

ANALYSIS OF MOTOR VEHICLE TAXPAYER COMPLIANCE IN METRO CITY

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Abstract

Motor vehicle tax (Pajak Kendaraan Bermotor/PKB) compliance remains a persistent challenge in Indonesia's regional fiscal governance, as PKB serves as one of the primary pillars of regional own-source revenue (Pendapatan Asli Daerah/PAD). This study examines the determinants of motor vehicle taxpayer compliance in Metro City, Lampung Province, drawing on primary data gathered through structured questionnaires administered to 103 taxpayers at the Metro City SAMSAT Office. Using Ordinary Least Squares (OLS) regression, the study tests four independent variables: voice and accountability (X1), transparent tax system (X2), government effectiveness (X3), and tax penalties (X4). The model accounts for 63.36% of the variation in taxpayer compliance ($R^2 = 0.6336$). The F-test confirms that all four variables jointly exert a significant influence on compliance (F-statistic = 42.37, Prob = 0.0000). At the individual level, voice and accountability (coefficient = 1.364, Prob = 0.0000) and transparent tax system (coefficient = 0.420, Prob = 0.0962) each yield a positive and statistically significant effect. Government effectiveness produces a negative and insignificant result (coefficient = -0.442, Prob = 0.1060), while tax penalties show no meaningful effect on compliance behavior (coefficient = -0.081, Prob = 0.6423). The evidence points to the necessity of building public confidence in government accountability and streamlining tax administration procedures as concrete pathways toward higher voluntary compliance rates.

Keywords: Taxpayer Compliance; Motor Vehicle Tax; Voice And Accountability; Transparent Tax System; Government Effectiveness

1. Introduction

Motor vehicle tax (Pajak Kendaraan Bermotor/PKB) occupies a central position within the regional own-source revenue (Pendapatan Asli Daerah/PAD) structure across Indonesian provinces. Data released by the Directorate General of Fiscal Balance, Ministry of Finance (2023), show that PKB nationally contributes between 30 and 40 percent of total provincial PAD, making it a fiscal pillar that regional governments cannot afford to underperform. The situation in Lampung Province is even more pronounced: PKB combined with the Motor Vehicle Transfer Fee (Bea Balik Nama Kendaraan Bermotor/BBNKB) consistently accounts for over 60 percent of total provincial PAD, as documented in the Lampung Provincial Government's Budget Realization Reports for 2022 and 2023. Given this weight, the degree to which PKB collection is effectively carried out becomes a decisive factor in sustaining regional fiscal capacity.

Despite the continuous growth in the number of registered motor vehicles, the level of PKB payment compliance remains a persistent problem. The Regional Revenue Agency (Badan Pendapatan Daerah/Bapenda) of Lampung Province recorded that in 2022, the PKB compliance rate in Lampung Province reached only around 65 percent of total registered taxpayer potential. The problem extends well beyond the provincial capital, as smaller cities including Metro City face the same structural challenge. As the second-largest administrative city in Lampung with a steadily expanding vehicle population, Metro City carries a substantial PKB revenue base that remains far from fully tapped, largely on account of persistently low compliance rates among registered taxpayers.

The international tax literature has long grappled with the question of what drives taxpayer compliance. Allingham and Sandmo (1972), in their foundational economic model, argued that

compliance decisions hinge on three factors: the probability of being caught, the severity of penalties, and the applicable tax rate. Yet this rationalist framework has proven incomplete. Subsequent scholarship revealed that psychological, social, and institutional forces carry comparable, if not greater, weight. Torgler (2005), drawing on cross-country data, demonstrated that trust in government and tax morale rank among the most robust predictors of voluntary compliance. The study by Alm and Torgler (2006) in the *Journal of Economic Psychology* further established that the overall quality of governance shapes how willing individuals are to honor their tax obligations.

Within the Indonesian scholarly landscape, researchers have approached the question of local tax compliance from several directions. Rahayu (2020), writing in the *Jurnal Riset Akuntansi dan Keuangan*, demonstrated that service quality and accessible tax information systems meaningfully raise motor vehicle taxpayer compliance. Winerungan (2013), examining the Manado context, highlighted the role of tax socialization programs and public understanding in shaping compliance behavior. What the literature has not adequately addressed, however, is the specific influence of government accountability mechanisms, tax system transparency, and perceived government effectiveness on PKB compliance in mid-sized cities like Metro City, where institutional dynamics often differ substantially from larger urban centers.

This study addresses that gap by empirically examining four variables hypothesized to shape motor vehicle taxpayer compliance in Metro City: (1) government voice and accountability, (2) tax system transparency, (3) government effectiveness in tax administration, and (4) tax penalties. A survey-based approach was adopted, covering 103 taxpayers at the Metro City SAMSAT Office, with OLS regression serving as the principal analytical tool. The results are intended to offer actionable, evidence-grounded recommendations to the Metro City Government and Bapenda Lampung Province for crafting more effective compliance-enhancement policies.

2. Literature Review

At its core, taxpayer compliance refers to the readiness of individuals to discharge their tax obligations in line with prevailing regulations, without requiring external compulsion (Kirchler, 2007). Applied to the Indonesian local tax setting, this concept encompasses meeting payment deadlines, submitting complete reports, and accurately declaring taxable assets. James and Alley (2002), writing in the *New Zealand Journal of Taxation Law and Policy*, draw a useful distinction between technical compliance, which pertains to procedural adherence, and economic compliance, which captures the broader financial dimension of fulfilling tax obligations. Together, these two dimensions offer a more complete picture of what it means for a taxpayer to truly comply.

The dominant theoretical lens through which tax compliance has been studied remains the Allingham-Sandmo model (1972), which treats taxpayers as utility-maximizing agents who weigh the expected benefits of evasion against the risks of audit and punishment. Despite its wide adoption, the model has attracted sustained criticism for overlooking the normative and relational dimensions of tax behavior. Fischer et al. (1992) addressed this shortcoming by constructing a broader model that integrates demographic characteristics, perceived opportunities for non-compliance, attitudes toward the tax system, and social norm influences. Because it accounts for institutional and societal variables, the Fischer model has proven particularly applicable in developing-country research contexts where formal enforcement capacity is still maturing.

Voice and accountability is one of the dimensions of government governance developed by Kaufmann, Kraay, and Mastruzzi (2010) within the World Governance Indicators (WGI) framework of the World Bank. This dimension captures how much citizens can meaningfully participate in choosing their leaders, alongside freedoms of expression, association, and the press. When applied to tax compliance research, these governance attributes take on tangible fiscal relevance. Fjeldstad and Semboja (2001), writing in *World Development*, documented that in Sub-Saharan African countries, taxpayers who held a favorable view of government accountability were consistently more inclined to pay taxes voluntarily. Levi (1998) offered a theoretical basis for this pattern through the concept of quasi-voluntary compliance, arguing that citizens will fulfill tax obligations willingly only when they believe the state will deploy those resources responsibly and in ways that benefit the public.

Tax system transparency concerns how readily taxpayers can access and understand information about tax rules, applicable rates, administrative procedures, and how collected revenues are ultimately used. The OECD (2010), in its comparative report *Tax Administration 2010*, identifies clear and accessible tax administration as a foundational condition for voluntary compliance. Closer to home, Nurhayati et al. (2015) found that simplified procedures and the provision of clear tax-related information positively predict motor vehicle taxpayer compliance in Indonesia. This finding resonates with the slippery slope framework advanced by Kirchler et al. (2008), which holds that compliance

driven by genuine trust emerges when taxpayers experience the tax system as fair, open, and predictable, as opposed to compliance driven by coercion alone.

Government effectiveness, as used in this study, captures citizens' assessments of the quality of public services, bureaucratic competence in executing policy, and the government's track record in honoring its stated commitments. Bird, Martinez-Vazquez, and Torgler (2008), in their cross-national study published in *Economics and Politics*, found a positive relationship between government effectiveness and tax effort at the national level. At the subnational level, however, this relationship becomes less predictable, varying considerably with local conditions and how residents perceive their local government's actual performance. A recurring paradox in this literature is that taxpayers who view the government as highly capable may feel less personally compelled to comply, operating under the implicit assumption that the government can manage its revenue needs without their individual contribution.

The role of tax penalties in shaping compliance has generated considerable scholarly debate. Within the Allingham-Sandmo (1972) framework, penalties occupy a central place as the key deterrent. Empirical work, however, tells a more complicated story. Andreoni, Erard, and Feinstein (1998), reviewing the literature in the *Journal of Economic Literature*, concluded that the deterrent power of penalties is contingent on how likely taxpayers believe they are to be caught. In developing economies where enforcement infrastructure is limited, that perceived probability tends to be low, substantially eroding the deterrent effect. Palil's (2010) research in Malaysia added another layer of nuance by showing that penalties tend to work only for taxpayers who already possess sufficient knowledge of the tax system, while those with limited tax literacy remain largely unresponsive to sanction-based incentives.

3. Research Methods

3.1 Research Object, Time, and Location

The subjects of this study are motor vehicle taxpayers who visited the Metro City SAMSAT Office, Lampung Province, either to make a payment or to complete administrative procedures related to their vehicle tax. Data collection took place between 2025 and 2026. Metro City was selected as the research site because it is the second-largest administrative city in Lampung Province and has experienced sustained growth in its registered vehicle population, yet remains underrepresented in the academic literature on vehicle tax compliance relative to the provincial capital, Bandar Lampung.

3.2 Data Collection Technique

Primary data were collected through structured questionnaires distributed directly to 103 motor vehicle taxpayer respondents. The sampling technique used was purposive sampling, with the respondent criterion being taxpayers who had made at least one PKB payment in the past two years. The questionnaire instrument was constructed using a five-point Likert scale to capture respondents' perceptions of each variable. Taxpayer compliance (Y), the dependent variable, was operationalized through 11 questionnaire items with a possible maximum score of 55. The independent variables were measured as follows: voice and accountability (X1) through 4 items, tax system transparency (X2) through 4 items, government effectiveness (X3) through 3 items, and tax penalties (X4) through 3 items.

3.3 Data Analysis Technique

The data were analyzed using the Ordinary Least Squares (OLS) estimation method, processed through EVIEWS 12 software. The empirical model takes the following form:

$$Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \varepsilon$$

In this specification, Y denotes motor vehicle taxpayer compliance, X1 represents voice and accountability, X2 is tax system transparency, X3 captures government effectiveness, X4 stands for tax penalties, β_0 is the intercept, β_1 – β_4 are the slope coefficients, and ε is the stochastic error term. Hypothesis testing proceeds in three stages: the coefficient of determination (R^2) assesses overall model fit, the F-test evaluates whether all regressors jointly explain a significant portion of the variation in compliance, and the t-test examines the individual contribution of each independent variable. A significance threshold of $\alpha = 0.10$ was applied throughout, a level widely accepted in socioeconomic research when sample sizes are moderate.

4. Results And Discussion

4.1 Descriptive Statistics of Respondents

Across the 103 valid responses, the mean taxpayer compliance score (Y) stood at 34.06, with a

standard deviation of 6.05. Individual scores ranged from a low of 16 to a high of 55, pointing to notable heterogeneity in compliance behavior across the sample. The mean scores for the independent variables were as follows: voice and accountability (X1) at 12.20, tax system transparency (X2) at 12.43, government effectiveness (X3) at 8.76, and tax penalties (X4) at 11.10. The spread in these scores reflects genuine variation in how respondents perceive each governance dimension, lending statistical validity to the subsequent regression analysis.

4.2 OLS Regression Estimation Results

Running the OLS estimation on the 103-observation dataset in EViews yields the following fitted regression equation:

$$\hat{Y} = 17.707 + 1.364 X1 + 0.420 X2 - 0.442 X3 - 0.081 X4$$

Table 1. OLS Regression Estimation Results of Motor Vehicle Taxpayer Compliance in Metro City

Variable	Coefficient	Std. Error	t-Statistic	Probability
Constant (C)	17.707	1.781	9.945	0.0000***
X1 (Voice & Accountability)	1.364	0.212	6.436	0.0000***
X2 (Tax Transparency)	0.420	0.250	1.680	0.0962*
X3 (Government Effectiveness)	-0.442	0.271	-1.631	0.1060
X4 (Tax Penalties)	-0.081	0.173	-0.466	0.6423
R-squared	0.6336			
Adjusted R-squared	0.6187			
F-statistic	42.370		Prob(F)	0.0000***
Observations	103			

Note: ***significant at $\alpha=1\%$, *significant at $\alpha=10\%$. Source: EViews data processing (2026).

4.3 Coefficient of Determination Test (R^2)

The R-squared of 0.6336 tells us that the four regressors, namely voice and accountability (X1), tax system transparency (X2), government effectiveness (X3), and tax penalties (X4), collectively account for 63.36 percent of the observed variation in motor vehicle taxpayer compliance in Metro City. The Adjusted R-squared of 0.6187 corroborates this, showing that the model's explanatory strength holds up after penalizing for model complexity. Hair et al. (2014) in *Multivariate Data Analysis* note that values above 0.50 are generally regarded as substantively meaningful in social science research, placing the present model comfortably within that range. The residual 36.64 percent of unexplained variation likely reflects influences not captured in this model, including taxpayer income, educational attainment, proximity to the SAMSAT office, and broader sociodemographic characteristics.

4.4 F-Test (Simultaneous)

The F-statistic of 42.370, paired with a probability of 0.0000, provides strong grounds for rejecting the null hypothesis that all regression coefficients are jointly equal to zero. At a significance level of $\alpha = 0.10$, the result is unambiguous: the four variables as a group exert a statistically meaningful combined effect on motor vehicle taxpayer compliance in Metro City. This finding aligns with the argument put forward by Luttmer and Singhal (2014) in the *Journal of Economic Perspectives*, who contend that compliance behavior is never the product of a single driver but emerges from the interplay of social, institutional, and policy-level factors operating simultaneously.

4.5 Partial t-Test and Discussion

4.5.1 Voice and Accountability (X1)

Voice and accountability emerges as the strongest and most statistically robust predictor of compliance in this model, registering a coefficient of 1.364 and a probability of 0.0000, significant at the one-percent level. Interpreted practically, each one-unit rise in a taxpayer's positive assessment of government accountability translates into a 1.364-unit increase in compliance, all else equal. This outcome resonates with Levi's (1998) fiscal quid pro quo logic, whereby citizens extend compliance voluntarily when they are confident that the government exercises fiscal responsibility and manages public funds with integrity. At the empirical level, Fjeldstad's (2004) study in Tanzania corroborates this finding, identifying perceptions of local government accountability as the single strongest predictor of tax compliance across the variables examined. Translating these insights to the Metro City context, the implication is clear: policies that strengthen participatory governance, open budget reporting, accessible

Musrenbang processes, and responsive public complaint channels are not merely administrative improvements; they are, in effect, instruments for building a more compliant taxpayer base.

4.5.2 Tax System Transparency (X2)

The tax system transparency variable yields a positive coefficient of 0.420 and a probability of 0.0962, placing it just within the ten-percent significance threshold. The practical reading of this result is straightforward: taxpayers who find tax regulations easy to navigate, payment procedures unencumbered, and SAMSAT administration honest and open are demonstrably more inclined to pay their vehicle taxes on time. The finding sits comfortably within the slippery slope framework of Kirchler et al. (2008), which posits that trust-based compliance, the kind that persists without constant enforcement pressure, takes hold when taxpayers genuinely perceive the tax system as fair and transparent. From a policy standpoint, modernizing digital SAMSAT services, improving the accessibility and quality of tax information, and running targeted public education campaigns are practical investments that are likely to yield measurable compliance dividends in Metro City.

4.5.3 Government Effectiveness (X3)

Government effectiveness produces a coefficient of -0.442 with a probability of 0.1060, falling short of statistical significance at the ten-percent level. The negative sign on this coefficient is analytically noteworthy, pointing to a counterintuitive dynamic: taxpayers who rate the government as highly capable may actually feel diminished personal responsibility to comply. The reasoning here parallels what Torgler (2007) describes as a substitution effect in Tax Compliance and Tax Morale, where confidence in the government's own capacity crowds out the individual's internal sense of moral duty to contribute through taxes. In the Metro City setting, this could reflect a disposition among some taxpayers to prioritize the quality of accountability and openness over abstract assessments of bureaucratic efficiency. While the coefficient does not reach conventional thresholds of significance, the direction it points to is meaningful enough to merit attention from those designing local tax policy.

4.5.4 Tax Penalties (X4)

Tax penalties register a coefficient of -0.081 with a probability of 0.6423, a result that is far from statistically significant and therefore leads to acceptance of the null hypothesis. Put plainly, the presence or severity of penalties does not meaningfully predict whether motor vehicle taxpayers in Metro City choose to comply. This runs counter to the classical deterrence logic of Allingham and Sandmo (1972) but accords with a broad stream of empirical work. Andreoni et al. (1998), in their comprehensive review published in the *Journal of Economic Literature*, showed that penalties lose their bite when the perceived probability of being caught is low, a condition that characterizes many developing-country tax administrations. Palil (2010), examining Malaysian taxpayers, arrived at a related conclusion: sanctions tend to influence only those who already understand the tax system well, while the majority, lacking this foundation, remain largely unmoved by penalty threats. In Metro City, the insignificance of penalties likely reflects a combination of factors: inconsistent enforcement, penalty amounts that are modest relative to the hassle of compliance, and a compliance culture that has yet to fully internalize the norm of timely payment as a civic obligation.

5. Conclusion

This study set out to examine the determinants of motor vehicle taxpayer compliance in Metro City through OLS regression applied to data from 103 respondents. Several substantive conclusions emerge from the findings. Taken together, all four independent variables, voice and accountability, tax system transparency, government effectiveness, and tax penalties, jointly exert a significant influence on taxpayer compliance ($F = 42.37$; $\text{Prob} = 0.0000$), with the model explaining 63.36 percent of the variation in compliance behavior. At the individual variable level, voice and accountability stands out as the most influential predictor (coefficient = 1.364; $\text{Prob} = 0.0000$), while tax system transparency also contributes positively and significantly at the 90 percent confidence level (coefficient = 0.420; $\text{Prob} = 0.0962$). Government effectiveness takes a negative and statistically insignificant direction, hinting at a perceptual paradox where taxpayers who view the government as highly capable may feel less personally compelled to contribute. Tax penalties, meanwhile, show no significant effect whatsoever, suggesting that sanction-based deterrence, on its own, is an insufficient instrument for driving compliance in the Metro City context. The principal policy takeaway from these findings is that local governments should invest primarily in deepening public accountability and making tax administration more accessible and transparent, rather than leaning on penalty enforcement as the main lever. Future researchers are encouraged to expand the model by including variables such as taxpayer income, education level, and access to digital SAMSAT channels, which may account for a meaningful portion of the unexplained variation in compliance behavior.

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