

Tax knowledge, taxpayer awareness, and NPWP compliance among MSME operators: Evidence from Kalawat District, North Minahasa Regency

Ananda Fadillah Tiwidjono

Corresponding author:

anandatiwidjono@gmail.com

Sam Ratulangi University
Indonesia

Harijanto Sabijono

Sam Ratulangi University
Indonesia

Priscillia Weku

Sam Ratulangi University
Indonesia

Received 8 September 2026

Revised 9 October 2026

Accepted 11 October 2026

Published online 12 October 2026

DOI: 10.58784/cfabr.512

ABSTRACT

Low registration of Taxpayer Identification Numbers (NPWP) among Micro, Small, and Medium Enterprises (MSMEs) remains a persistent barrier to tax compliance in Indonesia. Existing evidence on the behavioral antecedents of MSME compliance is largely drawn from major cities, while district-level evidence from regional economies is scarce. Drawing on the Theory of Planned Behavior, this study examines the effects of tax knowledge and taxpayer awareness on the compliance of MSME operators in Kalawat District, North Minahasa Regency, the district with the highest concentration of MSMEs in the regency (732 business units). A quantitative associative design was employed. Primary data were collected through a structured questionnaire administered to 88 MSME operators, with the sample size determined using the Slovin formula and respondents selected through purposive sampling. The data were analyzed using multiple linear regression in SPSS version 27. The results show that tax knowledge and taxpayer awareness each have a positive and significant effect on MSME operators' compliance, and that both variables jointly explain compliance significantly. Taxpayer awareness has the larger relative contribution. These findings suggest that compliance among MSME operators depends not only on knowing tax rules but, more strongly, on the willingness to comply voluntarily. The study therefore recommends that tax authorities and local governments pair tax education with efforts to build taxpayer awareness, including NPWP registration assistance targeted at MSMEs. The findings are limited to one district and a modest sample, so generalization should be made with caution.

Keywords: tax knowledge; taxpayer awareness; MSME operators' compliance; taxpayer identification number (NPWP), tax compliance

JEL Classification: H26; M41

©2026 Ananda Fadillah Tiwidjono, Harijanto Sabijono, Priscillia Weku



This work is licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/).

1. Introduction

Tax is the main source of state revenue used to finance various development needs. Nearly all government activities,

such as the construction of roads, bridges, hospitals, schools, and other public facilities, are financed from taxes paid by the public. Tax plays a fairly important

role in Indonesia's economic sector because it contributes substantially to the State Budget (APBN) and constitutes the largest source of revenue (Kharisma, 2023). The government continues to optimize tax revenue as a source of state income; tax revenue in the 2025 fiscal-year budget is targeted to reach Rp2,490.0 trillion, or approximately 10.24% of GDP (Kementerian Keuangan Republik Indonesia, 2025).

In the Indonesian economy, one contributor to state revenue is Micro, Small, and Medium Enterprises (MSMEs). According to Law No. 20 of 2008, MSMEs are types of businesses run by individuals or business entities, playing an important role in creating employment, expanding economic services for the public, improving welfare through income, driving economic growth, and maintaining social and economic stability (Handoko and Ladepi, 2025). The MSME sector accounts for 99% of total business units in Indonesia, contributing 60.51% to national Gross Domestic Product (GDP) and absorbing around 97% of the total workforce in Indonesia (Kementerian UMKM, 2025).

One factor influencing MSME tax compliance is Tax Knowledge. Many MSME operators lack sufficient knowledge of their tax obligations, whether regarding the type of tax to be levied, the process and method of calculation, or the correct reporting mechanism. The procedures for fulfilling tax obligations are also considered complicated by many MSME operators, many of whom are not fully aware of the importance of tax, its function for national development, or the applicable tax system, including registration for a Taxpayer Identification Number (NPWP), calculation of tax payable, and online reporting procedures through the Coretax system (Situmorang, 2025). Tax knowledge is the basic knowledge that every taxpayer must possess, both

regarding tax law and related regulations; with good tax knowledge, taxpayers tend to have a more positive attitude toward tax and are more likely to be obedient and compliant in fulfilling their tax obligations.

Taxpayer awareness is also a factor influencing taxpayer compliance, particularly among MSME operators. A taxpayer who knows, understands, and is willing to voluntarily comply with tax regulations is an aware taxpayer (Zebua and Putra, 2025). This awareness plays an important role in encouraging compliance, because an aware taxpayer understands the function of tax and believes that tax fully supports national development. However, many MSME operators feel that tax is a burdensome obligation, which ultimately lowers their awareness of fulfilling tax obligations (Afiyah et al., 2024); taxpayers regard tax merely as a burden and worry that tax payments will be misused by related parties, even though tax is an obligation that must be fulfilled by taxpayers to increase state revenue and equalize development carried out by the state.

The Taxpayer Identification Number is a number assigned to taxpayers as a tool in tax administration, used as an identification mark for taxpayers in exercising their tax rights and obligations. Every taxpayer who has met the subjective and objective requirements under applicable tax law and regulations must register with the Directorate General of Taxes office whose working area covers their residence, domicile, or place of business, and is then issued a Taxpayer Identification Number (Mardiasmo, 2024). According to the Directorate General of Taxes, Ministry of Finance (2020), to properly carry out their tax obligations, MSMEs must first obtain an NPWP. NPWP ownership is also one indicator of tax compliance, particularly for MSME operators; the NPWP not only serves as the taxpayer's initial identity but also

facilitates the taxpayer in carrying out all their tax obligations, as it is a key requirement in every tax-administration process.

Field phenomena show that many MSME operators still consider NPWP registration to be difficult and time-consuming, so they prefer not to fulfill their tax obligations rather than spend a long time at the tax office waiting for their registration to be processed. This problem is consistent with the study of Wahang et al. (2026), which states that many MSME operators still lack an NPWP, whether due to insufficient tax information, low awareness, or the perception that tax should not become an additional burden that could reduce their income. According to Palupi and Arifin (2023), the Director General of Taxes at the Ministry of Finance revealed that only around 2.3 million of approximately 67 million MSMEs in Indonesia have obtained an NPWP. The study by Lolowang et al. (2024) provides a more specific picture: the level of MSME taxpayer compliance at KPP Pratama Manado during the 2021–2023 period ranged only between 5% and 9%, a deeply concerning figure given the substantial contribution of MSMEs to the economy of Manado City. One of the main obstacles hindering the development of business operators is their non-compliance regarding tax administration, particularly in the making and registration of NPWP (Kementerian UMKM, 2025).

Kalawat District is the area with the highest number of MSMEs in North Minahasa Regency. Data from the North Minahasa Regency Manpower, Cooperatives, and Small and Medium Enterprises Office for 2026 show that the number of MSMEs in Kalawat District reaches 732 business units spread across 12 villages, well above the next-highest district in the regency; the complete village-level breakdown is presented in Table 1. This concentration of MSME activity indicates that Kalawat District

dominates micro, small, and medium business activity in the regency, signaling considerable economic potential from both an entrepreneurial and business-development standpoint and establishing Kalawat as a substantively appropriate setting for examining MSME tax-compliance behavior.

To determine the level of MSME operator compliance regarding NPWP ownership, a pre-survey was conducted through a questionnaire distributed to 30 MSME operator respondents in Kalawat District. The pre-survey results show that 73.3% of MSME operators do not yet have an NPWP, while the remaining 26.7% already have one. This non-compliance is largely caused by insufficient knowledge of NPWP registration procedures, as well as the perception that their relatively small income means they do not yet feel the need for an NPWP. This indicates that the tax knowledge and awareness of MSME operators regarding NPWP compliance remain fairly low. It should be noted that this pre-survey figure differs from the NPWP-ownership proportion subsequently observed in the main survey of 88 respondents, in which 69.3% already held an NPWP (see Section 4.1). The two figures are not directly comparable: the pre-survey used a small, non-random convenience sample ($n = 30$) solely to obtain an initial field indication that motivated further investigation, whereas the main survey drew a purposive sample covering all 12 villages in the district. The discrepancy is therefore read as evidence of the pre-survey's limited representativeness rather than an actual shift in the underlying compliance condition between the two data-collection points, and it underscores why a more rigorous, purposively sampled main study — rather than the pre-survey alone — is needed to draw conclusions about the district's compliance level.

Prior studies on this topic show mixed results. Wahang et al. (2026) found that

many MSME operators still lack an NPWP because of low understanding of tax regulations and mechanisms and low awareness driven by the perception that tax reduces income. Using a comparable associative design, Rasmon et al. (2023) tested tax understanding, NPWP ownership, and taxpayer awareness on MSME compliance at KPP Pratama Pekanbaru Senapelan and found that tax understanding has a positive but insignificant effect on compliance, that NPWP ownership does not affect MSME compliance, and that taxpayer awareness has no significant effect on MSME compliance. Imran (2026) likewise found that MSME taxpayer compliance remains low because NPWP ownership has not yet effectively encouraged compliance, driven by low tax understanding, insufficient awareness, and the perception that NPWP is purely administrative. These two closest prior studies thus converge on a null or weak role for tax understanding and awareness in a different regional context, which contrasts with the positive and significant effects more commonly reported elsewhere (e.g., Siregar et al., 2025; Putri & Trisnaningsih, 2023). This variation signals a conceptual, not merely geographic, research gap: whether tax knowledge and taxpayer awareness meaningfully predict MSME compliance appears to depend on contextual and regional conditions that remain unresolved in the literature. Accordingly, this study seeks to help resolve this inconsistency by renewing the test of these two antecedents in Kalawat District — a high-MSME-density district not previously examined — rather than merely extending prior findings to a new location.

Based on this background, this study aims to analyze the effect of Tax Knowledge and Taxpayer Awareness, both partially and simultaneously, on the Compliance of MSME Operators in Kalawat District, North Minahasa Regency. Specifically, the study addresses

the following research questions: (1) does Tax Knowledge have a positive and significant effect on MSME Operators' Compliance; (2) does Taxpayer Awareness have a positive and significant effect on MSME Operators' Compliance; and (3) do Tax Knowledge and Taxpayer Awareness simultaneously have a positive and significant effect on MSME Operators' Compliance in Kalawat District, North Minahasa Regency.

2. Literature review

Theory of planned behavior

The Theory of Planned Behavior (TPB), developed by Ajzen (1991) as an extension of the Theory of Reasoned Action, originates in social psychology and aims to predict and explain human behavior in specific contexts, assuming that individuals are rational beings who consider the implications of their actions before deciding whether or not to perform a given behavior (Agassy and Tanno, 2024). According to Agassy and Tanno (2024), individual behavior is shaped by behavioral intention, which is influenced by three main factors: attitude toward the behavior (an individual's positive or negative evaluation of performing a behavior, formed from beliefs about its consequences); subjective norms (an individual's perception of social pressure from important others to perform or not perform a behavior, related to normative beliefs); and perceived behavioral control (an individual's perception of the ease or difficulty of performing a behavior, based on experience). These three factors together form the intention that ultimately manifests in actual behavior. In the context of MSME tax compliance, TPB provides a psychological framework for tax-compliance behavior: tax knowledge can shape MSME operators' positive attitude toward the importance of NPWP through understanding of tax functions, benefits, and provisions — operating primarily through perceived behavioral control by

increasing an operator's confidence in their capacity to fulfil tax procedures correctly — while taxpayer awareness reflects an individual's intention or willingness to voluntarily carry out their tax obligations through attitude and subjective norms, as a positive attitude and sense of responsibility toward tax compliance (Agassy and Tanno, 2024).

Tax compliance and NPWP ownership

Taxpayer compliance is a condition in which a taxpayer fulfills all their tax obligations and exercises their tax rights in accordance with applicable tax laws and regulations, reflected in the taxpayer's awareness to register, calculate, pay, remit, and report tax correctly, completely, and on time without coercion from any other party (Mardiasmo, 2024). MSME compliance as a taxpayer is important not only from the perspective of fulfilling legal obligations but also carries a broad impact on business professionalism, economic fairness, and the sustainability of state revenue; when MSMEs are registered and active in the tax system, they gain greater trust from consumers, business partners, and financial institutions, as they are considered legal and transparent (Fajar et al., 2025). The Taxpayer Identification Number (NPWP) is a number issued to a taxpayer as an administrative tool that serves as the taxpayer's identity in exercising their tax rights and obligations (Mardiasmo, 2024); for MSME operators, NPWP ownership is considered important as a mark of legal business identity.

Tax knowledge

Tax knowledge is a taxpayer's ability to understand applicable tax provisions, covering basic concepts, tax rights and obligations, the function of tax, and the tax procedures that must be fulfilled by the taxpayer so that tax obligations can be carried out correctly and on time (Nengsih, et al., 2025). Tax knowledge is the basic

knowledge that every taxpayer must possess, both regarding tax law and related regulations; with good tax knowledge, a taxpayer tends to be more obedient and compliant in their tax obligations, and tax knowledge encompasses the information used as a basis for taking action (Anto et al., 2021).

Taxpayer awareness

Taxpayer awareness is a condition in which a taxpayer has understanding, willingness, and a positive attitude toward tax voluntarily, as an important contribution to state financing and community development (Mardiasmo, 2024). Taxpayer awareness is a condition in which a taxpayer knows, understands, and carries out tax provisions correctly without coercion from any party (Permana & Hidayat, 2022); it is the felt intention of the taxpayer regarding their tax obligation to contribute to the state without coercion and without expecting direct reward, including a willingness to contribute in the form of tax payment (Andaningsih et al., 2022).

Hypotheses

Based on the Theory of Planned Behavior, attitude and perceived behavioral control can reflect compliance: the better a taxpayer's tax knowledge, the more positive their attitude and understanding of tax obligations, which tends to encourage greater compliance. Purba et al. (2023) found that taxpayers' knowledge of tax regulations can increase their level of compliance, and this is consistent with Siregar et al. (2025), whose regression analysis found that tax knowledge has a positive and significant effect on MSME taxpayer compliance, and with Yanti and Wijaya (2023), who found that tax knowledge has a positive and significant effect on MSME taxpayer compliance. Based on this reasoning, the first hypothesis is proposed:

H1: Tax Knowledge has a positive and significant effect on the Compliance of MSME Operators in Kalawat District, North Minahasa Regency.

The Theory of Planned Behavior (Ajzen, 1991) links taxpayer awareness with attitude toward the behavior (in this case, tax compliance): a positive attitude and belief that voluntarily fulfilling tax obligations is important in contributing to the state, without coercion and without expecting direct reward. This is consistent with the findings of Putri and Trisnaningsih (2023), who found that taxpayer awareness has a positive and significant effect on MSME taxpayer compliance, and Siregar et al. (2025), who found that taxpayer awareness has a positive and significant effect on MSME tax compliance. Based on this reasoning, the second hypothesis is proposed:

H2: Taxpayer Awareness has a positive and significant effect on the Compliance of MSME Operators in Kalawat District, North Minahasa Regency.

Under the Theory of Planned Behavior, behavior is influenced by multiple interacting factors that jointly have a positive effect; it is presumed that the higher a taxpayer's tax knowledge and awareness, the greater their tendency toward compliant behavior. This is consistent with Siregar et al. (2025), whose F-statistic results show that tax knowledge and taxpayer awareness simultaneously have a positive and significant effect on MSME taxpayer compliance, defining the two variables as complementary factors in encouraging tax compliance, particularly among MSME operators. Based on this reasoning, the third hypothesis is proposed:

H3: Tax Knowledge and Taxpayer Awareness simultaneously have a positive and significant effect on the Compliance of MSME Operators in Kalawat District, North Minahasa Regency.

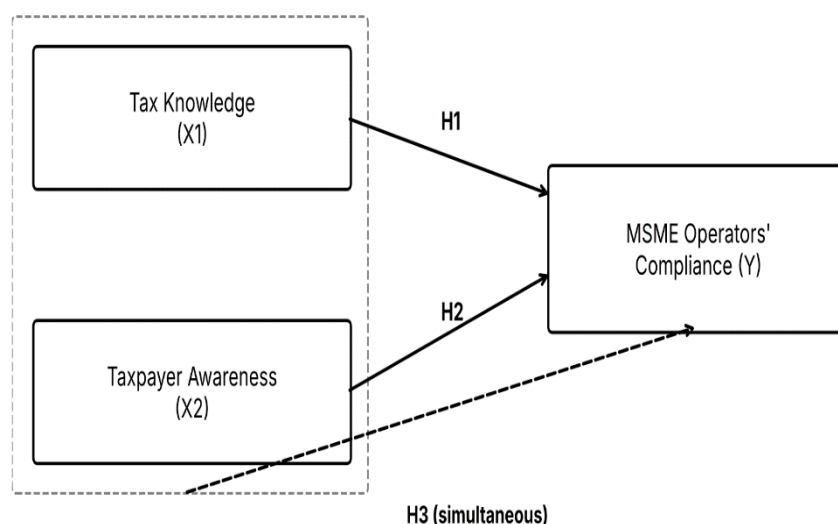


Figure 1. Conceptual framework

Note: solid arrows = partial (H1, H2) effect; dashed arrow = simultaneous (H3) effect.

3. Research method

This study uses a quantitative approach with an associative research design, aimed at determining the effect between two or more variables that can be measured numerically and analyzed using statistical techniques (Sugiyono, 2023). The quantitative approach was chosen because the study aims to measure, statistically and objectively, the effect of tax knowledge and taxpayer awareness on the compliance of MSME operators in Kalawat District, North Minahasa Regency. The associative design was used to test the formulated hypotheses and to measure the magnitude

of the effect of the independent variables, Tax Knowledge (X_1) and Taxpayer Awareness (X_2) on the dependent variable, MSME Operators' Compliance (Y). The research was conducted in Kalawat District, North Minahasa Regency, during 2026.

The population comprises all MSME operators in Kalawat District. Based on 2026 data from the North Minahasa Regency Manpower, Cooperatives, and Small and Medium Enterprises Office, 732 MSMEs are registered and operating across 12 villages/sub-districts in Kalawat District, as presented in Table 1.

Table 1. MSME data for Kalawat District, 2026

No	Village	Number of MSMEs
1	Kalawat	58
2	Kaleosan	5
3	Kawangkoan	49
4	Kawangkoan Baru	93
5	Kolongan	73
6	Kolongan Tetempangan	83
7	Kuwil	9
8	Maumbi	74
9	Suwaan	38
10	Watutumou	180
11	Watutumou II	34
12	Watutumou III	36
Total		732

Source: North Minahasa Regency Manpower, Cooperatives, and SME Office (2026)

The sampling technique used was purposive sampling, based on the criteria that respondents (1) operate an MSME domiciled or operating in Kalawat District, (2) have an active business, and (3) are the owner or person directly responsible for the business's tax matters. NPWP status was intentionally left unrestricted across these criteria, by design, so that both

NPWP holders and non-holders would be represented in the sample; the resulting composition is reported in Section 4.1. The sample size was determined using the Slovin formula with a 10% margin of error:

$$n = N / (1 + N(e)^2)$$

With $N = 732$ (total MSMEs in Kalawat District) and $e = 10\%$ (0.1), the

calculation yields $n = 732 / (1 + 732 \times 0.1^2) = 732 / 8.32 = 87.98$, rounded to 88 respondents, who constitute the final sample. A 10% margin of error was adopted, rather than the more commonly recommended 5%, because of practical constraints on data-collection time and respondent access within a single district during the study period; this choice yields a less precise estimate than a 5% margin would, and the resulting precision trade-off is acknowledged as a limitation.

This study uses primary data obtained through an online questionnaire measured on a five-point Likert scale, distributed to respondents regarding the research variables: Tax Knowledge (X_1) and

Taxpayer Awareness (X_2) as independent variables, and MSME Operators' Compliance (Y) as the dependent variable. Because all variables were measured through a single, self-reported questionnaire completed at one point in time, the design is potentially subject to common method bias and social-desirability bias, particularly for the compliance measure; to mitigate this, respondents were assured of anonymity and the confidentiality of their responses when completing the questionnaire, and this remains an acknowledged limitation. The operationalization of each variable is summarized in Table 2.

Table 2. Variable operationalization and indicators

Variable	Definition	Indicators
Tax Knowledge (X_1)	A taxpayer's ability to understand applicable tax provisions, covering basic concepts, rights and obligations, the function of tax, and required procedures (Nengsih et al., 2025).	Knowledge of basic tax concepts; knowledge of the function and benefits of tax; knowledge of NPWP; knowledge of the correct procedure for fulfilling tax obligations (Susmiatun and Kusmuriyanto, 2014).
Taxpayer Awareness (X_2)	A condition in which the taxpayer knows, understands, and voluntarily fulfills tax provisions correctly (Anto et al., 2021).	Awareness of the importance of tax for the state; positive attitude toward tax; willingness to voluntarily fulfill tax obligations; awareness of registering as a taxpayer (Madjodjo & Baharuddin, 2022).
MSME Operators' Compliance (Y)	A condition in which the taxpayer fulfills all tax obligations and exercises their tax rights (Wicaksono et al., 2022).	Compliance in NPWP ownership; compliance in obeying tax regulations; compliance in fulfilling tax obligations on time; compliance in carrying out tax responsibilities (Kumalaningrum and Widhiastuti, 2023).

Source: Processed data (2026)

Instrument testing consisted of validity testing using Pearson product-moment correlation (an item is valid if $r\text{-count} > r\text{-table}$ at the 5% significance level) and reliability testing using Cronbach's Alpha (an instrument is reliable if $\alpha \geq 0.70$). Data

analysis employed classical assumption tests normality (Kolmogorov-Smirnov test, with data normally distributed if significance > 0.05), multicollinearity (tolerance and Variance Inflation Factor [VIF]; no multicollinearity if $VIF < 10$ and

tolerance > 0.10), and heteroscedasticity (Glejser test; no heteroscedasticity if significance > 0.05) — followed by multiple linear regression analysis. The regression model is specified as:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \varepsilon$$

where Y = MSME Operators' Compliance, X_1 = Tax Knowledge, X_2 = Taxpayer Awareness, α = constant, β_1 and β_2 = regression coefficients, and ε = error term. Hypotheses were tested through the partial test (t-test), the simultaneous test (F-test), and the coefficient of determination (R^2), all processed using SPSS version 27.

4. Result and discussion

Results

Respondent characteristics

Of the 88 respondents, the majority were female (68 respondents, 77.3%) compared with male (20 respondents, 22.7%). By age, most respondents (80 respondents, 90.9%) were ≥ 18 years old, while 8 respondents (9.1%) were under 18; the under-18 respondents are family members who assist in the day-to-day operation of a parent's or relative's already-registered MSME and who

completed the questionnaire regarding that business's tax practices rather than in their own individual capacity as registered taxpayers, consistent with common practice in family-run micro-enterprises in the district. No individually identifying or sensitive data were collected from these respondents beyond their perception of the household business's tax knowledge, awareness, and compliance, and participation was voluntary and anonymous for all respondents. By business duration, most respondents (57 respondents, 64.8%) had operated their business for 1–3 years, followed by 4–5 years (15 respondents, 17%), less than 1 year (12 respondents, 13.6%), and more than 5 years (4 respondents, 4.5%). By NPWP ownership, 61 respondents (69.3%) already had an NPWP, while 27 respondents (30.7%) did not yet have one — indicating that most MSME operators surveyed were already registered taxpayers, consistent with the sample criteria and relevant to examining tax knowledge and taxpayer awareness in relation to compliance. Table 3 summarizes these characteristics.

Table 3. Summary of respondent characteristics

Characteristic	Category	Frequency	Percentage
Sex	Female	68	77.3%
	Male	20	22.7%
Age	< 18 years	8	9.1%
	≥ 18 years	80	90.9%
Business duration	< 1 year	12	13.6%
	1–3 years	57	64.8%
	4–5 years	15	17.0%
	> 5 years	4	4.5%
NPWP ownership	Already have NPWP	61	69.3%
	Not yet have NPWP	27	30.7%
Total		88	100%

Source: Processed data (2026)

Validity and reliability tests

Validity testing using Pearson product-moment correlation shows that all 12 items measuring Tax Knowledge (r-count ranging from 0.571 to 0.863), all 12 items measuring Taxpayer Awareness (r-count ranging from 0.523 to 0.762), and all 11 items measuring MSME Operators'

Compliance (r-count ranging from 0.579 to 0.802) exceed the r-table value of 0.1765 at the 5% significance level, confirming that all items are valid. Reliability testing using Cronbach's Alpha, presented in Table 4, shows that all variables exceed the 0.70 threshold, confirming that the instrument is reliable.

Table 4. Reliability test results

Variable	Items	Cronbach's Alpha	Conclusion
Tax Knowledge (X ₁)	12	0.928	Reliable
Taxpayer Awareness (X ₂)	12	0.889	Reliable
MSME Operators' Compliance (Y)	11	0.908	Reliable

Classical assumption tests

Table 5 summarizes the classical assumption test results. The Kolmogorov-Smirnov test yields an Asymp. Sig. (2-tailed) of 0.200 and a Monte Carlo Sig. (2-tailed) of 0.915, both exceeding 0.05, confirming that the residuals are normally distributed. Both independent variables

have a tolerance of 0.424 (> 0.10) and a VIF of 2.356 (< 10), indicating no multicollinearity. The Glejser test yields significance values of 0.937 for Tax Knowledge and 0.988 for Taxpayer Awareness (both > 0.05), indicating no heteroscedasticity.

Table 5. Summary of classical assumption tests

Test	Criterion	Result	Conclusion
Normality (Kolmogorov-Smirnov)	Asymp. Sig. > 0.05	0.200 / 0.915 (Monte Carlo)	Normal
Multicollinearity	Tolerance > 0.10 ; VIF < 10	0.424; 2.356	None
Heteroscedasticity (Glejser)	Sig. > 0.05	0.937; 0.988	None

Multiple linear regression and hypothesis testing

The results of the multiple linear regression, including standardized (Beta)

coefficients, and the partial significance test (t-test) are presented in Table 6.

Table 6. Multiple linear regression and t-test results

Variable	B	Beta	t	t-table	Sig.	Conclusion
(Constant)	11.070	—	—	—	—	—
Tax Knowledge (X ₁)	0.223	0.303	2.794	1.663	0.006	H ₁ accepted
Taxpayer Awareness (X ₂)	0.489	0.503	4.634	1.663	0.001	H ₂ accepted

Dependent variable: MSME Operators' Compliance (Y)

Based on Table 6, the regression equation is $Y = 11.070 + 0.223X_1 + 0.489X_2$. The constant of 11.070 indicates that if Tax Knowledge and Taxpayer Awareness are assumed to be zero, MSME Operators' Compliance is 11.070. The coefficient of 0.223 for X₁ indicates that a one-unit increase in Tax Knowledge raises MSME Operators' Compliance by 0.223 units, while the coefficient of 0.489 for X₂ indicates that a one-unit increase in Taxpayer Awareness raises MSME Operators' Compliance by 0.489 units. Because Tax Knowledge and Taxpayer Awareness are measured on composite Likert-scale scores that may differ in scale and variance, the standardized (Beta) coefficients in Table 6, 0.303 for Tax Knowledge and 0.503 for Taxpayer Awareness, provide the appropriate basis for comparing their relative influence on a common scale, rather than the unstandardized B coefficients.

For Tax Knowledge, the t-value of 2.794 exceeds the t-table value of 1.663 ($df = n - k - 1 = 88 - 2 - 1 = 85$), with a

significance of 0.006 (< 0.05); H₁ is therefore accepted, Tax Knowledge has a positive and significant partial effect on MSME Operators' Compliance. For Taxpayer Awareness, the t-value of 4.634 exceeds the t-table value, with a significance of 0.001 (< 0.05); H₂ is therefore accepted, Taxpayer Awareness has a positive and significant partial effect on MSME Operators' Compliance.

The simultaneous test (F-test) results show a calculated F-value of 57.630 with a significance of 0.000 (< 0.05); H₃ is therefore accepted, Tax Knowledge and Taxpayer Awareness jointly have a positive and significant effect on MSME Operators' Compliance. The coefficient of determination is $R = 0.759$ and $R^2 = 0.576$; the Adjusted R^2 is 0.566, indicating that Tax Knowledge and Taxpayer Awareness jointly explain 56.6% of the variation in MSME Operators' Compliance, while the remaining 43.4% is explained by other variables outside this research model.

Table 7. Simultaneous test (F) and coefficient of determination

F	Sig.	R	R Square	Adjusted Square	R
57.630	0.000	0.759	0.576	0.566	

Discussion

The Effect of Tax Knowledge on MSME Operators' Compliance

Tax Knowledge has a positive and significant partial effect on MSME Operators' Compliance (H₁ accepted),

indicating that tax knowledge — covering understanding of basic tax concepts, the function and benefits of tax, NPWP registration procedures and functions, tax sanctions, and payment or reporting deadlines — contributes to increasing

compliance. Most respondents understood that tax is a citizen's obligation used to finance national development, knew the function and benefits of tax for the state and society, and understood NPWP procedures and functions. Under the Theory of Planned Behavior, the knowledge or ability an individual possesses influences their attitude and intention, which in turn encourages compliant behavior; in this study, tax knowledge contributes to forming taxpayers' positive attitude toward obeying tax obligations and strengthens MSME operators' perceived ability to fulfil those obligations properly. This result is consistent with Siregar et al. (2025) and Yanti and Wijaya (2023), who found that tax knowledge has a positive and significant effect on MSME taxpayer compliance, though it differs from Rasmon et al. (2023), who found that tax understanding has a positive but statistically insignificant effect on MSME compliance — a variation confirming that taxpayers with adequate tax knowledge more easily understand their tax rights and obligations, so that the higher an MSME operator's tax knowledge, the greater their tendency toward compliance.

The Effect of Taxpayer Awareness on MSME Operators' Compliance.

Taxpayer Awareness has a positive and significant partial effect on MSME Operators' Compliance (H_2 accepted), indicating that taxpayer compliance is influenced not only by tax knowledge but also by awareness arising from within the taxpayer — an internal drive to fulfill tax obligations of one's own volition, without being influenced by pressure or supervision from tax officials or coercion from other parties. Most respondents recognized that tax is a primary source of state revenue supporting development and the provision of public facilities, held a positive attitude toward tax as a beneficial obligation, showed willingness to

voluntarily obey and fulfill tax obligations, and recognized the importance of NPWP as the taxpayer's official identity, indicating that these operators have developed a positive attitude toward tax and an awareness of their basic obligations as taxpayers, viewing tax compliance as a form of responsibility to be fulfilled rather than merely an administrative obligation carried out to avoid sanctions. Theoretically, this result is consistent with the Theory of Planned Behavior, which explains that behavior is influenced by behavioral intention, which in turn is shaped by a positive attitude toward the behavior; when MSME operators hold the positive view that fulfilling tax obligations is both a responsibility and a contribution to national development, a strong intention forms to comply and sustain that compliance. This result is consistent with Putri and Trisnaningsih (2023) and Siregar et al. (2025), who found that taxpayer awareness has a significant effect on MSME taxpayer compliance, though it differs from Natalia and Linawati (2025), who found that taxpayer awareness has no significant effect on MSME operators' compliance, a variation confirming that the higher a taxpayer's awareness, the greater their willingness to voluntarily fulfill their tax obligations. As noted above, the sample's relatively high rate of NPWP ownership (69.3%; Table 3) is broadly consistent with both the tax-knowledge and taxpayer-awareness findings and is therefore not repeated in detail in the two discussions that follow.

The Simultaneous Effect of Tax Knowledge and Taxpayer Awareness on MSME Operators' Compliance.

Tax Knowledge and Taxpayer Awareness jointly have a positive and significant effect on MSME Operators' Compliance (H_3 accepted), jointly explaining 56.6% of the variation in compliance (Adjusted R Square), while the remaining 43.4% is explained by other

variables outside this research model. This result shows that MSME operators' compliance in fulfilling tax obligations is shaped by a combination of tax knowledge and taxpayer awareness: tax knowledge provides MSME operators with an understanding of the importance of tax for the state, of basic tax concepts, of how to properly fulfill tax obligations, and of the procedure and importance of NPWP as an official taxpayer identity, while taxpayer awareness serves as the bridge that encourages the emergence of a positive attitude and internal willingness to voluntarily carry out tax obligations. Compliance therefore depends not only on the ability to understand tax regulations but also on the presence of awareness to translate that understanding into compliant behavior. Theoretically, this result is consistent with the Theory of Planned Behavior, under which behavior is shaped by multiple interacting factors that jointly produce a positive overall effect: in this study, tax knowledge contributes to shaping MSME operators' perspective in understanding and implementing applicable tax provisions, while taxpayer awareness reflects the positive attitude that drives the formation of intention to fulfill tax obligations, so that the combination of adequate understanding and high awareness encourages MSME operators toward compliant behavior. This result is consistent with Siregar et al. (2025), whose F-statistic results show that tax knowledge and taxpayer awareness simultaneously have a positive and significant effect on MSME taxpayer compliance, confirming that the two variables are complementary factors in encouraging tax compliance particularly among MSME operators.

Comparing the two standardized coefficients in Table 6 (Beta = 0.503 for Taxpayer Awareness versus Beta = 0.303 for Tax Knowledge), Taxpayer Awareness contributes a comparatively larger share of the explained variation in compliance,

roughly 1.7 times that of Tax Knowledge. This pattern suggests that, in Kalawat District, the internal willingness to comply plays a somewhat stronger role than technical understanding of tax rules in shaping actual compliance behavior. For policy, this implies that awareness-building interventions — campaigns and outreach that cultivate a sense of civic responsibility and voluntary commitment to tax compliance, may generate a comparatively larger marginal improvement in MSME compliance than technical tax-education programs alone, although both remain significant and complementary levers given that neither coefficient dominates the model entirely.

5. Conclusion

Theoretically, this study extends the Theory of Planned Behavior to a tax-compliance, MSME-specific context: Tax Knowledge has a positive and significant effect on MSME Operators' Compliance through the perceived-behavioral-control pathway, while Taxpayer Awareness has a positive and significant effect through the attitude/subjective-norm pathway, and the two antecedents simultaneously explain 56.6% of the variation in compliance — confirming that they operate as complementary, mutually reinforcing predictors rather than substitutes, with Taxpayer Awareness carrying comparatively more explanatory weight (Beta = 0.503 versus 0.303). Practically, the Directorate General of Taxes is encouraged to continue strengthening socialization, education, and mentorship for MSME operators on tax rights, obligations, and NPWP ownership, placing particular emphasis on awareness-building activities alongside technical tax education given Taxpayer Awareness's larger effect; MSME operators are encouraged to keep improving both their tax knowledge and their sense of civic responsibility toward tax compliance; and the North Minahasa Regency Government, together with the

Cooperatives and SME Office, is encouraged to synergize with the Directorate General of Taxes to sustain continuous tax guidance for MSME operators.

This study is nonetheless subject to several limitations. It focuses on a single district with a two-variable model that leaves 43.4% of the variation in compliance unexplained; it relies on a 10% rather than the more conservative 5% Slovin margin of error; it depends on a single self-reported questionnaire administered at one point in time, which may be subject to common method and social-desirability bias; and its motivating pre-survey finding (73.3% lacking an NPWP in a small convenience sample) is not directly comparable to the main survey's purposive-sample finding (69.3% already holding an NPWP). Future research is therefore encouraged to extend the model to other districts and additional variables (e.g., tax sanctions, fiscal-service quality, digitalization of tax administration), adopt a tighter margin of error or an a priori power analysis, incorporate objective compliance indicators or multi-wave data collection, and draw a single, consistently sampled dataset across the problem-identification and hypothesis-testing stages; in the meantime, the present findings on Kalawat District, North Minahasa Regency, should be generalized with appropriate caution.

References

- Afiyah, T. H., Arisa, L., Pratiwi, E. U. (2024). Determinasi kepatuhan pajak umkm: peran pemahaman, kemudahan, dan sanksi perpajakan. *Jurnal Riset Akuntansi*, 9(2), 139-148.
<http://dx.doi.org/10.35448/jratirtayasa.v9i2.31652>
- Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50(2), 179–211.
- Agassy, A., & Tanno, A. (2024). Taxpayer compliance based on the theory of planned behavior in individual taxpayers in the City of Padang. *E-Jurnal Akuntansi*, 34(4), 846.
<https://ejournal1.unud.ac.id/index.php/akuntansi/article/view/5066>
- Andaningsih, IGP. R., Murti, W., & Yolanda. (2022). Kepatuhan dan kesadaran wajib pajak UMKM dalam meminimalisir kecurangan pajak di wilayah Jakarta dan Bekasi. *Trilogi Accounting & Business Research*, 3(1), 80–97.
<https://doi.org/10.31326/tabrv1i1.1263>
- Anto, L. O., Husin., Hamid, W., & Bulan, N. L. (2021). Taxpayer awareness, tac knowledge, tac sanctions, public service account ability and taxpayer compliance. *Accounting* 7, 49-58. [10.5267/j.ac.2020.10.015](https://doi.org/10.5267/j.ac.2020.10.015)
- Fajar, M. M., Frestyani, N. A., & Alfiqui, M. R. A. (2025). Pengaruh kebijakan perpajakan terhadap kepatuhan wajib pajak UMKM. *Journal ANC*, 1(3), 258–276.
<https://journal.anc-aryantonurconsulting.com/tp/article/view/95>
- Handoko, A. T., & Ladepi, N. (2025). Analisis perhitungan PPh final UMKM wajib pajak orang pribadi sebelum dan sesudah Undang-Undang Harmonisasi Peraturan Perpajakan (UU HPP). *EKONOMIKA45: Jurnal Ilmiah Manajemen, Ekonomi Bisnis, Kewirausahaan*, 12(2), 1085–1093.
<https://jurnaluniv45sby.ac.id/index.php/ekonomika/article/view/4578>
- Imran, M., Walandouw, S. K., & Weku, P. (2026). Analysis of msme taxpayers' understanding in fulfilling tax obligations in Tuminting District. *Branding: Jurnal Manajemen Dan Bisnis*,

- 5(2), 217–225.
<https://doi.org/10.15575/jb.v5i2.58953>
- Kharisma, N. (2023). Analisis dampak kenaikan tarif Pajak Pertambahan Nilai (PPN) terhadap masyarakat dan inflasi di Indonesia. *Sahmiyya: Jurnal Ekonomi dan Bisnis* 12(2), 295–303. <https://ejournal.uingusdur.ac.id/sahmiyya/article/view/1703>
- Kumalaningrum, A., & Widhiastuti, R. (2023). Pengaruh pengetahuan perpajakan, kesadaran wajib pajak terhadap kepatuhan wajib pajak UMKM di Kabupaten Sukoharjo dengan latar belakang pendidikan sebagai variabel moderating. *Business and Accounting Education Journal*, 4(2), 229–240. <https://journal.unnes.ac.id/sju/baej/article/view/70304>
- Lolowang, E., Sondakh, J. J., & Mintalangi, S. S. (2024). Analisis kepatuhan wajib pajak UMKM di Kantor Pelayanan Pajak Pratama Manado. *Riset Akuntansi dan Portofolio Investasi*, 2(2), 487–496. <https://doi.org/10.58784/rapi.239>
- Madjodjo, F., & Baharuddin, I. (2022). Pengaruh kesadaran wajib pajak dan pelayanan fiskus terhadap kepatuhan wajib pajak UMKM. *Gorontalo Accounting Journal*, 5(1), 50–67. <https://doi.org/10.32662/gaj.v5i1.1979>
- Mardiasmo. (2024). *Perpajakan*. (Edisi terbaru). Andi.
- Natalia, S., & Linawati. (2025). Pengaruh kesadaran pajak dan pengetahuan perpajakan terhadap kepatuhan pajak pada UMKM di Kecamatan Pondok Aren. *Musyari: Jurnal Manajemen, Akuntansi, dan Ekonomi*, 24(8), 111–120. <https://cibangsa.com/index.php/musyari/article/view/6533>
- Palupi, M. E., & Arifin, J. (2023). Kepatuhan wajib pajak UMKM di Indonesia: Faktor internal dan eksternal. In *Proceeding of National Conference on Accounting & Finance* 5, 336–346. <https://journal.uui.ac.id/NCAF/article/view/27622>
- Permana, H. A., & Hidayat, V. S. (2022). Pengaruh pengetahuan perpajakan dan sanksi perpajakan terhadap kepatuhan wajib pajak kendaraan bermotor (Studi kasus Kantor Samsat Makassar I). *Equity*, 25(1), 89–102. <https://ejournal.upnvj.ac.id/equity/article/view/4241>
- Purba, R., Ginting, R. M. H., Harefa, H. S., & Lembeng, R. N. S. (2023). Pengaruh pengetahuan perpajakan, sosialisasi pajak dan tarif pajak terhadap kepatuhan wajib pajak UMKM di Kota Medan. *Jurnal Mutiara Akuntansi*, 8(2), 73–85. <https://doi.org/10.51544/jma.v8i2.4735>
- Putri, E. W., & Trisnaningsih, S. (2023). Pengaruh tarif pajak, tingkat penghasilan, dan kesadaran wajib pajak terhadap kepatuhan wajib pajak UMKM. *Journal of Economic, Business and Accounting (COSTING)*, 7(1), 999–1006. <https://doi.org/10.31539/costing.v7i1.6559>
- Rasmon, Marnala, Rahayu, E. U., Zubir, & Tinaria, L. (2023). Faktor-faktor yang mempengaruhi kepatuhan wajib pajak pemilik UMKM pada Kantor Pelayanan Pajak Pratama Pekanbaru Senapelan. *Jurnal Akuntansi, Manajemen, Bisnis dan Teknologi*, 3(2), 240–248. <https://doi.org/10.56870/ambitek.v3i2.102>
- Nengsih, R., Husin, D., Maryam, Fitria, Umma, I., Putra, R. S., Bangki, R., Yulianti, R., & Suheri, M. (2025).

- Ilmu perpajakan*. CV Eureka Media Aksara.
- Siregar, A. A. H., Syahfitri, N. N., & Apriliani, R. R. (2025). Pengaruh pengetahuan perpajakan dan kesadaran wajib pajak pada sektor UMKM. *MENAWAN: Jurnal Riset dan Publikasi Ilmu Ekonomi*, 3(4), 71–78.
<https://doi.org/10.61132/menawan.v3i4.1537>
- Situmorang, F. (2025). Analisis kepatuhan pajak pada Usaha Mikro, Kecil, dan Menengah (UMKM) di Indonesia. *Jurnal UMKM, Manajemen dan Akuntansi*, 1(2), 62–69.
<https://e-journalbattuta.ac.id/index.php/juma/article/view/63>
- Sugiyono. (2023). *Metode penelitian kuantitatif, kualitatif, dan R&D*. Alfabeta.
- Susmiatun, & Kusmuriyanto. (2014). Pengaruh pengetahuan perpajakan, ketegasan sanksi perpajakan dan keadilan perpajakan terhadap kepatuhan wajib pajak UMKM di kota semarang. *Accounting Analysis Journal*, 3(3).
<https://doi.org/10.15294/aaj.v3i3.4220>
- Wahang, L. K., Baba, N., Nurseptiani, A., Lusiana, E., & Hasanah, A. N. (2026). Pengaruh pemahaman perpajakan terhadap kepatuhan wajib pajak UMKM. *RIGGS: Journal of Artificial Intelligence and Digital Business*, 4(4), 509–516.
<https://doi.org/10.31004/riggs.v4i4.3420>
- Yanti, L. D., & Wijaya, V. S. (2023). Pengaruh pengetahuan perpajakan, tarif pajak, mekanisme pembayaran pajak dan sanksi pajak terhadap kepatuhan wajib pajak UMKM. *Eco-Buss*, 6(1), 206–216.
<https://doi.org/10.32877/eb.v6i1.611>
- Zebua, T. P. S., & Putra, R. J. (2025). Pengaruh literasi pajak, pemanfaatan teknologi, dan kesadaran wajib pajak terhadap kepatuhan pajak UMKM dengan Coretax sebagai variabel moderasi. *Economics and Digital Business Review*, 6(2), 1256–1271.
<https://doi.org/10.37531/ecotal.v6i2.2873>