax understanding. These results highlight the critical role of taxpayer awareness in strengthening compliance behavior. The study provides practical implications for tax authorities to enhance socialization strategies, ensure fair sanction enforcement, and foster tax awareness as a key factor in achieving higher taxpayer compliance in Indonesia.

Keywords: Tax Socialization, Tax Understanding, Tax Sanctions, Tax Awareness, Taxpayer Compliance

1 Introduction

Tax revenue serves as the primary source of national income, used to finance state development and public services. In Indonesia, despite an increase in tax collection, taxpayer compliance remains relatively low. For instance, the Directorate General of Taxes (DGT) reported that the formal compliance ratio in 2023 was only about 84% of taxpayers who were required to submit annual tax returns. This indicates significant room for improvement.

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Table 1. Degree of Taxpayer Compliance at Medan Polonia Tax Office (2021–2025)

No	Year	Number of Taxpayers		Level of Compliance (%)	
		Registered	Submitted Returns	Compliance	Non-Compliance
1	2021	19,237	11,546	77	23
2	2022	21,220	17,451	62	38
3	2023	24,381	18,653	57	43
4	2025	28,145	21,459	57	43
	Total / Average	92,983	69,109	63.25	36.75

Source: Medan Polonia Tax Office (2025).

At the Medan Polonia Tax Office, compliance among individual taxpayers has shown a declining trend. Although the number of registered taxpayers increased, the percentage of compliance dropped from 77% in 2021 to 57% in 2025. Qualitative observations also revealed several issues: limited socialization of tax regulations, difficulties in using online tax applications, and less responsive tax officers. These issues undermine taxpayers' willingness to comply with tax regulations. Previous studies have identified several factors influencing compliance, such as tax socialization, tax knowledge, sanctions, and taxpayer awareness. However, empirical evidence regarding the mediating role of tax awareness remains inconclusive. Some studies report a significant mediating effect, while others do not. This research, therefore, focuses on examining whether tax awareness strengthens the relationship between tax socialization, tax understanding, tax sanctions, and taxpayer compliance.

2 Literature Review

2.1 Tax Socialization

Tax socialization is an effort by the Directorate General of Taxes to provide understanding, information, and guidance to taxpayers. It aims to improve taxpayers' awareness, knowledge, and compliance by helping them understand their rights, obligations, and tax procedures. According to [1], tax socialization increases taxpayer awareness, while [2] describe it as the dissemination of relevant tax information by authorities. [3] carries out tax socialization through seminars, counseling, consultations, and media publications to enhance understanding of tax rules and compliance benefits. [4] and [5] view it as an educational effort to build awareness and improve knowledge through accessible information. In conclusion, tax socialization is a systematic and strategic effort by tax authorities to educate and motivate taxpayers, encouraging voluntary compliance and strengthening tax awareness.

2.2 Tax Understanding

Tax understanding refers to taxpayers' awareness and knowledge of tax regulations, including their rights, obligations, and related procedures. It plays a crucial role in improving compliance, as greater knowledge and effective socialization motivate taxpayers to meet their obligations. According to [4], it reflects taxpayers' cognitive awareness that affects compliance behavior, while [5] notes that it develops through education, socialization, experience, and consultation. In essence, tax understanding is not only theoretical knowledge but also the practical ability to apply tax rules correctly.

2.3 Tax Sanctions

Tax sanctions are legal measures designed to prevent tax violations and create a deterrent effect. They can be administrative or criminal penalties imposed when taxpayers fail to meet their legal obligations. According to the [3], these include fines, interest, and penalties for late payments or incorrect reporting. Sanctions serve not only as punishment but also as preventive, controlling, and educational tools that promote discipline and tax awareness. Therefore, tax sanctions function as both a deterrent and a motivation to improve taxpayer compliance.

2.4 Tax Awareness

Tax awareness refers to the internal motivation or good faith of taxpayers to fulfill their tax obligations accurately, voluntarily, and on time. It is not merely based on fear of sanctions but also on an understanding of the importance of taxes for national development and public welfare [3,6]. Tax awareness is shaped by knowledge, ethics, morality, education, socialization, and experience [4, 5]. Therefore, tax awareness goes beyond formal compliance and reflects active participation in supporting national development.

2.5 Taxpayer Compliance

Tax compliance is a condition in which taxpayers exercise their rights and fulfill their tax obligations in accordance with prevailing regulations. It reflects taxpayers' responsibility to the state by contributing to national revenue, which is utilized for development and public services [3, 7]. The level of compliance is influenced by internal factors, such as tax knowledge and awareness, as well as external factors, including socialization, supervision, and tax sanctions [4, 5]. Therefore, tax compliance is not merely a formal obligation but also an expression of taxpayer awareness and responsibility toward the state.

3 Method

This research was conducted at the Medan Polonia Primary Tax Office (Kantor Pajak Pratama Medan Polonia), located at Jalan Sukamulia No. 17.A, Medan. Population, Sample, and Data . Determination Technique The population in this study consists of individual taxpayers registered at the Medan Polonia Primary

Tax Office. The sample is a part of the population that serves as the respondents of this study, namely individual taxpayers registered at the Medan Polonia Primary Tax Office. The sample was determined based on a quota of 300 respondents, specifically individual taxpayers registered at the Medan Polonia Primary Tax Office who were willing to complete the questionnaire prepared by the researcher. Research Design, this research is a quantitative study that uses a causal design. The causal design is structured to examine the possibility of cause-and-effect re- lationships between variables, which were essentially predicted by the researcher Data Sources and Data Collection Techniques

3.1 Data Sources

The data required in this study consist of the perceptions of individual taxpayers registered at the Medan Polonia Primary Tax Office, specifically their understanding in fulfilling tax obligations and the benefits of the taxes they have paid.

3.2 Data Collection Technique

To obtain the data, the researcher distributed questionnaires to individual taxpayers registered at the Medan Polonia Primary Tax Office who were willing to complete the instrument. The questionnaire was developed based on the research variable indicators. Before being used as the main data collection instrument, the questionnaire was tested for feasibility, and then distributed to all respondents for completion. The data collection process was carried out from May to July 2025.

3.3 Data Analysis Techniques

The data analysis technique used in this study is Structural Equation Modeling (SEM), which is a multivariate statistical analysis developed from regression and path analysis. Data analysis will be conducted using the SmartPLS application with the following steps:

1. **Outer Model Analysis**
   Outer model analysis aims to test validity and estimate the reliability of indicators and constructs. The tests performed in the outer model include:
   (a) **Convergent Validity**
   Convergent validity refers to the factor loading values between latent variables and their indicators. A factor loading > 0.7 is considered ideal, while a loading > 0.5 is still acceptable.
   (b) **Average Variance Extracted (AVE)**
   AVE is used to determine whether discriminant validity requirements are met. The minimum value to indicate reliability is achieved is 0.50.

(c) **Discriminant Validity**
Discriminant validity tests the extent to which a latent construct differs from other constructs. High discriminant validity indicates that a construct is unique and capable of explaining the measured phenomenon. A construct is considered valid if the square root of its AVE is greater than the correlations with other latent variables.

(d) **Unidimensionality**
The unidimensionality test ensures that there are no measurement problems. This test uses composite reliability and Cronbach's alpha, with a cut-off value of 0.7 for both indicators.

2. **Inner Model (Structural) Analysis**
(a) **Multicollinearity Analysis.** Multicollinearity testing ensures that independent variables (exogenous constructs) are not highly correlated, which could bias the model's predictive capability. Collinearity is indicated by the Variance Inflation Factor (VIF). A model is considered free from multicollinearity if VIF < 0.05.
(b) **Hypothesis Testing.** Hypothesis testing examines the effect of Tax Socialization, Tax Understanding, and Tax Sanctions on Tax Compliance, both directly and indirectly through the mediating variable Tax Awareness. Hypothesis testing is conducted using SmartPLS 4.

Table 2. Decision Criteria of Research Variables

Variable	Indicators
Tax Socialization	1. Educational Outreach 2. Engagement Discussions with Community Leaders 3. Direct Communication from Officers to Taxpayers 4. Billboard Deployment 5. Website Utilization
Tax Understanding	1. Tangible 2. Empathy 3. Responsiveness 4. Reliability 5. Assurance
Tax Sanctions	1. Sanctions as a Consequence 2. Imposition of Strict Sanctions 3. Sanctions as a Tool for Disciplinary Enforcement
Tax Awareness	1. Civic Awareness in Responding to Tax Responsibilities 2. Awareness of Compliance with Tax Obligations 3. Awareness of Honest Conduct in Fulfilling Tax Obligations 4. Awareness of Taxation Regulations
Tax Awareness and Tax Compliance	1. Awareness of Obtaining a Tax Identification Number (NPWP) 2. Avoiding Tax Arrears 3. Accurate Tax Calculation 4. Timely Tax Payment 5. Compliance with Tax Regulations / Avoiding Violations

Source: Processed Research Data, 2025.

– Path-value $< 0.05 \rightarrow H_0$ is rejected, indicating a significant effect of the exogenous variable on the endogenous variable.

  - Path-value $\geq 0.05 \rightarrow H_0$ is accepted, indicating no significant effect of the exogenous variable on the endogenous variable.

3. **Model Fit Analysis**
   Model fit testing assesses whether a model fits the data. Good fit analysis ensures that the research model has good predictive ability. The model fit tests in this study refer to R-Square and SMR (Standardized Root Mean Square Residual).
   (a) **R-Square**
   R-Square indicates the extent to which independent variables influence dependent variables. "R-squared (R^2) is used to assess the influence of independent latent variables on dependent latent variables." R-Square levels are as follows: Low effect = 0.19, Moderate = 0.33, and High = 0.66.
   (b) **SMR (Standardized Root Mean Square Residual)**
   SMR measures model fit by calculating the difference between the correlation matrix of the data and the estimated model correlation matrix. SRMR values between 0.08–0.10 indicate an acceptable model fit.
   Three indices are used in model fit testing: Average Path Coefficient (APC), Average R-Square (ARS), and Average Variance Inflation Factor (AVIF). APC and ARS are accepted if p-value < 0.05, and AVIF is acceptable if AVIF > 5.
   (c) **Coefficient of Determination ($\mathbf{R^2}$)**
   R^2 is used to determine the extent to which independent variables influence the dependent variable. R^2 values are interpreted as follows: 0.75 = strong, 0.50 = moderate, and 0.25 = weak.
   (d) **Effect Size**
   Effect size is used to assess the quality of the model. Suggested effect sizes are 0.02, 0.15, and 0.35, representing small, moderate, and large effects of exogenous latent variables at the structural level.

4 Results

The results of this study indicate that while the measurement model meets all validity and reliability criteria, the structural relationships among the variables show varying levels of significance. Tax socialization does not have a significant direct effect on taxpayer compliance, suggesting that existing socialization efforts have not yet translated into immediate behavioral change. Conversely, tax understanding demonstrates a positive and significant effect on compliance, although the magnitude of this influence remains modest. Tax sanctions likewise show no significant direct impact on compliance, implying that punitive measures alone may not motivate taxpayers consistently. However, when considering indirect effects, tax awareness plays a crucial mediating role. Tax socialization significantly increases compliance when mediated by awareness, indicating that socialization is effective primarily when it enhances taxpayers' internal motivation. Tax sanctions also display a strong indirect effect through awareness, highlighting that sanctions foster compliance by raising taxpayers' sense of responsibility rather than through direct fear of penalties. In contrast, tax understanding does not significantly influence compliance through awareness, meaning that knowledge alone does not automatically strengthen internal motivation, which can be seen in Table 3.

Table 3. Summary of Research Results

Section	Findings
Descriptive Analysis	Majority of respondents aged 25–45 (productive taxpayer group).
Measurement Model	Cronbach's Alpha > 0.7; AVE > 0.5 (valid and reliable).
Structural Model	Tax socialization → compliance: positive, significant. Tax understanding → compliance: positive, significant. Tax sanctions → compliance: positive, significant. Tax awareness mediates effects of socialization and sanctions. Tax awareness does *not* mediate effect of understanding.

5 Discussion

1. **The Effect of Tax Socialization on Tax Compliance**
   Tax socialization does not have a significant effect on tax compliance (p-value $= 0.116 > 0.05$; Path Coefficient $= 0.093$; 95% CI $= -0.137$ to 0.172; f-square $= 0.000$). This means that although tax socialization is carried out, it does not directly increase taxpayers' compliance in fulfilling their obligations.
2. **The Effect of Tax Understanding on Tax Compliance**
   Based on the data in Table 4.14, in the testing of the second hypothesis (H2), a p-value of $0.011 < 0.05$ was obtained. Thus, H2 is accepted and H0 is rejected, meaning that the variable *Tax Understanding* has a direct and significant effect on *Taxpayer Compliance*. The path coefficient value of 0.167 indicates that any change in *Tax Understanding* will impact *Taxpayer Compliance*. Improvements in tax understanding are expected to enhance taxpayer compliance. However, the ability of *Tax Understanding* to influence *Taxpayer Compliance* is relatively low, as indicated by the f-square value of $0.075 < 0.35$.
3. **The Effect of Tax Sanctions on Tax Compliance**
   Table 4 shows that in the testing of the third hypothesis (H3), a p-value of $0.087 > 0.05$ was obtained. Thus, H3 is rejected and H0 is accepted, meaning that the variable *Tax Sanctions* does not have a direct effect on *Tax Compliance.*
4. **The Effect of Tax Socialization on Tax Compliance through Tax Awareness**
   Tax Compliance through Tax Awareness

   In the testing of the fourth hypothesis (H4), a p-value of $0.041 < 0.05$ was obtained. Thus, H4 is accepted and H0 is rejected, meaning that the variable *Tax Socialization* has an indirect and significant effect on *Tax Compliance* through the mediation of *Taxpayer Awareness*. The path coefficient value of 0.123 indicates that any change in *Tax Socialization*, through the mediation of tax awareness, has an impact on *Taxpayer Compliance* at KPP Pratama Polonia Medan. Continuous tax socialization for restaurants, mediated by tax awareness, can increase restaurant taxpayers' compliance within the confidence interval range of 0.027–0.262.

5. **The Effect of Tax Understanding on Tax Compliance through Tax Awareness**
   In the testing of the fifth hypothesis (H5), a P-Value of 0.243 ¿ 0.05 was obtained. Thus, H5 is rejected and H0 is accepted, meaning that the variable Tax Understanding does not have an indirect and significant effect on Tax Compliance through the mediation of Taxpayer Awareness at KPP Pratama Polonia Medan. The Path Coefficient value of 0.055 indicates that any change in Tax Understanding, mediated by tax awareness, has a small impact on Taxpayer Compliance. Continuous and firm implementation of Tax Understanding by the government can increase tax awareness, which in turn may influence restaurant taxpayers' compliance within the interval range of 0.160–0.522.
6. **The Effect of Tax Sanctions on Tax Compliance through Tax Awareness**
   Tax Compliance through Tax Awareness

   In the testing of the sixth hypothesis (H6), a p-value of $0.001 < 0.05$ was obtained. Thus, H6 is accepted and H0 is rejected, meaning that the variable *Tax Sanctions* has an indirect and significant effect on *Tax Compliance* through the mediation of *Taxpayer Awareness* at KPP Pratama Polonia Medan. The path coefficient value of 0.123 indicates that any change in *Tax Sanctions*, mediated by tax awareness, has an impact on *Taxpayer Compliance*. Continuous and firm enforcement of tax sanctions can increase tax awareness, which in turn can improve restaurant taxpayers' compliance within the confidence interval range of 0.027–0.262.

5.1 Discussion of Research Results

Effect of Tax Socialization on Tax Compliance Tax socialization does not significantly affect compliance among individual taxpayers at KPP Medan Polonia (P-Value = 0.116; Path Coefficient = 0.093). Although socialization has been conducted, it has not directly increased compliance. However, it significantly increases tax awareness (P-Value = 0.017; Path Coefficient = 0.201), which can mediate compliance. This aligns with prior studies suggesting that effective socialization should be interactive, accessible, and aimed at building awareness and motivation.

Effect of Tax Understanding on Tax Compliance Tax understanding positively and significantly affects compliance (P-Value = 0.011; Path Coefficient =

0.167). The more taxpayers understand regulations and procedures, the higher their compliance. However, understanding alone does not significantly influence tax awareness (P-Value = 0.195), indicating that internal factors and socialization are needed to foster awareness. Effective education programs, simulations, and clear examples can enhance understanding and motivate compliance.

Effect of Tax Sanctions on Tax Compliance Directly, tax sanctions do not significantly affect compliance (P-Value = 0.087; Path Coefficient = 0.197). Yet, sanctions significantly increase tax awareness (P-Value = 0.000; Path Coefficient = 0.525), which can mediate compliance. This suggests that sanctions are effective when combined with education and socialization, helping taxpayers comply not just out of fear but also understanding their responsibilities.

Effect of Tax Socialization on Compliance through Awareness Tax socialization positively affects tax awareness (P-Value = 0.017; Path Coefficient = 0.201), which mediates compliance. Although socialization does not directly affect compliance, it strengthens awareness, supporting a psychological model of tax compliance where internal motivation transforms knowledge into actual compliance.

Effect of Tax Understanding on Compliance through Awareness Tax understanding does not significantly affect awareness (P-Value = 0.195; Path Coefficient = 0.091), so its indirect effect on compliance through awareness is insignificant. Awareness is more influenced by socialization, experience, and psychological factors than by knowledge alone. Compliance strategies should combine understanding with socialization and awareness-building.

Effect of Tax Sanctions on Compliance through Awareness Tax sanctions significantly increase awareness (P-Value = 0.000; Path Coefficient = 0.525), which mediates compliance, even though their direct effect on compliance is not significant (P-Value = 0.087). Sanctions are most effective when combined with education and socialization, emphasizing the importance of awareness as a key mediator in compliance. The findings confirm that socialization, understanding, and sanctions all play vital roles in shaping compliance. Socialization increases taxpayers' knowledge, leading to better compliance behavior. Tax understanding also contributes, though its indirect effect via awareness is weaker. Sanctions, when applied fairly, create deterrence and simultaneously raise awareness of the importance of paying taxes. Interestingly, tax awareness significantly mediates the relationship between socialization and sanctions with compliance, but not between understanding and compliance. This suggests that knowledge alone is insufficient without internal motivation. Awareness serves as a psychological driver that transforms external factors into genuine compliance. The practical implication is that tax authorities should not only focus on providing knowledge but also emphasize values, transparency, and fairness to build taxpayer awareness.

6 Conclusion

This study examined the effect of Tax Socialization, Tax Understanding, and Tax Sanctions on Taxpayer Compliance, with Tax Awareness as a moderating variable among individual taxpayers at KPP Medan Polonia. The findings reveal that Tax Socialization does not directly influence taxpayer compliance, as it primarily functions as an educational tool that enhances understanding and awareness rather than immediate compliance. Tax Understanding has a significant positive impact on compliance, indicating that taxpayers who comprehend tax regulations and their benefits are more likely to fulfill their legal obligations. Conversely, Tax Sanctions show no significant effect on compliance, as sanction-based compliance tends to be temporary and dependent on supervision. Tax Awareness moderates the relationship between Tax Socialization and Taxpayer Compliance, suggesting that knowledge effectively promotes compliance only when accompanied by moral and legal awareness. However, Tax Awareness does not moderate the effect of Tax Understanding, since understanding alone is sufficient to foster compliance. Finally, Tax Awareness moderates the relationship between Tax Sanctions and Compliance by transforming sanctions from external pressures into internal motivations for taxpayers to comply.

7 Limitations

This study has several limitations that should be acknowledged. First, the research was conducted in only one tax office, which limits the generalizability of the findings to other offices or regions with different organizational contexts. Second, the data were obtained through self-reported questionnaires, which may be subject to perception bias or social desirability bias, potentially affecting the accuracy of the responses. Lastly, the study did not include other possible determinants such as service quality and perceived fairness, which might also influence taxpayer behavior and could be explored in future research.

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