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DETERMINANTS OF TAXPAYER COMPLIANCE AMONG E-COMMERCE MICRO, SMALL, AND MEDIUM ENTEPRISES IN JAKARTA

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ABSTRACT

This study examines the effects of tax understanding, perceived tax fairness, tax awareness, and tax sanctions on taxpayer compliance among e-commerce Micro, Small, and Medium Enterprises in Jakarta, motivated by a sharp decline in Annual Tax Return compliance among non-employee individual taxpayers. Using a quantitative survey method with purposive sampling, 172 valid responses were analyzed through Partial Least Squares Structural Equation Modeling (PLS-SEM). The results show that tax sanctions are the strongest determinant of compliance, followed by tax awareness and tax understanding, while perceived tax fairness shows no significant effect; together, the four variables explain a substantial proportion of the variance in taxpayer compliance. These findings extend Compliance Theory to the context of e-commerce Micro, Small, and Medium Enterprises under a turnover-based final tax scheme and indicate that enforcement and awareness based approaches may be more strongly associated with compliance than fairness perceptions in this setting, a pattern that should be interpreted with caution given the cross-sectional design of the study. The findings offer practical implications for tax authorities and related institutions in designing compliance strategies for the growing e-commerce MSME sector.

Keywords: Tax understanding, Perceived tax fairness, Tax awareness, Tax sanctions, Taxpayer compliance, E-commerce micro small and medium enterprises

ABSTRAK

Penelitian ini menganalisis pengaruh pemahaman pajak, persepsi keadilan pajak, kesadaran pajak, dan sanksi perpajakan terhadap kepatuhan wajib pajak Usaha Mikro, Kecil, dan Menengah (UMKM) pengguna e-commerce di Jakarta, dilatarbelakangi oleh penurunan tajam rasio kepatuhan SPT Tahunan Wajib Pajak Orang Pribadi Non-Karyawan. Menggunakan metode survei kuantitatif dengan purposive sampling, 172 data valid dianalisis menggunakan Partial Least Squares Structural Equation Modeling (PLS-SEM). Hasil menunjukkan sanksi perpajakan merupakan determinan terkuat kepatuhan, diikuti kesadaran pajak dan pemahaman pajak, sementara persepsi keadilan pajak tidak berpengaruh signifikan; keempat variabel bersama-sama menjelaskan proporsi variasi kepatuhan wajib pajak yang substansial. Temuan

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ini memperluas Teori Kepatuhan pada konteks UMKM e-commerce berskema PPh Final berbasis peredaran bruto, dan mengindikasikan bahwa pendekatan berbasis penegakan sanksi dan edukasi kesadaran pajak berpotensi lebih berkaitan erat dengan kepatuhan dibandingkan persepsi keadilan pada konteks ini, pola yang perlu dibaca secara hati-hati mengingat desain cross-sectional penelitian ini. Temuan ini memberikan implikasi praktis bagi otoritas pajak dan lembaga terkait dalam merancang strategi kepatuhan bagi sektor UMKM e-commerce yang terus bertumbuh.
Kata kunci: Pemahaman pajak, Persepsi keadilan pajak, Kesadaran pajak, Sanksi perpajakan, Kepatuhan wajib pajak, Usaha mikro kecil dan menengah *e-commerce*

INTRODUCTION

Indonesia relies heavily on taxation as the primary source of financing for national development, yet its tax ratio declined from 10.08% of Gross Domestic Product (GDP) in 2024 to 9.31% in 2025, indicating that tax revenue growth has not kept pace with economic growth (DDTC News, 2026). This shortfall is particularly visible in the digital economy: despite e-commerce transactions reaching approximately Rp487 trillion in 2024 and Micro, Small, and Medium Enterprises contributing 61.07% of national GDP, only about 653,000 of the 1.6 million registered MSME taxpayers paid the Final Income Tax that year, and Annual Tax Return (SPT) compliance among Non-Employee Individual Taxpayers fell sharply to 27.96% in 2024 despite continued growth in taxpayer registration (Direktorat Jenderal Pajak, 2024; Standard Insights, 2024; Kementerian Koperasi dan Usaha Kecil dan Menengah, 2023). That registration growth has not translated into filing compliance suggests the underlying problem is primarily behavioral rather than administrative (Direktorat Jenderal Pajak, 2024).

The government has responded with several reforms, including the 0.5% final income tax scheme for Micro, Small, and Medium Enterprises under Government Regulation No. 55 of 2022, the Coretax Administration System, and the marketplace withholding mechanism under Minister of Finance Regulation No. 37 of 2025 (Pemerintah Republik Indonesia, 2022; Direktorat Jenderal Pajak, 2026; Ikatan Konsultan Pajak Indonesia, 2025). However, digitalization alone does not automatically improve compliance, as its effectiveness depends on taxpayer readiness, trust, and behavioral acceptance (Ariyanto et al., 2024; Luthfiyati & Hariyanto, 2025; Wijayanti et al., 2025), a pattern echoed in evidence from Nigeria showing that fairness and administrative quality jointly shape SME compliance (Oyedele et al., 2025). Jakarta was selected as the research setting given its status as Indonesia's largest economic contributor (16.71% of national GDP) and its highest-ranked provincial score on the Information and Communication Technology Development Index, with more than 380,000 Micro, Small, and Medium Enterprises enrolled in the Jakpreneur program by mid-2024 (Badan Pusat Statistik DKI Jakarta, 2025; Dinas Perindustrian, Perdagangan, Koperasi, Usaha Kecil dan Menengah Provinsi DKI Jakarta, 2024).

This study is grounded in Compliance Theory (Kirchler, 2007), which integrates the economic deterrence perspective of Allingham and Sandmo (1972) with a socio-psychological perspective emphasizing trust, fairness, and moral obligation (Sihombing & Nuryanah, 2024). Within this framework, tax understanding and tax awareness are treated as internal cognitive determinants, while perceived tax fairness and tax sanctions are treated as external regulatory determinants of the tax compliance of e-commerce Micro, Small, and Medium Enterprises. The study follows established ethical standards for behavioral accounting research, ensuring voluntary participation, informed consent, and respondent confidentiality to minimize social desirability bias in perception-based constructs (Creswell, 2023).

Recent literature indicates that taxpayer compliance is multidimensional, shaped jointly by economic and psychological factors (Khairb, 2026). Tax understanding consistently shows

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a positive relationship with compliance, and tax awareness strengthens voluntary compliance through intrinsic motivation and moral responsibility (Febrini & Fadhila, 2022; Kusuma & Diana, 2022; Suryanto & Fitri, 2024; Halbu et al., 2021; Musimin & Widyasari, 2021; Macintyre et al., 2023). Evidence on perceived tax fairness remains inconsistent, with some studies reporting significant effects and others finding none, suggesting that the role of fairness is highly context-dependent (Rahmawati et al., 2022; Dewi Rachmawati & Ardiansyah, 2023; Rinny et al., 2022). Tax sanctions, meanwhile, consistently emerge among the strongest predictors of compliance (Theodore & Jonnardi, 2024; Istutik et al., 2024; Napisah & Khuluqi, 2022). Digital transaction visibility, platform quality, and system usability further shape compliance, although digitalization alone does not guarantee compliance without taxpayer trust (Jin et al., 2023; Ariyanto et al., 2024; Luthfiyati & Hariyanto, 2025), and recent systematic reviews confirm that tax understanding, tax awareness, perceived fairness, and tax sanctions remain the principal determinants of e-commerce taxpayer compliance (Solihat & Agus Santoso, 2024; Tifani & Fuadah, 2025).

Despite this body of evidence, important gaps remain. Prior studies typically examine these determinants separately rather than within an integrated model (Oyedele et al., 2025), often combine conventional and digital Micro, Small, and Medium Enterprises within the same sample, and were frequently conducted before Indonesia's most recent tax administration reforms, including Coretax and the marketplace withholding system (Rosmawati, 2021; Suryanto & Fitri, 2024; Puspitasari et al., 2024; Khairb, 2026; Luthfiyati & Hariyanto, 2025; Wijayanti et al., 2025). No previous study has simultaneously examined tax understanding, perceived tax fairness, tax awareness, and tax sanctions within an integrated structural model focusing exclusively on NPWP-registered e-commerce Micro, Small, and Medium Enterprises in Jakarta under Indonesia's latest digital tax administration framework. Addressing this gap constitutes the primary objective and contribution of the present study, which investigates the effects of these four determinants on the tax compliance of e-commerce Micro, Small, and Medium Enterprises registered as taxpayers in Jakarta, drawing on Compliance Theory (Kirchler, 2007) as its theoretical foundation.

LITERATURE REVIEW

Compliance Theory

Compliance theory originates from the sociology of law, which examines why individuals obey norms and regulations within a social system, and in the taxation domain is used to explain taxpayer behavior in fulfilling both administrative and substantive tax obligations (Alm, 2019). This theory is divided into two main perspectives. The economic perspective is rooted in the classical deterrence model of Allingham and Sandmo (1972), which views compliance as the result of a rational calculation between the benefit of tax evasion and the risk of sanction, assuming taxpayers are risk-averse so that compliance decisions are influenced by the tax rate, audit probability, and sanction severity. Empirical research subsequently found that actual compliance levels across countries are far higher than predicted by economic calculation alone, indicating the need for a complementary social psychology perspective, which emphasizes that compliance is also shaped by social norms, trust in tax authorities, and tax morale (Kirchler, 2007). In the context of MSME e-commerce, the complexity of digital transaction systems demands a broader understanding of non-material factors influencing compliance (Gangl et al., 2015), so Compliance Theory provides a relevant conceptual framework for explaining how tax understanding, perceived tax fairness, tax awareness, and tax sanctions jointly influence the taxpayer compliance of e-commerce Micro, Small, and Medium Enterprises.

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Taxpayer Compliance

Taxpayer compliance is operationally defined as the degree to which individuals or entities fulfill all tax obligations in accordance with prevailing laws and regulations, encompassing both administrative aspects, such as timely reporting and payment, and the awareness and moral responsibility of taxpayers in contributing to national development (Alm, 2019; Afiyah et al., 2024). In this study, taxpayer compliance (variable Y) is measured through three indicators: tax calculation compliance, tax payment compliance, and tax reporting compliance

Tax Understanding

Tax understanding refers to the extent to which taxpayers comprehend tax regulations, tax calculation procedures, and tax reporting procedures relevant to their business activities (Maesyarah et al., 2025). Adequate tax understanding is expected to reduce the administrative burden perceived by taxpayers and increase their capacity to fulfill obligations correctly. In this study, tax understanding (variable X1) is measured through three indicators: knowledge of tax regulations, knowledge of tax calculation, and knowledge of tax reporting.

Perceived Tax Fairness

Perceived tax fairness reflects the subjective evaluation of taxpayers regarding the equity of the tax system that applies to them, encompassing the fairness of tax rates, administrative procedures, and treatment across taxpayers (Feld & Frey, 2007). Taxpayers who perceive the tax burden as proportionate to their business capacity are theorized to demonstrate higher compliance. In this study, perceived tax fairness (variable X2) is measured through three indicators: fairness of tax rates, procedural fairness, and fairness of treatment

Tax Awareness

Tax awareness reflects the extent to which taxpayers regard their tax obligations as part of their moral and social responsibility, rather than merely an administrative burden imposed upon them (Saad, 2014). Tax awareness is considered a key internal driver of voluntary compliance, as it is expected to persist independent of external enforcement. In this study, tax awareness (variable X3) is measured through three indicators: moral awareness, awareness of responsibility, and awareness of timeliness.

Tax Sanctions

Tax sanctions refer to taxpayers' perception of the penalty system applied by tax authorities against non-compliance, encompassing knowledge, clarity, and firmness of enforcement (Solihat & Agus Santoso, 2024). Rooted in the classical deterrence model of Allingham and Sandmo (1972), the effectiveness of sanctions as a deterrent is theorized to be a function of detection probability multiplied by the severity of the penalty imposed. In this study, tax sanctions (variable X4) are measured through three indicators: knowledge of sanctions, clarity of sanctions, and firmness of sanctions.

Research Hypothesis Development

Based on the theoretical review above, the conceptual framework of this study illustrates the relationship between four independent variables, namely tax understanding (X1), perceived tax fairness (X2), tax awareness (X3), and tax sanctions (X4), and one dependent variable, taxpayer compliance (Y), as shown in Figure 1. Taxpayers who understand tax regulations, calculation procedures, and reporting requirements face fewer administrative barriers to compliance (Afiyah et al., 2024; Maesyarah et al., 2025). Therefore, the first hypothesis proposed is: H1: Tax understanding has a positive effect on taxpayer compliance. Taxpayers who perceive the tax system as fair in terms of rates, procedures, and treatment are theorized to be more willing to comply voluntarily, as fairness perception is a core component of the trust dimension in the Slippery Slope Framework (Kirchler, 2007). Therefore, the second hypothesis proposed is: H2: Perceived tax fairness has a positive effect on taxpayer compliance. Taxpayers with higher moral awareness and a stronger sense of responsibility toward the state are theorized to comply more consistently, independent of external enforcement (Saad, 2014). Therefore, the third hypothesis proposed is: H3: Tax awareness has a positive effect on taxpayer compliance. Consistent with the deterrence model of Allingham and Sandmo (1972), taxpayers who perceive sanctions as clear and firmly enforced face a higher expected cost of non-compliance, which is theorized to increase compliance. Therefore, the fourth hypothesis proposed is: H4: Tax sanctions have a positive effect on taxpayer compliance.

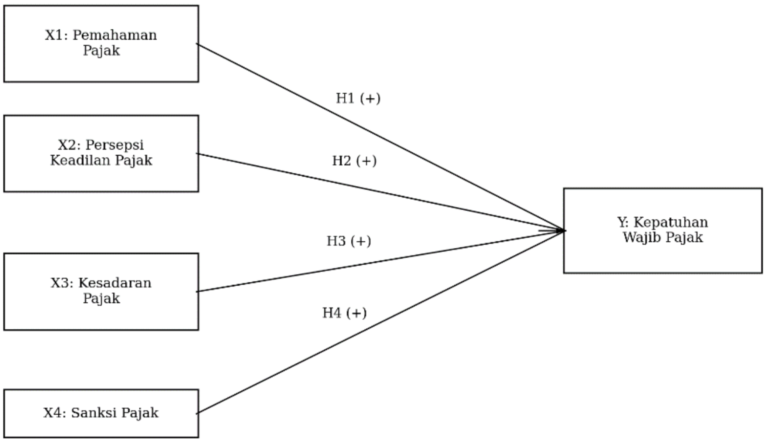

Figure 1. The Theoretical Framework

METHOD

This study employed a quantitative approach with a survey method to empirically test the relationship between variables (Creswell, 2018). Primary data were collected through a structured questionnaire distributed to MSME e-commerce actors in Jakarta between 2025 and 2026, through two channels: online distribution via Google Form disseminated through e-commerce seller community groups, WhatsApp and Telegram groups of digital MSME communities, and the Jakarta Entrepreneur (Jakpreneur) network fostered by the DKI Jakarta Provincial Office of Industry, Trade, Cooperatives, and Micro, Small, and Medium Enterprises; and offline distribution through printed questionnaires (Dinas PPKUKM Provinsi DKI Jakarta, 2024). The sampling technique used was purposive sampling with five criteria applied simultaneously (Sugiyono, 2019): (1) business domicile in DKI Jakarta Province; (2) classified as a Micro or Small enterprise under Government Regulation Number 7 of 2021; (3) possessing and actively using an e-commerce or marketplace account; (4) having operated the business for at least one year; and (5) registered as a taxpayer with a Tax Identification Number (NPWP), reflecting the material fulfillment of subjective and objective requirements as a taxpayer under the self-assessment principle in Article 2 of Law Number 16 of 2009 on General Provisions and Tax Procedures (Pemerintah Republik Indonesia, 2009).

Based on the guideline proposed by Roscoe (1975) and the common rule of ten times the number of indicators used in variance-based multivariate analysis, the minimum sample size required was 150 respondents, referring to fifteen indicators forming five research variables. A total of 279 questionnaires were initially collected. A two-stage screening process was subsequently conducted: the first stage eliminated 62 respondents who reported less than one year of business operation, and the second stage eliminated 45 respondents who had not yet registered for a Tax Identification Number, resulting in a final sample of 172 valid respondents. To further substantiate the adequacy of this sample size beyond conventional rules of thumb, a statistical power analysis was conducted following Cohen (1988). For a fixed multiple-regression model with four predictors, $\alpha = .05$, and a conventional power threshold of .80, the achieved sample of 172 respondents exceeds the 85 respondents required to detect a medium effect ($f^2 = 0.15$) and comfortably exceeds Green's (1991) recommended minimum of 82 respondents (50 + 8k, where k is the number of predictors) for testing the overall model. Post-hoc power calculations based on the effect sizes obtained in this study (reported in the Inner Model Evaluation sub-section) indicate that statistical power exceeded .99 for detecting the effects of Tax Sanctions ($f^2 = 0.167$) and Tax Awareness ($f^2 = 0.121$), and reached approximately .66 for the comparatively small effect of Tax Understanding ($f^2 = 0.033$); the negligible observed effect of Perceived Tax Fairness ($f^2 \approx 0.000$) corresponds to minimal statistical power to detect an effect of that magnitude, a pattern consistent with, rather than a limitation of, its non-significant path coefficient.

Each of the fifteen indicators was measured using two questionnaire statements, resulting in thirty items rated on a five-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree), adapted from previously validated research instruments (Hendrawati, 2025; Rosmawati, 2021; Napisah & Khuluqi, 2022; Solihat & Agus Santoso, 2024; Afiyah et al., 2024). Data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) with SmartPLS 4.0 software, following the stages of outer model evaluation (convergent validity, discriminant validity, and reliability), inner model evaluation (collinearity, coefficient of determination, model fit, effect size, and path coefficients), and hypothesis testing through a bootstrapping procedure with 5,000 subsamples (Hair et al., 2022).

RESULTS AND DISCUSSION

Respondent Description

Of the 279 questionnaires collected in the initial stage, a two-stage screening process eliminated 107 respondents (62 due to business duration below one year, 45 due to unregistered taxpayer status), resulting in 172 valid respondents used for further analysis.

Gender Distribution

The characteristics of respondents can be examined based on gender to provide adequate information regarding the demographic composition of the research subjects. The frequency distribution of respondents by gender is presented in Table 1. Table 1 shows that the majority of respondents were female, accounting for 96 respondents (55.8%), while male respondents numbered 76 (44.2%). This composition is consistent with the growing trend of women's participation in digital entrepreneurship in Indonesia, driven by the flexibility of online business models in accommodating women's dual roles in the domestic and economic spheres (Dewi, 2022). The dominance of female respondents is also consistent with the business cluster composition discussed in the following sub-section, given that culinary, fashion, and beauty-related businesses, which are commonly operated by women, constitute the majority of respondents' business types.

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Table 1. Gender Percentage Distribution

Gender	Total	Percentage
Male	76	44.2%
Female	96	55.8%

Business Cluster

Respondents' business types were classified into five clusters following the MSME classification adopted by the DKI Jakarta Provincial Office of Industry, Trade, Cooperatives, and Micro, Small, and Medium Enterprises. The distribution of respondents by business cluster is presented in Table 2. Table 2 shows that the Culinary cluster was the most dominant business category, accounting for 82 respondents (47.7%), followed by the Others cluster (34.9%), Fashion (12.8%), Handicraft and Creative Products (2.9%), and Beauty and Personal Care (1.7%). The dominance of the Culinary cluster is consistent with the general characteristics of digital Micro, Small, and Medium Enterprises in Indonesia, as food and beverage products typically involve a relatively low barrier to entry, affordable initial capital, and consistent market demand, making this sector the most favored among micro-scale online business actors (Nurmansyah et al., 2023). The considerable proportion of the Others category (34.9%) reflects that a substantial number of respondents described their business type in general terms, such as trading or retail, without specifying a particular product category, and could therefore not be coded into the four more specific clusters.

Table 2. Business Cluster Percentage Distribution

Category	Total	Percentage
Culinary	82	47.7%
Fashion	22	12.8%
Beauty and Personal Care	3	1.7%
Handicraft and Creative Products	5	2.9%
Others	60	34.9%

Business Duration

Business duration reflects the accumulated experience of MSME actors in operating their business and interacting with the tax administration system. The distribution of respondents by business duration is presented in Table 3. Table 3 shows that the majority of respondents, 83 (48.3%), had operated their business for 1 to 3 years, followed by those in operation for more than 5 years (27.3%) and 3 to 5 years (24.4%). This composition indicates that most respondents were in the early-to-intermediate stage of their business life cycle, a phase empirically identified as a critical period for the accumulation of business experience and stability (Sofianti et al., 2023). Businesses that have operated over a longer period are presumed to have encountered various operational challenges and developed a more mature understanding of administrative obligations, including tax compliance, compared to newly established businesses.

Table 3. Business Duration Percentage Distribution

Category	Total	Percentage
1-3 Years	83	48.3%
3-5 Years	42	24.4%
More than 5 Years	47	27.3%

Annual Turnover

Annual turnover is a particularly relevant characteristic for this study, given that the Final Income Tax scheme for Micro, Small, and Medium Enterprises in Indonesia is imposed based on gross turnover thresholds. The distribution of respondents by annual turnover is presented in Table 4. Table 4 shows that the majority of respondents, 116 (67.4%), reported an annual turnover below Rp500 million, which under prevailing tax regulations is exempted from the 0.5% Final Income Tax pursuant to Article 60 of the Tax Harmonization Law jo. Government Regulation Number 55 of 2022 as amended by Government Regulation Number 20 of 2026 (Pemerintah Republik Indonesia, 2022, 2026). Meanwhile, 54 respondents (31.4%) fell within the turnover range of Rp500 million to Rp4.8 billion and were therefore subject to the 0.5% Final Income Tax, while only 2 respondents (1.2%) exceeded Rp4.8 billion, a threshold that requires registration as a Taxable Entrepreneur under the general income tax rate. This distribution is consistent with the general structure of Micro, Small, and Medium Enterprises in Indonesia, which remains dominated by micro-scale enterprises (Direktorat Jenderal Pajak, 2024), and carries an important implication for the discussion of perceived tax fairness (H2) in a later section, given that the flat-rate final tax scheme applies uniformly regardless of individual profit margins, potentially diminishing the salience of fairness perceptions among taxpayers within this turnover bracket.

Table 4. Annual Turnover Percentage Distribution

Category	Total	Percentage
Below Rp500 Million	116	67.4%
Rp500 Million - Rp4.8 Billion	54	31.4%
Above Rp4.8 Billion	2	1.2%

Outer Model Evaluation

Convergent validity was assessed through outer loading and Average Variance Extracted (AVE). Based on Table 5, all fifteen indicators showed outer loadings between 0.849 and 0.930, well above the minimum threshold of 0.70, and all statistically significant based on bootstrapping (t-statistics > 29.7; $p < 0.001$). AVE values for the five constructs ranged from 0.793 to 0.843, exceeding the minimum threshold of 0.50 (Fornell & Larcker, 1981; Hair et al., 2022), confirming that convergent validity was fully satisfied. Discriminant validity was evaluated through three complementary approaches: the Fornell-Larcker Criterion, Cross Loading, and Heterotrait-Monotrait Ratio (HTMT). The Fornell-Larcker Criterion was satisfied for all five constructs, with the square root of AVE for each construct exceeding its correlation with other constructs. Cross loading analysis confirmed that all fifteen indicators loaded highest on their intended construct. For HTMT, this study applied a threshold of < 0.90, considering that the four independent variables are theoretically closely related as joint determinants of tax compliance within Compliance Theory (Kirchler, 2007). Six of ten construct pairs satisfied this threshold directly, while four pairs involving the Tax Sanctions construct exceeded 0.90 based

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on point estimates; however, all ten pairs showed a 97.5% confidence interval upper bound below 1 (Henseler et al., 2015), supporting the conclusion that discriminant validity was adequately established overall. Reliability was evaluated through Cronbach's Alpha and Composite Reliability. Cronbach's Alpha values ranged from 0.869 to 0.907, categorized as good to excellent, while Composite Reliability (rho_c) values ranged from 0.920 to 0.942, within the ideal range of 0.70-0.95 without indication of item redundancy (Hair et al., 2022). Table 5 summarizes the outer model evaluation results.

Table 5. Summary of Outer Model Evaluation

Construct	Outer Loading Range	AVE	Cronbach's Alpha	Composite Reliability
Tax Understanding (X1)	0.882 - 0.908	0.803	0.877	0.924
Perceived Tax Fairness (X2)	0.849 - 0.913	0.793	0.869	0.920
Tax Awareness (X3)	0.886 - 0.930	0.837	0.902	0.939
Tax Sanctions (X4)	0.876 - 0.926	0.814	0.885	0.929
Taxpayer Compliance (Y)	0.914 - 0.925	0.843	0.907	0.942

Inner Model Evaluation

Collinearity testing (VIF) on the inner model showed values between 2.998 and 4.393 for the four predictor constructs, all below the threshold of 5.0, indicating no serious multicollinearity issue (Hair et al., 2022). The Tax Sanctions construct showed the highest VIF (4.393), consistent with its relatively high HTMT values noted above. The R-square value for taxpayer compliance was 0.747 (adjusted R-square = 0.741), indicating that the four independent variables jointly explain 74.7% of the variance in taxpayer compliance, a value close to the substantial category ($R^2 = 0.75$) in social science research and considerably exceeding the 0.30-0.60 range typically regarded as adequate in accounting and taxation research. Model fit, evaluated through SRMR, showed a value of 0.055 for both the saturated and estimated models, well below the 0.08 threshold for good fit (Hair et al., 2022). Effect size (F-square) analysis, using conventional thresholds of 0.02 (small), 0.15 (medium), and 0.35 (large) (Cohen, 1988), showed that Tax Sanctions contributed the largest unique effect ($f^2 = 0.167$, medium category), followed by Tax Awareness ($f^2 = 0.121$, small-to-medium category) and Tax Understanding ($f^2 = 0.033$, small category), while Perceived Tax Fairness showed negligible contribution ($f^2 = 0.000$).

Hypothesis Testing

Path coefficients were tested through a bootstrapping procedure with 5,000 subsamples, with a hypothesis considered supported when the path coefficient direction matched the hypothesized direction (positive) and was statistically significant (t-statistic > 1.96 or p-value < 0.05). Table 6 summarizes the results.

Table 6 Path Coefficients and Hypothesis Testing Results

Hypothesis	Path	Coefficient	T-Statistic	P-Value	Result
H1	Tax Understanding -> Taxpayer Compliance	0.174	2.295	0.022	Supported

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Hypothesis	Path	Coefficient	T-Statistic	P-Value	Result
H2	Perceived Tax Fairness -> Taxpayer Compliance	-0.015	0.169	0.866	Not Supported
H3	Tax Awareness -> Taxpayer Compliance	0.329	2.779	0.005	Supported
H4	Tax Sanctions -> Taxpayer Compliance	0.431	3.328	0.001	Supported

DISCUSSION

Tax Understanding showed a positive and significant effect on taxpayer compliance ($\beta = 0.174$; $t = 2.295$; $p = 0.022$; H1 supported), consistent with the internal-factor pathway of Compliance Theory (Kirchler, 2007), which holds that cognitive competence in navigating tax obligations lowers the perceived cost of compliant behavior. This result aligns with prior findings on Indonesian MSME taxpayers (Afiyah et al., 2024; Maesyarah et al., 2025) and with evidence that tax literacy strengthens the relationship between tax authority power and compliance (Anisykurlillah et al., 2024). Taxpayers who comprehend applicable tax rules, calculation procedures, and reporting requirements face fewer administrative barriers to fulfilling their obligations correctly. However, with an effect size of $f^2 = 0.033$ (small category), Tax Understanding contributed the smallest unique variance among the three significant determinants, well below Tax Sanctions ($f^2 = 0.167$) and Tax Awareness ($f^2 = 0.121$). This comparatively modest contribution is plausibly related to the turnover profile of the sample: 67.4% of respondents reported an annual turnover below Rp500 million and were therefore exempt from the 0.5% Final Income Tax, facing a relatively simple reporting obligation that may require less technical understanding to fulfil correctly than would be the case for taxpayers closer to or above the taxable threshold. Among e-commerce Micro, Small, and Medium Enterprises that have already registered as taxpayers, tax understanding thus appears to function as a necessary but not sufficient condition for compliance, complementing rather than substituting for the enforcement- and awareness-based pathways discussed below.

Perceived Tax Fairness showed no significant effect on taxpayer compliance (H2 not supported), a finding that contradicts the fairness-trust pathway typically assumed within the Slippery Slope Framework (Kirchler, 2007) but is consistent with a growing body of evidence on MSME taxpayers subject to turnover-based final tax schemes. Annisa and Wijaya (2024), studying Micro, Small, and Medium Enterprises in Jakarta using PLS-SEM, similarly found tax fairness to be non-significant, attributing this to the flat-rate Final Income Tax scheme based on gross turnover, which does not account for actual profit and is therefore perceived uniformly regardless of individual profitability. This pattern is corroborated internationally: Azaka and Balogun (2022) found perceived fairness not a significant predictor among Nigerian SME owners despite a positive correlation; Muniroh (2023) found a positive but non-significant fairness effect among Micro, Small, and Medium Enterprises in Rembang; Anisykurlillah et al. (2024), applying the Slippery Slope Framework via PLS-SEM, found that both coercive power and perceived fairness did not influence compliance; and Rahayu et al. (2025), analyzing 349 Indonesian SME owners via PLS-SEM, similarly found fairness perception statistically non-significant. The convergence of these findings across countries and methods suggests that the role of tax fairness as a direct compliance determinant may be attenuated under simplified, flat-rate tax schemes designed specifically for Micro, Small, and Medium Enterprises.

Tax Awareness showed a positive and significant effect on taxpayer compliance ($\beta = 0.329$; $t = 2.779$; $p = 0.005$; H3 supported), the second-largest coefficient among the four

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determinants and corresponding to a small-to-medium effect size ($f^2 = 0.121$). This result is consistent with Yuliani et al. (2024) and reflects the internalization of tax obligations as moral and social responsibility rather than mere administrative compliance, a pathway that Compliance Theory associates with the trust dimension of the Slippery Slope Framework and with voluntary rather than enforced compliance (Kirchler, 2007). Unlike Tax Understanding, which primarily reduces the technical cost of compliance, Tax Awareness appears to operate through a motivational mechanism that does not depend on taxpayers' calculation or reporting skills. This is consistent with the respondent profile of this study: because taxpayer registration (NPWP) was itself a purposive sampling criterion, all 172 respondents had already undertaken a voluntary act of formal registration prior to participating, a decision that plausibly reflects a baseline level of tax awareness exceeding that of the broader, unregistered e-commerce MSME population. That Tax Awareness remains a strong determinant even within this already self-selected sample suggests that awareness continues to differentiate compliance behavior among taxpayers who share a similar baseline willingness to engage with the tax system, lending support to the view that moral and social internalization operates as a distinct driver of compliance rather than merely a precondition for registration.

Tax Sanctions showed the strongest positive and significant effect on taxpayer compliance ($\beta = 0.431$; $t = 3.328$; $p = 0.001$; H4 supported), with the largest effect size among the four determinants ($f^2 = 0.167$, medium category), directly confirming the classical deterrence model of Allingham and Sandmo (1972), which predicts that the deterrent effect of sanctions is a function of detection probability multiplied by penalty severity. This finding is consistent with Solihat and Agus Santoso (2024) and Yuliani et al. (2024), who similarly report tax sanctions as a leading determinant of compliance among Indonesian individual and MSME taxpayers. The relative dominance of Tax Sanctions over Tax Understanding is noteworthy: whereas understanding requires taxpayers to actively acquire and apply technical knowledge, the deterrent effect of sanctions operates largely independently of a taxpayer's technical capacity, requiring only that enforcement be perceived as sufficiently clear and firmly applied. On balance, these results indicate that taxpayer compliance among e-commerce Micro, Small, and Medium Enterprises in Jakarta is currently shaped more by enforced compliance mechanisms than by purely voluntary compliance pathways, although the significant, if smaller, effects of Tax Understanding and Tax Awareness confirm that voluntary compliance pathways remain relevant and should not be neglected in policy design. Within Compliance Theory's dual framework, this pattern suggests that the power dimension currently outweighs the trust dimension in this specific population, a balance that reforms strengthening taxpayer trust and administrative fairness may help shift over time.

CONCLUSION AND RECOMMENDATION

This study analyzed the effect of tax understanding, perceived tax fairness, tax awareness, and tax sanctions on taxpayer compliance among 172 e-commerce Micro, Small, and Medium Enterprises registered as taxpayers in Jakarta, using PLS-SEM. The results show that tax understanding, tax awareness, and tax sanctions have a positive and significant effect on taxpayer compliance, with tax sanctions as the strongest determinant, followed by tax awareness and tax understanding, while perceived tax fairness shows no significant effect. Together, the four variables explain 74.7% of the variance in taxpayer compliance.

These findings support and extend Compliance Theory (Kirchler, 2007) and the classical deterrence model of Allingham and Sandmo (1972) in the context of e-commerce Micro, Small, and Medium Enterprises subject to a turnover-based Final Income Tax scheme, while indicating that the fairness-trust pathway requires further theoretical refinement in this specific context. Practically, these findings suggest that the Directorate General of Taxes and

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related institutions, such as the DKI Jakarta Provincial Office of Industry, Trade, Cooperatives, and Micro, Small, and Medium Enterprises, may benefit from strengthening consistent sanction enforcement alongside sustained tax awareness education, without necessarily discontinuing fairness-oriented communication, in efforts to support MSME taxpayer compliance. Because the cross-sectional design of this study precludes causal inference, these practical implications should be treated as provisional and would benefit from confirmation through longitudinal or experimental research before being adopted as policy. MSME actors are encouraged to actively improve their understanding of applicable tax provisions and to view tax payment as a contribution to national development. This study is limited to e-commerce Micro, Small, and Medium Enterprises domiciled in Jakarta and to four independent variables, so findings cannot be generalized to all Micro, Small, and Medium Enterprises in Indonesia. Future research is recommended to expand the study area, incorporate additional variables such as trust in government, tax morale, or ease of Coretax system use, apply mediation or moderation models, and consider mixed-methods approaches to obtain a more comprehensive understanding of MSME taxpayer compliance behavior.

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