

Understanding MSME Tax Compliance: The Role of Mental Accounting, Tax Awareness, Sanctions, and Socialization in Medan Marelan

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ABSTRACT

Micro, small, and medium enterprises contribute substantially to employment and local economic activity, yet many still struggle to meet tax obligations consistently. This study examines whether mental accounting, tax awareness, tax sanctions, and tax socialization explain tax compliance among MSME taxpayers in Medan Marelan. Using a quantitative cross-sectional survey, data were collected from 104 active MSME taxpayers through purposive sampling. Analysis employed partial least squares structural equation modeling with SmartPLS 4. The measurement model demonstrates satisfactory indicator reliability, convergent validity, and internal consistency. The structural model explains 86.1 percent of variance in tax compliance. Results show mental accounting has a positive but statistically nonsignificant effect, while tax awareness has a negative and nonsignificant effect. In contrast, tax sanctions exert the strongest significant positive effect on compliance, followed by tax socialization. Findings suggest financial cognition and declarative awareness do not automatically translate into compliant behavior when MSMEs face limited capital and administrative complexity. Consistent enforcement and accessible education appear more influential because they increase perceived consequences and reduce procedural uncertainty. This study extends Indonesian MSME tax literature by showing behavioral and institutional determinants vary across local contexts. Therefore tax authorities should combine transparent proportional enforcement with continuous practical digitally accessible assistance.

Keywords: MSME tax complian; mental accounting; tax awareness; tax sanctions; tax socialization

1. INTRODUCTION

Micro, small, and medium-sized enterprises play a vital role in the economies of developing countries because this sector creates jobs, supports household income, and spreads economic activity beyond large corporations. (Inegbedion et al., 2024). indicates that the growth and cometitiveness of MSMEs bolster job creation, although limited managerial and institutional capacity often

hinders this contribution. Indonesia faces a similar challenge because its large MSME base does not always generate stable tax revenue, given that businesses vary in their ability to keep records, file reports, make payments, and understand procedures.

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institutional capacity often hinders this contribution. Indonesia faces a similar challenge because its large MSME base does not always generate stable tax revenue, given that businesses vary in their ability to keep records, file reports, make payments, and understand procedures. (Appiah et al., 2024). shows that knowledge of taxation and trust in the government influence voluntary compliance among business owners. (Abdu & Adem, 2023) also found that trust in and the power of authorities shape different patterns of compliance. Therefore, tax authorities need to understand whether businesses comply with tax laws because they internalize their public obligations, anticipate penalties, receive effective guidance, or set aside funds specifically for tax obligations.

Mental accounting offers a relevant behavioral framework because business owners often categorize income and expenses based on subjective goals. Thaler (1985) explains that individuals create mental accounts that influence budgeting and spending decisions, even though all money has an economic value that is interchangeable.. (Javareshk et al., 2024). linking mental accounting to decisions regarding tax obligations, (Puspita & Wardani, 2022) indicates that MSME owners use mental categories in their business decision-making. Separating business, household, and tax funds should help business owners protect their tax allocations, but limited record-keeping and liquidity pressures can reduce these benefits.

Tax awareness refers to taxpayers' recognition of their legal obligations and the social function of taxes. Awareness can encourage voluntary compliance when taxpayers understand the rules, public benefits, and legitimacy of the tax system. However, awareness does not necessarily lead to action when taxpayers face complex procedures, financial constraints, or uncertainty in using digital services. The literature shows varying results because. (Appiah et al., 2024) found a positive effect of tax knowledge, whereas (Hazmi & Aribowo, 2025) found no significant effect of tax awareness on MSME compliance in Bekasi.

Tax penalties and tax outreach represent two institutional mechanisms that can transform intentions into actual behavior. Penalties increase the perceived cost of noncompliance when taxpayers perceive enforcement to be credible and consistent.(Jin et al., 2022) shows that the deterrent effect of screening influences compliance behavior, whereas (Muehlbacher et al., 2023) shows that fines and the likelihood of an audit can influence taxpayers' behavior. Outreach works through a different mechanism because it enhances taxpayers' ability to understand regulations, procedures, and digital services. (Alm et al., 2023) positions educational interventions as a behavioral boost because such programs strengthen decision-making capacity without relying solely on threats.

Previous research in Indonesia has largely focused on awareness, sanctions, and

socialization, but recent studies have only just begun to integrate mental accounting with institutional factors. (Hazmi & Aribowo, 2025) The study tested the same four predictors among MSMEs in Bekasi and found significant effects of mental accounting, sanctions, and socialization, but found no significant effect of awareness. This study examines whether the same pattern also emerges in Medan Marelan. This contextual replication has analytical value because business characteristics, administrative access, and local financial practices can alter the relative strength of each predictor.

This study addresses three major gaps. First, it examines financial cognition and institutional mechanisms within a single model, allowing the analysis to compare their relative influences. Second, it tests the ability of mental accounting to explain compliance in the context of local MSMEs, where there remains a potential for the commingling of business and household finances. Third, this study compares the effects of sanctions and public awareness campaigns, allowing the analysis to distinguish between coercive approaches and capacity-building approaches. Based on these gaps, this study analyzes the effects of mental accounting, tax awareness, tax sanctions, and tax outreach on tax compliance among MSMEs in Medan Marelan.

Mental accounting is a series of thinking processes that each person and family uses to manage, evaluate, and track their financial

activities (Thaler, 1999). Thaler (1999) also said that one example of mental accounting is the way people manage money by labeling the sources and uses of their money. (Abdullah Ulmi Zuhdhan Fanani, 2025). Thaler (1999) said that mental accounting makes people tend to separate their money into different mental accounts for different purposes. (Kristalinawati et al., 2025). Individuals have made financial plans, but when managing their finances, they don't follow these plans and their decision-making becomes irrational. This can be called mental accounting bias. Mental accounting is a concept that explains the link between how people manage their money and their mental health..(Rahmawati et al., 2024).

Tax awareness is the willingness to fulfill one's obligations, including being willing to contribute funds for the government's functions by paying taxes. (Suhardito, B. & Sudibyo, B. 1999). The level of awareness that taxpayers have also affects their compliance in paying taxes because, in reality, not many people are consciously aware of their tax obligations. (Maulidiah et al., 2023). Ajzen (1991) in Kurniawati (2014) developed the Theory of Reasoned Action into another theory, which is the Theory of Planned Behavior, and showed the relationship of behaviors exhibited by individuals in response to something. (Aditiyanto Ekaputra, 2022). Awareness increases taxpayer compliance. MSME actors who have a strong understanding of their tax position and obligations will be encouraged to be more

compliant, especially with limited resources. This theory states that taxpayer awareness boosts tax compliance, particularly among MSMEs. (Zebua & Putra, 2025).

Tax sanctions are a consequence you get when a taxpayer breaks tax rules. (Putri & Nadi 2024, 99). Tax sanctions are a guarantee that tax laws and regulations will be followed, or in other words, tax sanctions are a preventive tool to stop taxpayers from breaking tax rules. (Wijaya et al., 2025). Tax sanctions are legal consequences given to taxpayers who break tax regulations. These sanctions aim to enforce the law and encourage taxpayers to follow the rules. (P. P. Perpajakan et al., 2024). Attribution theory was first introduced in 1958 by Fritz Heider. Attribution theory explains how individuals figure out the causes behind an action or decision they make, as well as the reasons that drive someone to act or choose a certain way of doing things. (Bahtiar & Setiawaty, 2024).

Tax socialization is one way to convey information about regulations and matters related to taxes so that individual and corporate taxpayers can comply with them. (Boediono et al., 2018). The purpose of providing socialization to taxpayers regarding taxation is so that when making payments, taxpayers already know the procedure for making payments according to the applicable regulations. (Adawiyah et al., 2023). Meanwhile, tax socialization and tax penalties are categorized as external factors coming from the government environment or policies.

The interaction between these internal and external factors is believed to affect the level of taxpayer compliance, especially among e-commerce business players. (S. Perpajakan & Kepatuhan, 2026).

2. METHODS

This study uses a quantitative cross-sectional survey to analyze the relationship between mental accounting, tax awareness, tax penalties, tax outreach, and tax compliance among MSMEs. The study focuses on MSME taxpayers operating in Medan Marelan. The study sample included 104 respondents who met the analysis criteria.

The study employed purposive sampling because the analysis required respondents with direct experience in running a business and fulfilling tax obligations. Inclusion criteria included ownership of an active MSME, possession of a Taxpayer Identification Number (NPWP), at least one year of business operation, and having tax obligations as an MSME operator. This design enhances the relevance of the information but does not allow for statistical generalizations to the entire MSME population.

The questionnaire uses a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Each construct uses five reflective indicators. The study measures mental accounting through budgeting, the separation of business and personal finances, and the allocation of tax funds. The study measures tax awareness through knowledge,

willingness, and understanding of obligations. The study measures sanctions through the severity, certainty, and credibility of enforcement. The study measures public outreach through frequency, clarity, accessibility, and practical usefulness. The study measures tax compliance through payment, reporting, timeliness, and adherence to regulations.

The study analyzed the data using partial least squares structural equation modeling (PLS-SEM) via SmartPLS 4. PLS-SEM is suitable for predictive models that use multiple latent constructs and allows for the simultaneous evaluation of measurement and structural models (Hair et al., 2021). The measurement model evaluation included outer loadings, average variance extracted, Cronbach's alpha, composite reliability, the Fornell-Larcker criteria, and cross-loadings. The structural model evaluation included multicollinearity, the coefficient of determination, effect sizes, and path coefficients obtained via bootstrapping. The study used a 5 percent significance level and considered two-tailed t-statistics above 1.96 to be significant.

Table 1. Operationalization of Research Constructs

Construction	Operational dimensions	Key empirical basis
Mental Accounting	Budgeting, financial separation, and allocation of funds for tax obligations	Javareshk et al. (2024); Puspita dan Wardani (2022)

Construction	Operational dimensions	Key empirical basis
Tax Awareness	Knowledge, willingness, acknowledgment of responsibility, and public benefit	Appiah et al. (2024); San et al. (2023)
Tax penalties	Severity, certainty, examination risk, and enforcement credibility	Jin et al. (2022); Muehlbacher et al. (2023)
Tax Outreach	Frequency, clarity, accessibility, practical guidance, and digital assistance	Alm et al. (2023); Styaningrum et al. (2025)
Tax Compliance for MSMEs	Registration, payment, reporting, timeliness, and compliance with regulations	Hazmi dan Aribowo (2025); Appiah et al. (2024)

3. RESULTS AND DISCUSSION

The respondent profile shows that the sample primarily consists of MSME owners in their productive years. Most respondents run retail businesses and have been operating their businesses for four to six years. All respondents have a Taxpayer Identification Number, meaning these characteristics meet the study's inclusion criteria.

Tabel 2. Profil responden

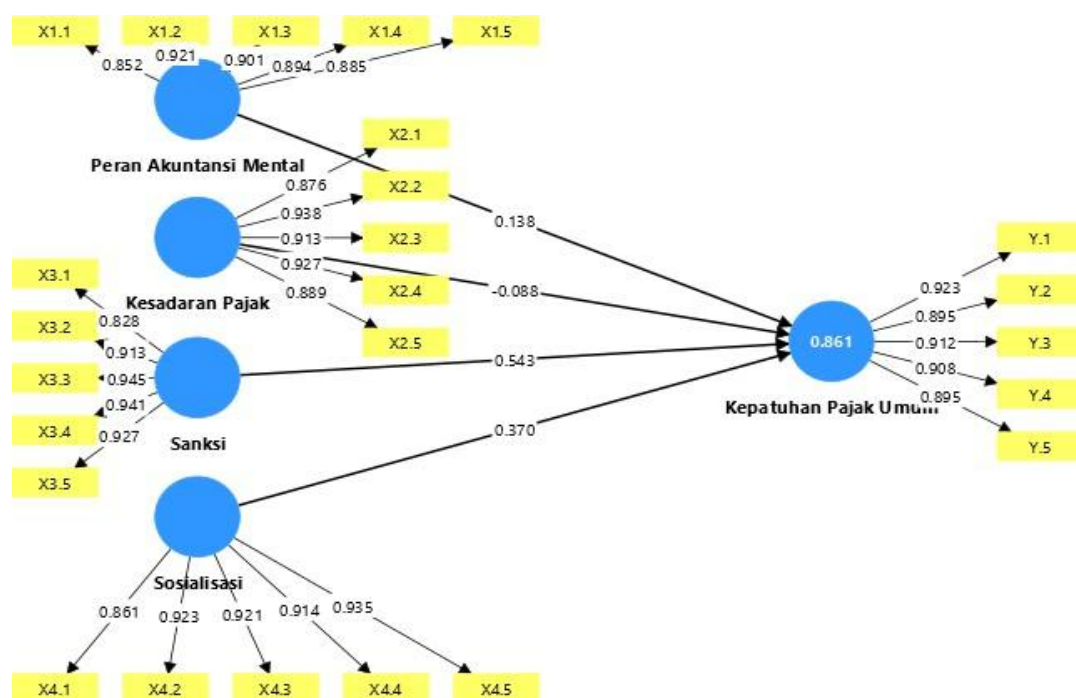
Characteristic s	Category	Frequenc y	Per centage
Age	25 years or younger	12	12%
Age	26 to 40 years old	58	58%
Age	Ages 41 to 55	25	25%
Age	More than 55 years	5	5%

Characteristic	Category	Frequency	Percentage
Type of business	Trade	52	52%
Type of business	Services	28	28%
Type of business	Production or home-based industry	20	20%
Length of time in business	1 to 3 years	34	34%
Length of time in business	4 to 6 years	47	47%
Length of time in business	More than 6 years	19	19%
Education	Elementary School through High School	61	61%
Education	Diploma or	39	39%

Characteristic	Category	Frequency	Percentage
	bachelor's degree		
NPWP Status	Have	100	100%

Evaluation of measurement models

The measurement model demonstrated strong convergent validity and internal consistency. All retained indicators had outer loadings above the 0.70 threshold. The average variance extracted ranged from 0.794 to 0.831, indicating that each construct explained more than half of the variance in its indicators. The Cronbach's alpha, rho_A, and composite reliability values also exceeded 0.70 for all constructs.



Results of the Measurement Model Evaluation (Outer Model)

Table 3. Evaluation of the measurement model

Construction	Indicators	Loading range	AVE	Cronbach's alpha	rho_A	rho_C
Mental Accounting	X1.1 through X1.5	0,852 through 0,921	0,794	0,935	0,939	0,951
Tax Awareness	X2.1 through X2.5	0,876 through 0,938	0,826	0,947	0,950	0,960
Tax penalties	X3.1 through X3.5	0,828 through 0,945	0,831	0,949	0,953	0,961
Tax Outreach	X4.1 through X4.5	0,861 through 0,935	0,830	0,949	0,953	0,961
Tax Compliance for MSMEs	Y1 through Y5	0,895 through 0,923	0,822	0,946	0,946	0,959

variance, even though both technically still meet the criteria.

The Fornell-Larcker criteria provide additional evidence of discriminant validity. Each diagonal value is greater than the correlation with other constructs. However, the difference between the square root of the AVE for tax compliance (0.907) and its correlation with tax penalties (0.906) is only 0.001. This very small difference calls for careful interpretation because tax penalties and tax compliance share a high degree of empirical

Table 4. Fornell-Larcker Criteria

Construction	MA	TA	SP	TAC	TC
Mental Accounting (MA)	0,891				
Tax Awareness (TA)	0,824	0,909			
Tax Penalties (SP)	0,847	0,854	0,912		

Construction	MA	TA	SP	TAC	TC
Tax Awareness Campaign (TAC)	0,766	0,784	0,865	0,911	
Tax Compliance for Micro, Small, and Medium Enterprises (MSMEs) (TC)	0,810	0,780	0,906	0,877	0,907

Structural model evaluation and hypothesis testing

The SmartPLS output shows that all inner variance inflation factor values are below 5.00, indicating that the model does not exhibit critical multicollinearity. The four predictors

explain 86.1 percent of the variation in MSME tax compliance, while the adjusted R-squared reaches 0.855. This high explanatory power indicates that the model captures relevant behavioral and institutional dimensions; however, the cross-sectional design and nonprobability sampling do not support causal claims or broad population generalizations.

Table 5. Structural model results and hypothesis testing

Route	Beta	t statistik	p value	f kuadrat	Ukuran efek	Keputusan
Mental Accounting and Tax Compliance	0,138	1,752	0,080	0,034	Small	H1 is not supported
Tax Awareness and Tax Compliance	-0,088	1,101	0,271	0,013	Negligible	H2 is not supported
Tax penalties for non-compliance	0,543	5,366	< 0,001	0,314	Currently	H3 is supported
Tax Outreach for Tax Compliance	0,370	3,853	< 0,001	0,240	Currently	H4 is supported

Mental accounting yielded a positive coefficient, but the t-statistic and p-value did not reach the 5 percent significance level. Tax awareness also showed no significant effect and yielded a small negative coefficient. Tax

penalties yielded the largest positive coefficient and a moderate effect size, while tax outreach yielded the second-largest positive coefficient with a moderate effect size. These results support H3 and H4 but do not support H1 and H2.

4. CONCLUSION

This study examines the effect of mental accounting, tax awareness, tax sanctions, and tax socialization on MSME tax compliance in Medan Marelan District with 104 respondents using PLS-SEM SmartPLS 4 analysis. The structural model explains 86.1% of the variance in tax compliance ($R^2=0.861$; Adjusted $R^2=0.855$). Results show that mental accounting has a positive but insignificant effect because the separation of business and tax funds is not applied consistently due to informal record-keeping and liquidity pressure, tax awareness has a negative and insignificant effect because declarative awareness does not automatically drive compliant action under limited capital and administrative complexity, while tax sanctions exert the most dominant significant positive effect and tax socialization has a significant positive effect because consistent enforcement increases the perceived cost of non-compliance and practical, digitally accessible education reduces procedural uncertainty. These findings confirm the dominance of institutional factors over behavioral cognition in resource-constrained MSME contexts.

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