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Able but Reluctant? Property Tax Success in a Kediri Ward

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ABSTRACT
This study examines whether taxpayer understanding, ability to pay, awareness, and the collection system are related to the success of land and building tax collection, and it identifies which of the four makes the largest contribution. A questionnaire survey was administered to randomly selected individual taxpayers in a ward of Kediri, Indonesia. After tests of validity, reliability, normality, multicollinearity, and heteroskedasticity, the hypotheses were tested with multiple linear regression, supported by t tests, an F test, and partial correlations.The four factors are jointly and individually significant correlates of collection success. Understanding, awareness, and the collection system are positively related to it, as expected. Ability to pay is also significant, but its sign is negative, and it makes the largest contribution of the four, which challenges a simple reading of the ability to pay principle. Local tax administrators should raise understanding, show taxpayers the local benefits of the tax, and make payment easier. They should also give taxpayers who feel burdened effective channels to ask questions and file objections, and treat their engagement as an opportunity for cooperation. The study offers ward level evidence on property tax from a mid sized Indonesian city and shows that the outcome, a proactive attitude, is not the same as payment. It reports every test transparently, including the tests that produced an unexpected sign.

Keywords: *Property tax, land and building tax, tax compliance, ability to pay, tax awareness, collection system.*

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1. INTRODUCTION

Few taxes are as visible to ordinary households as the tax on land and buildings. It arrives once a year in the form of a bill tied to a piece of property that the taxpayer can see from the front door, and it is calculated from a value that the taxpayer did not choose. In Indonesia this tax, known as Pajak Bumi dan Bangunan (PBB), is a major source of regional income and has long been presented as a symbol of shared responsibility for local development. Its success, however, depends on a very simple act: the household has to accept the bill and pay it. Research on tax compliance has shown that this act is shaped by far more than the threat of penalties, and that understanding, perceived fairness, trust, and the ease of the process all play a part (Alm, 2019; Slemrod, 2019).

The importance of the tax for public finance is beyond doubt. Tax revenue funds the public goods that no household could buy alone, from roads and schools to security, and a large share of it supports the day to day work of government. Since the tax reform of 1983, Indonesian policy has tried to broaden voluntary participation through simpler rules, fewer tax types, and easier payment procedures, in the hope that citizens would take up their obligations willingly. Land and building tax has a special place in this history. It has the largest number of taxpayers of any tax, it is levied on an object

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that cannot be hidden, and the proceeds are shared with local governments, which gives them a direct stake in its collection. The later decentralization of property tax administration in Indonesia has only strengthened this stake, and it has also exposed the political cost that local governments bear when they try to raise more revenue from the tax (von Haldenwang, 2017).

Despite this importance, actual collection often falls short of the amount assessed. Table 1 shows official figures for Kelurahan Dermo in Mojoroto District, Kediri City, for three consecutive years. In each year the amount collected was lower than the amount assessed, and over the three years the shortfall averaged roughly one quarter of the assessed tax. Figure 1 shows the same figures graphically. Such gaps are common in property tax systems, and they raise a practical question for local administrators: which characteristics of the taxpayer and of the collection system are related to a successful collection?

Table 1. Assessed and collected land and building tax in Kelurahan Dermo, 2005 to 2007

Year	Assessed tax (Rp)	Collected tax (Rp)	Collection ratio (%)
2005	31,117,431	24,608,183	79.08
2006	40,191,974	28,442,151	70.77
2007	53,405,192	39,707,809	74.35
Total or mean	124,714,597*	92,758,143*	74.73 (mean); 74.38* (pooled)

Source: Regional revenue office of Kediri City, 2005 to 2007. *Computed by the authors

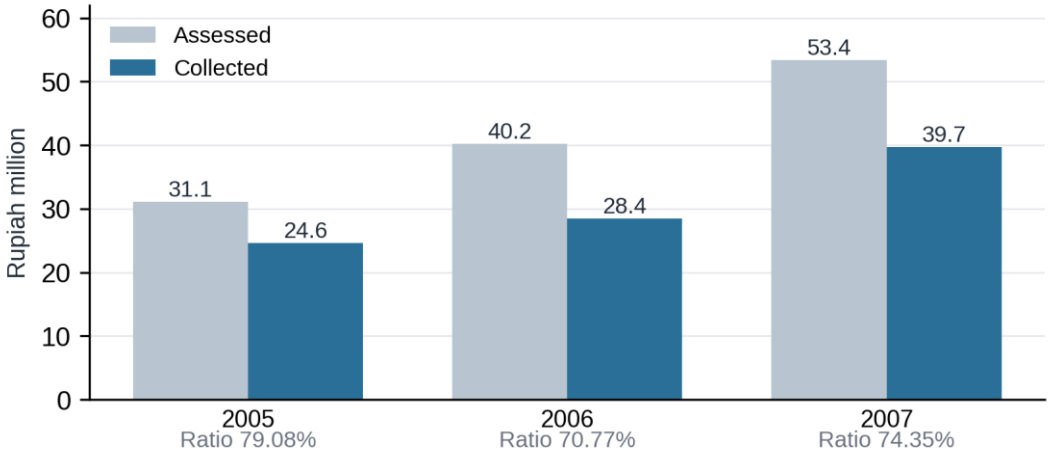


Figure 1. Assessed and collected land and building tax in Kelurahan Dermo
Source: Regional revenue office of Kediri City; computed by the authors

The literature points to several candidates. The first is the taxpayer's understanding of the tax, since a person who does not know what the tax is for, how it is computed, and who must pay it is unlikely to cooperate. Conceptual and empirical work on tax knowledge has emphasized that understanding has several components and that it is related to compliance (Bornman & Ramutumbu, 2019; Munjeyi & Schutte, 2025). The second is the taxpayer's capacity to pay. Property tax is levied on an object and not on income, but it is paid out of income, and the classical principle of ability to pay suggests that the burden should be proportional to the means of the taxpayer. The third is awareness, understood as the willingness to contribute to public functions, which is close to what the behavioral literature calls tax morale (Luttmer & Singhal, 2014). The fourth is the collection system itself, meaning how easy or difficult it is to pay, how long the payment period is, how penalties for lateness are applied, and how long taxpayers must wait. Recent work on tax administration examines how the design of the collection process, from the incentives of collectors to the introduction of electronic filing, affects outcomes (Khan et al., 2016; Okunogbe & Pouliquen, 2022).

Earlier Indonesian studies of property tax have examined these factors in Surabaya and other districts, mostly with regression models based on questionnaire data. This study extends that line of research to a ward in Kediri, and it asks whether taxpayer understanding, ability to pay, awareness, and the collection system are related to the success of property tax collection, and which of the four is the strongest correlate. The data come from a survey of individual taxpayers in the ward, and the analysis uses multiple linear regression.

The study makes three contributions. First, it provides evidence from a ward level setting in a mid sized Indonesian city, where the tax is collected close to the taxpayer and where the behavior of households matters directly. Second, it shows that not all of the expected relationships have the expected sign. Understanding, awareness, and the collection system are positively related to collection success, as theory predicts, but perceived ability to pay is negatively related, and it is the strongest of the four. This result is at odds with a simple reading of the ability to pay principle and needs careful interpretation. Third, it points out that the outcome measure, which captures the proactive attitude of the taxpayer, differs from the amount actually collected, and it draws out the consequences of this difference for the interpretation of the findings.

The article is organized as follows. The next section reviews the concepts and related research and develops the hypotheses. The method section describes the variables, the sample, and the analytical procedures. The results and discussion section reports the findings and interprets them against the literature. The final section presents the conclusions, the implications for local tax administrators, the limitations, and directions for future research.

2. LITERATURE REVIEW

2.1. Property tax and the behavioral view of compliance

Property tax is often described as one of the best local taxes because the base is immobile, visible, and difficult to conceal. In practice, it is also one of the hardest to collect. The value on which the tax is based is assessed by the authority and not declared by the taxpayer, so disputes about valuation and fairness are common. The payment is a large lump sum that comes due once a year and is not deducted from a wage or added to a purchase. Because of these features, payment is more visibly voluntary than for taxes withheld at source, and the taxpayer's attitude toward the tax has room to matter. In Indonesia, an analysis of the decentralization of property tax administration stresses that local governments face political costs when they try to mobilize more revenue from the tax, which underlines how sensitive the relationship between citizens and the local state is (von Haldenwang, 2017). Recent modeling work proposes ways of raising land and building tax revenue in Indonesia, which reflects the continuing policy interest in the tax (Samudra, 2024).

Behavioral research has moved the study of tax compliance well beyond the audit and penalty model. A comprehensive review of what motivates compliance concludes that intrinsic motivation, social norms, and perceptions of the tax system explain much of the behavior that pure deterrence cannot (Alm, 2019). A review of enforcement adds that the room for noncompliance depends heavily on the visibility of income and the quality of information available to the authority (Slemrod, 2019). The concept of tax morale, meaning the intrinsic willingness to pay taxes, has been linked to trust in institutions and to perceptions of fairness in the exchange between citizens and the state (Luttmer & Singhal, 2014). The slippery slope framework combines these ideas by distinguishing enforced compliance, which rests on the power of the authority, from voluntary compliance, which rests on trust, and it has been examined in a large multinational study (Batrancea et al., 2019) and in Indonesian applications that consider modern tax administration and corporate taxpayers (Aulia et al., 2022; Darmayasa & Hardika, 2024).

These strands imply that the four factors examined here should not be regarded as independent technical variables. Understanding, capacity, awareness, and the collection system are all filtered through the taxpayer's perception of the authority and of the fairness of the tax. This is the view taken in the remainder of the review, which considers each factor in turn and states the hypotheses.

2.2. Taxpayer understanding

Understanding of tax law and procedures is the cognitive element of the taxpayer's attitude toward the tax. In the local tradition it is measured by what taxpayers know about the purpose of the tax, its object

and subject, and its role as a source of development funds. The theoretical argument is that simple rules that are easy to understand widen participation, since a person who understands a rule is more likely to follow it. The prospect theory tradition, on which the local literature draws, adds that the perceived simplicity and reach of tax law influence taxpayer behavior.

Contemporary work supports the notion that knowledge matters but also that it has structure. A conceptual framework of tax knowledge proposes several components of knowledge rather than a single stock (Bornman & Ramutumbu, 2019). Research on small and medium enterprises examines tax literacy, together with service delivery, amnesty, and rewards, as determinants of voluntary compliance (Munjeyi & Schutte, 2025). A typology of taxpayers shows that groups with different characteristics behave differently (Paleka & Vitezić, 2023). Studies that apply the theory of planned behavior, which links attitudes, norms, and perceived control to intentions, use understanding and attitudes as antecedents of compliance intention in public administration settings (Taing & Chang, 2021), among small firms (Bani-Khalid et al., 2022), and in an Indonesian study that combines the theory with stakeholder theory (Nurwanah et al., 2018). The consistent message is that understanding is a plausible precondition for cooperation. The first hypothesis follows.

H1: Taxpayer understanding is positively related to the success of property tax collection.

2.3. Taxpayer ability to pay

The principle of ability to pay holds that each person should contribute to the public purse in proportion to his or her capacity, usually measured by income, consumption, or wealth. Property tax is an objective tax, because the amount due is set by the condition of the property and not by the personal circumstances of the owner, but it is paid out of the owner's income, so the ratio of the tax to income is a natural measure of its burden. Where the tax rises over time and income does not keep pace, the burden can become heavy, and this is the mechanism through which capacity is expected to influence collection. The expectation in the local tradition is that a taxpayer with greater capacity to pay is better able to meet the obligation, and that collection success therefore rises with capacity.

The behavioral literature warns that the relationship is not necessarily this simple. People who face a heavy burden tend to scrutinize how it is calculated, to question its fairness, and to seek explanations, while people who feel that the tax is small may pay without engaging at all. The effect of taxation on citizen engagement has been documented in an experimental study in which citizens engaged more with the state when it tried to tax them (Weigel, 2020). Fairness perceptions and trust in authorities have been shown to shape how burdens are received (Batrancea et al., 2019; Luttmer & Singhal, 2014). These arguments suggest that the sign of the relationship between capacity and a measure of proactive attitude could go either way, depending on what the measure captures. Because the theoretical tradition on which this study rests predicts a positive relationship, the second hypothesis is stated with this reference expectation, and the analysis will show whether the data agree.

H2: Taxpayer ability to pay is positively related to the success of property tax collection.

2.4. Taxpayer awareness

Tax awareness is defined as the willingness of the taxpayer to contribute funds for the functions of taxation by paying on time and in the correct amount. In the local tradition it is described as an attitude toward the function of tax with cognitive, affective, and conative components: what the person believes, how the person feels, and how the person is inclined to act. When the three are aligned, the taxpayer is expected to see the tax as a duty of citizenship and to accept it without grumbling. The literature also notes that awareness depends on the perceived use of tax revenue. A taxpayer who believes that the proceeds are used for development and are distributed fairly will feel more committed to paying.

This is close to the idea of tax morale, which links willingness to pay to trust and to perceptions of fairness (Luttmer & Singhal, 2014). Experimental evidence shows that citizens engage more with the state when it taxes them (Weigel, 2020), and evidence from trust and power research suggests that voluntary compliance grows where taxpayers trust the authority (Aulia et al., 2022; Batrancea et al., 2019). Evidence from survey experiments also suggests that what people believe others do influences their own compliance decisions (Górecki & Letki, 2021), and exposure to tax dilemmas can lower self declared tax morale (Deglaire et al., 2021). Meta analytic work on tax evasion games similarly shows that compliance responds to context (Alm & Malézieux, 2021). On this basis, awareness is expected to be positively related to collection success.

H3: Taxpayer awareness is positively related to the success of property tax collection.

2.5. The collection system

The collection system refers to how easy or difficult it is for taxpayers to pay. It covers the payment procedure, the length of the payment period, the penalty for late payment, and the waiting time when paying. The classical principles of good taxation, such as certainty, convenience, equity, and economy, all bear on how the system is experienced by the taxpayer. Property tax in Indonesia has been described as semi self assessment, because the taxpayer reports the object and the authority computes the tax, so the collection process involves cooperation between the two.

Recent studies indicate that process design matters. A field experiment on performance pay for tax collectors shows that the way the collection agents are motivated can change the results of collection (Khan et al., 2016). The introduction of electronic filing has been analyzed for its consequences for the interaction between taxpayers and officials and for corruption (Okunogbe & Pouliquen, 2022). Research on Indonesia's modernized tax administration examines the power and trust dimensions of the slippery slope framework in a digital setting (Darmayasa & Hardika, 2024). A deterrence meta analysis concludes that the effect of enforcement should be examined case by case (Dularif et al., 2019). Together, these findings support the expectation that a collection system that is easy to use is positively related to collection success.

H4: The collection system is positively related to the success of property tax collection.

2.6. Joint effects and the dominant factor

The four factors describe complementary parts of the same process. Understanding concerns what the taxpayer knows, capacity concerns what the taxpayer can bear, awareness concerns what the taxpayer is willing to give, and the collection system concerns how easily the payment can be made. Reviews of the behavioral literature portray compliance as the product of several interacting forces and not of any single trait (Alm, 2019; Slemrod, 2019). The joint hypothesis follows.

H5: Taxpayer understanding, ability to pay, awareness, and the collection system jointly influence the success of property tax collection.

Earlier local studies have found different factors to be dominant. One study in Surabaya identified the collection system as the most influential factor, while another emphasized taxpayer awareness and the burden of the tax relative to income. Because the results differ by setting and measurement, the dominance of one factor should be tested and not assumed, and the final hypothesis concerns which factor makes the largest contribution.

H6: Among the four factors, one has the largest contribution to the success of property tax collection.

The relationships tested are summarized in Figure 2. Each hypothesis is stated with a positive reference expectation, and the analysis reveals whether the data confirm the direction.

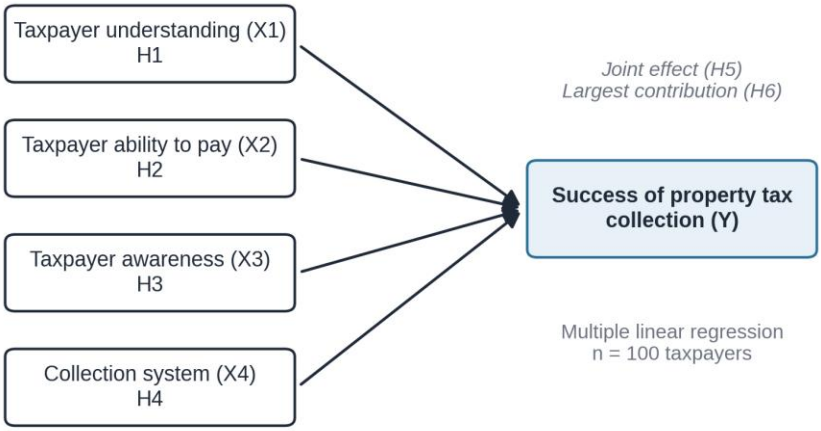


Figure 2. Conceptual framework
Source: Authors' elaboration

3. RESEARCH METHOD

3.1. Research design

The study follows a quantitative explanatory design. It tests the association between four independent variables, taxpayer understanding (X_1), taxpayer ability to pay (X_2), taxpayer awareness (X_3), and the collection system (X_4), and one dependent variable, the success of property tax collection (Y). Data were gathered with a structured questionnaire at one point in time, so the design is cross sectional. The hypotheses were tested with multiple linear regression. The dependent variable is defined as the proactive attitude of the taxpayer toward the tax, following the attitude structure used in the local tradition, in which proactive behavior is the conative element of the taxpayer's attitude and is assumed to be associated with the success of taxation. This definition matters for interpretation, because the outcome is a perceptual and attitudinal measure. It is not the amount of tax actually collected.

3.2. Population and sample

The population consists of individual household taxpayers of land and building tax in Kelurahan Dermo, Mojoroto District, Kediri City. The regional revenue office of the city lists 1,170 such taxpayers. Simple random sampling was used, so that each taxpayer had the same chance of selection irrespective of any strata in the population. The sample size followed the rule of thumb for multivariate research, which sets the number of observations at 25 times the number of independent variables. With four independent variables, the sample size is 100 respondents. This is about 8.5 percent of the population. The Slovin formula at a 10 percent tolerance would have suggested a sample of about 92, so the chosen size is close to that alternative and gives about 25 observations per predictor. Table 2 presents the profile of the respondents.

Table 2. Profile of respondents (n = 100)

Characteristic	Category	Number	Percent
Gender	Male	46	46
	Female	54	54
Education	Elementary school	2	2
	Junior high school	19	19
	Senior high school	58	58
	Diploma (D3)	5	5
	Bachelor (S1)	16	16
Occupation	Civil servant	6	6
	Private employee	56	56
	Self employed	19	19
	Other	19	19

Source: Primary data

Women make up a little more than half of the respondents, and most of the respondents completed senior high school. Private sector employees account for more than half of the sample, and only a minority are self employed or civil servants. This profile suggests a residential ward with a workforce that is largely employed and not engaged in trade, which is relevant for the interpretation of the measure of ability to pay.

3.3. Measurement of variables

All constructs were measured with statements on a five point scale from strongly disagree (1) to strongly agree (5), with 3 as the midpoint, and the scale was treated as interval. Scores of 1 and 2 are read as low, a score of 3 as moderate, and scores of 4 and 5 as high. For the dependent variable, the scale was labeled from never or very low to very often or very high. The instruments were developed from

earlier studies of property tax in Surabaya and adapted to the setting. The questionnaire has 34 statements in five sections. Table 3 presents the constructs, the number of items, and the indicators.

Table 3. Constructs, items, and indicators

Construct	Items	Indicators	Reading of scores
Taxpayer understanding (X1)	4	PBB as a source of regional income; PBB as an objective tax on immovable property; the taxpayer as the person who controls or benefits from the property; PBB as a source of development funds	Higher means stronger understanding
Taxpayer ability to pay (X2)	4	Tax fitted to the value of land and building; assessment base of 20 to 100 percent of the assessed value; rate of 0.5 percent; ratio of the burden to income	Higher means greater ability
Taxpayer awareness (X3)	4	PBB as a source of national and regional revenue; paying on time to fund development; payment as a duty of citizenship	Higher means stronger awareness
Collection system (X4)	4	Ease of the payment procedure; length of the payment period; penalty for lateness; waiting time	Higher means an easier system
Collection success (Y)	18	Proactive attitude: discussing tax matters; correctness of the official's calculation; explanation of the calculation; objection to unequal calculation	Higher means a more proactive attitude

Source: Authors' elaboration from the questionnaire. All items use a five point scale (1 = lowest, 5 = highest)

Understanding was measured by four items on the purpose and nature of the tax: that it is a source of regional income, that it is an objective tax levied on immovable property, that the taxpayer is the person who controls or benefits from the property, and that it funds development. Ability to pay was measured by four items on the fit between the tax and the value of the property, the range of the assessment base, the rate applied to the assessed value, and the ratio of the tax burden to income. Awareness was measured by four items on the use of the tax for national and regional revenue, the need to pay on time for development, and the obligation of citizenship. The collection system was measured by four items on the ease of the payment procedure, the payment period, the penalty for lateness, and the waiting time. The dependent variable was measured by 18 items derived from four indicators of proactive attitude: discussing tax matters, the correctness of the official's calculation, the official's explanation of the calculation, and objection to unequal calculation.

Data were collected primarily through the questionnaire and supported by documentation from the regional revenue office of the city. The secondary data consisted of assessment and collection records.

3.4. Data quality tests

Validity was tested with corrected item total correlations. An item is valid if the correlation is positive and larger than the critical value, which the study takes as 0.167 for the sample of 100. Reliability was tested with Cronbach's alpha, and a coefficient above 0.60 was regarded as acceptable. Alpha remains the standard index of internal consistency, but it should be read with care because it depends on the number of items and does not by itself establish unidimensionality (Taber, 2018). Normality was assessed with the Kolmogorov Smirnov test, with a significance level above 0.05 indicating no significant departure from normality.

Because all constructs were measured with the same questionnaire and answered by the same respondents, common method variance may inflate the relationships between them, and the discussion returns to this point (Podsakoff et al., 2012; Podsakoff et al., 2024).

3.5. Classical assumption tests

Regression estimates are unbiased and efficient when a set of assumptions is met, and a review of research practice warns that misconceptions about these assumptions are widespread (Ernst & Albers, 2017). Multicollinearity was assessed with the tolerance and the variance inflation factor (VIF). A VIF below 10 signals no serious multicollinearity, although values close to 1 are more reassuring (Kim,

2019). Heteroskedasticity was assessed with the Spearman rank correlation between the absolute residuals and each predictor, where a significance level above 0.05 indicates that the variance of the residuals is unrelated to the predictor (Olvera Astivia & Zumbo, 2019). Autocorrelation was not tested, because the data are cross sectional and not a time series.

3.6. Regression and hypothesis tests

The hypotheses were tested with the multiple linear regression model in Equation (1), estimated with SPSS version 12.0.

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + e \qquad (1)$$

In the equation, Y is the success of property tax collection, X_1 to X_4 are the four independent variables, β_0 is the constant, β_1 to β_4 are the regression coefficients, and e is the disturbance term. The joint effect was tested with the F test at the 5 percent level with 4 and 95 degrees of freedom, and the partial effects with t tests at the 5 percent level with 95 degrees of freedom. The dominant factor was identified from the size of the squared partial correlation of each predictor with the dependent variable. Where the source output did not report a quantity, such as the confidence interval, the exact significance level, or the effect size, it was computed from the reported coefficients, standard errors, and degrees of freedom, and these computed values are marked with an asterisk in the tables.

4. RESULTS AND DISCUSSION

4.1. Descriptive statistics

Table 4 summarizes the answers to each section, computed from the response frequencies in the source data. The overall means are close to the midpoint of the scale for every construct, but the averages conceal a striking feature of the distributions. Answers are concentrated at the two ends of the scale. Between about half and two thirds of the answers to each section were either 1 or 5, so the sample is polarized and not clustered around the middle. This pattern is shown in Figure 3.

Table 4. Descriptive results by construct (n = 100)

Construct	Items	Range of item means*	Overall mean*	Scores 1 to 2 (%)*	Score 3 (%)*	Scores 4 to 5 (%)*
Understanding (X1)	4	2.82 to 3.22	3.02	47.0	13.2	39.8
Ability to pay (X2)	4	2.62 to 2.72	2.67	53.2	15.8	31.0
Awareness (X3)	4	3.03 to 3.23	3.13	40.2	17.0	42.8
Collection system (X4)	4	2.62 to 3.39	3.00	47.0	10.5	42.5
Collection success (Y)	18	2.66 to 3.50	3.22	40.1	11.3	48.6

Source: Computed by the authors from the response frequencies in the source data. For the items of Y with counts that do not sum to 100, the shares were normalized

Perceived ability to pay is the lowest of the five constructs. A majority of the answers, 53.2 percent, fall in the low range, and the overall mean of 2.67 is below the midpoint. Respondents therefore see themselves as poorly placed to bear the tax, and the item means are almost identical across the four items, ranging from 2.62 to 2.72. Understanding and awareness are moderate. The overall mean of understanding is 3.02, and the largest single category is the highest score, but almost half of the answers are in the low range. The overall mean of awareness is 3.13 and 42.8 percent of the answers are high, though 40.2 percent are low. The collection system has an overall mean of 3.00, but the items differ. The first two items average about 2.65 and the last two about 3.35, which indicates that respondents rate some features of the system less favorably than others. Success of collection, measured by proactive attitude, has an overall mean of 3.22, with 48.6 percent of the answers in the high range and 40.1 percent in the low range.

The polarization deserves attention. A distribution with heavy mass at both ends is typical of a population that contains two kinds of taxpayers, those who are engaged with the tax and confident in their understanding and those who are not. Averages and simple regression can hide this structure,

and it is a reason for caution in reading the results. It also suggests that policy aimed at the average taxpayer may miss both groups.

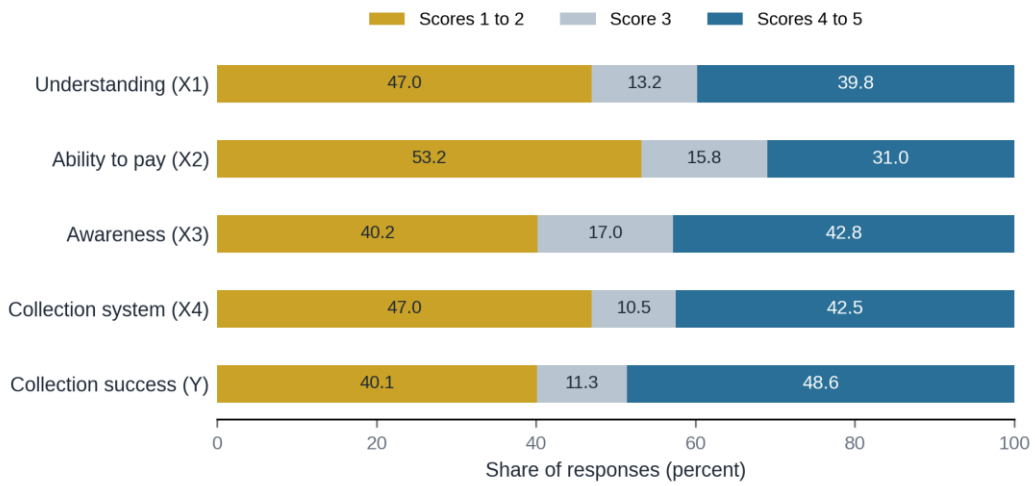


Figure 3. Distribution of responses by construct
Source: Computed by the authors from the response frequencies in the source data

4.2. Validity, reliability, and normality

All items pass the validity test. As shown in Table 5, every corrected item total correlation is positive and above the critical value of 0.167. The lowest is 0.527 for an item of the dependent variable, and the highest is 0.829 for an item of understanding. The Cronbach's alpha coefficients range from 0.857 to 0.923, well above the threshold of 0.60 and above the more demanding convention of 0.70. The instruments can therefore be regarded as internally consistent. The very high alpha of the 18 item dependent scale should be read with the caution that alpha increases with the number of items (Taber, 2018). The Kolmogorov Smirnov significance levels are between 0.069 and 0.205, all above 0.05, so the variables do not depart significantly from a normal distribution.

Table 5. Results of validity, reliability, and normality tests

Construct	Items	Range of item total correlations	Critical r	Cronbach's alpha	KS sig.
Understanding (X1)	4	0.643 to 0.829	0.167	0.885	0.119
Ability to pay (X2)	4	0.734 to 0.818	0.167	0.902	0.086
Awareness (X3)	4	0.712 to 0.781	0.167	0.879	0.081
Collection system (X4)	4	0.608 to 0.789	0.167	0.857	0.069
Collection success (Y)	18	0.527 to 0.690	0.167	0.923	0.205

Source: Processed primary data. All items valid; all constructs reliable (threshold 0.60); KS = Kolmogorov Smirnov, all above 0.05 (normal)

4.3. Classical assumption tests

Table 6 reports the assumption tests. The tolerance values range from 0.519 to 0.799, and the VIF values from 1.251 to 1.928, far below the criterion of 10, so multicollinearity is not a serious problem (Kim, 2019). The values are not close to 1, however, and this means the predictors share some variance. About 48 percent of the variation in perceived ability to pay is shared with the other three predictors, and this is relevant to the interpretation of its coefficient. The significance levels of the Spearman rank correlations between the absolute residuals and the predictors range from 0.481 to 0.984, all above 0.05, which indicates that heteroskedasticity is not present (Olvera Astivia & Zumbo, 2019).

Table 6. Results of multicollinearity and heteroskedasticity tests

Predictor	Tolerance	VIF	Spearman test sig.	Conclusion
Understanding (X1)	0.548	1.824	0.984	No problem
Ability to pay (X2)	0.519	1.928	0.822	No problem
Awareness (X3)	0.799	1.251	0.771	No problem
Collection system (X4)	0.604	1.656	0.481	No problem

Source: Processed primary data. Criteria: VIF below 10; significance above 0.05

4.4. Regression results

Table 7 reports the estimated model. The regression equation is $Y = 41.108 + 1.307\ X_1 - 2.120\ X_2 + 0.947\ X_3 + 0.983\ X_4$. The coefficients of understanding, awareness, and the collection system are positive. A higher score on any of the three is associated with a higher score on collection success, holding the others constant. The coefficient of ability to pay is negative. A higher score on ability to pay is associated with a lower score on collection success, holding the others constant. The magnitudes suggest that the variables are summated scores. If so, the dependent variable runs from 18 to 90 and a coefficient of 1.307 means that one more point of understanding goes with a rise of 1.307 points in collection success.

Table 7. Multiple regression results (n = 100)

Variable	b	Std. error	t	p*	Partial r	Partial r²	95% CI of b*
Constant	41.108	4.915	8.364*	< 0.001	n.a.	n.a.	31.35 to 50.87
Understanding (X1)	1.307	0.383	3.408	0.001	0.330	0.109	0.547 to 2.067
Ability to pay (X2)	−2.120	0.410	−5.169	< 0.001	−0.469	0.220	−2.934 to −1.306
Awareness (X3)	0.947	0.326	2.909	0.005	0.286	0.082	0.300 to 1.594
Collection system (X4)	0.983	0.368	2.669	0.009	0.264	0.070	0.252 to 1.714
Model statistics	R = 0.550	R² = 0.303	Adj. R² = 0.274	F = 10.326	p < 0.001*	df = 4, 95	

Source: SPSS output as reported for b, standard error, t, R, R², adjusted R², and F, with the partial correlations as reported.
*Computed by the authors from the reported statistics with 95 degrees of freedom

The model explains a moderate share of the variation. The multiple correlation coefficient R is 0.550 and the coefficient of determination R^2 is 0.303, so 30.3 percent of the variation in collection success is associated with the four predictors and the remaining 69.7 percent with other factors. The adjusted R^2 is 0.274, and the standard error of the estimate is 15.602 points. The analysis of variance gives a regression sum of squares of 10,054.430 with 4 degrees of freedom, a residual sum of squares of 23,126.320 with 95 degrees of freedom, and a total of 33,180.750. In terms of the effect size conventions of Cohen, the ratio of explained to unexplained variance is 0.43*, which is a large effect. The moderate R^2 is typical for attitude data in which many relevant influences, such as trust in officials and the quality of public services, are not in the model.

4.5. Hypothesis testing

The F test gives an F value of 10.326, larger than the critical value of 2.467 at the 5 percent level with 4 and 95 degrees of freedom, and the significance level is below 0.001. The four factors are jointly significantly related to collection success, so H5 is supported.

The t tests show that each factor has a significant partial association. The t value is 3.408 for understanding, 2.909 for awareness, and 2.669 for the collection system, and all are above the critical value of 1.985, with significance levels of 0.001, 0.005, and 0.009. H1, H3, and H4 are therefore supported, with the expected positive sign. The t value of ability to pay is −5.169, which exceeds the critical value in absolute terms, with a significance level below 0.001. The association is significant, but its sign is opposite to the reference expectation, so H2 is not supported. The 95 percent confidence intervals of the coefficients, computed from the reported standard errors*, are 0.547 to 2.067 for understanding, −2.934 to −1.306 for ability to pay, 0.300 to 1.594 for awareness, and 0.252 to 1.714 for the collection system. None of them includes zero. The t values are compared in Figure 4.

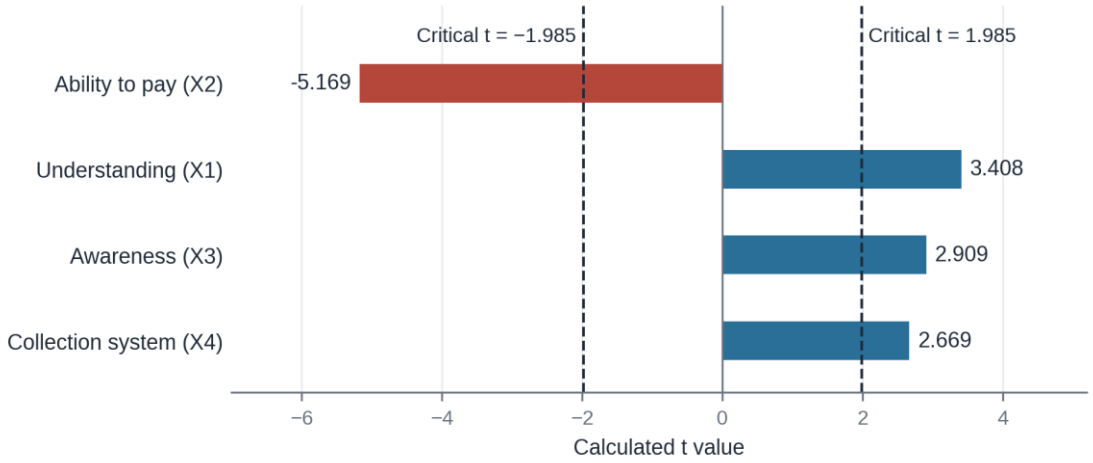


Figure 4. Calculated t values of the predictors compared with the critical values
Source: Processed primary data

The squared partial correlations show how much of the variation in the dependent variable is uniquely related to each predictor after the others are held constant. They are 0.220 for ability to pay (partial r of −0.469), 0.109 for understanding (0.330), 0.082 for awareness (0.286), and 0.070 for the collection system (0.264). Ability to pay has the largest contribution, more than twice that of understanding and about three times that of the collection system. H6 is therefore supported in the sense specified in the hypothesis, because one factor has the largest contribution. That factor, however, is related to collection success in the negative direction. Two cautions apply. The confidence intervals of the coefficients cannot be compared directly because the predictors are measured on the same scale of four items but are not standardized, and the ranking by partial correlation is descriptive. Table 8 summarizes the tests.

Table 8. Summary of hypothesis tests

Hypothesis	Test statistic	Critical value	Direction found	Decision
H1	t = 3.408 (understanding)	1.985	Positive	Supported
H2	t = −5.169 (ability to pay)	1.985 (absolute)	Negative	Not supported (opposite sign)
H3	t = 2.909 (awareness)	1.985	Positive	Supported
H4	t = 2.669 (collection system)	1.985	Positive	Supported
H5	F = 10.326 (simultaneous test)	2.467	Not applicable	Supported
H6	Largest partial r^2 = 0.220 (ability to pay)	Compared with 0.109, 0.082, 0.070	Negative	Supported (descriptive)

Source: Processed primary data

4.6. Discussion

The central results are that all four factors are significantly related to collection success and that three of them are related in the expected direction. Understanding, awareness, and the collection system are positively associated with the proactive attitude of taxpayers. The exception is ability to pay, which is negatively associated with the outcome and has the largest partial contribution of the four. This result is not consistent with a simple reading of the ability to pay principle, which would predict that taxpayers with greater capacity respond better. It is also different from the way the results are sometimes summarized in the local tradition, where a significant effect is treated as confirmation of the expected direction. The data support the significance of each factor but not the direction expected for capacity, and the discussion below considers why.

The positive association of understanding with collection success is in line with the view that a taxpayer who understands the purpose and nature of the tax is more engaged with it. This agrees with research showing that tax knowledge has several components and is related to voluntary compliance (Bornman & Ramutumbu, 2019; Munjeyi & Schutte, 2025) and with studies based on the theory of planned behavior in which understanding and attitudes are antecedents of compliance intention (Bani-Khalid et al., 2022; Nurwanah et al., 2018; Taing & Chang, 2021). It also fits the argument of the tax reform that simple and comprehensible rules broaden participation. Since the descriptive results show that almost half of the respondents give low answers on understanding, there is scope to raise understanding through outreach and simpler communication. The effect size is meaningful, since the coefficient of 1.307 is the second largest in absolute terms.

The positive association of awareness is consistent with the argument that the willingness to contribute, which the local tradition ties to the cognitive, affective, and conative components of attitude, supports proactive behavior. It fits the literature on tax morale, which links the willingness to pay to trust and to perceived fairness (Luttmer & Singhal, 2014), and the evidence that citizens engage with a state that they see as taxing them for a purpose (Weigel, 2020). It is also consistent with the slippery slope framework, in which voluntary compliance rests on trust in the authority (Batrancea et al., 2019). The polarized distribution of awareness, with a third of the answers at the top score and almost a quarter at the bottom, suggests that a group of taxpayers holds a firm sense of civic duty while another group does not, and this second group may be the main target of efforts to raise collection.

The positive association of the collection system indicates that taxpayers who find payment procedures, deadlines, penalties, and waiting times more acceptable also show a more proactive attitude. This agrees with evidence that the design of the collection process influences outcomes. The way that collectors are motivated has been shown to matter for collection results (Khan et al., 2016), and the move to electronic processes has been studied as a change in the interaction between taxpayers and officials (Okunogbe & Pouliquen, 2022). It also fits Indonesian research on modernized administration, which examines the power and trust dimensions of compliance in a digital setting (Darmayasa & Hardika, 2024). The uneven ratings of the four items, with the first two lower than the last two, suggest that some features of the system deserve more attention than others.

The negative coefficient of ability to pay is the most important and the most puzzling result, and several explanations can be offered. The first concerns the outcome variable. The proactive attitude measured here includes discussing tax matters with officials, checking the correctness of the official's calculation, asking for explanations, and objecting to unequal calculation. Such behavior is engagement, and engagement is not the same as cooperation. A taxpayer who feels the tax as a burden has more reason to ask questions, to check the calculation, and to object, while a taxpayer who finds the tax easy to bear may pay without engaging at all. Under this reading, a negative relationship between capacity and the proactive attitude is not a contradiction of the ability to pay principle. It shows that those with lower capacity engage more with the tax. This reading is consistent with experimental evidence that taxation prompts citizens to engage with the state (Weigel, 2020) and with the local explanation that high economic needs shape the way taxpayers approach the obligation to pay.

The second explanation concerns the content of the ability to pay items. They ask about the fit of the tax to the value of the property, the assessment base, the rate, and the ratio of the burden to income. Answers to such statements may reflect the perceived burden of the tax more than the actual capacity of the household, and taxpayers who feel burdened may be those who have thought most about how the tax is calculated. The low overall mean, at 2.67, and the near identical item means suggest that many respondents regard the tax as hard to bear. A third explanation is statistical. About 48 percent of the variance in ability to pay is shared with the other predictors, and in such a case the coefficient of one predictor can change sign or size once the others are held constant. The moderate overlap does not amount to serious multicollinearity (Kim, 2019), but the possibility that the negative sign is partly a conditional effect cannot be excluded. The bivariate correlations were not reported, so this possibility cannot be checked with the available output.

A fourth explanation is that the results reflect the way the data were collected. All variables were measured with the same questionnaire from the same respondents, which can inflate or distort the relationships between constructs (Podsakoff et al., 2012; Podsakoff et al., 2024). The concentration of answers at both ends of the scale points to a response style that could contribute to such effects. Finally, the cross sectional design cannot show causality. It is possible that proactive taxpayers judge

their own capacity more critically because they have studied the tax more closely. These explanations are informed by the literature and are not tested by the present data.

The polarization of the answers also has implications for the interpretation of the linear model. If the sample consists of two groups with different attitudes, a single set of coefficients averages over both. The regression finds significant relationships, but it cannot show whether they hold equally for engaged and for disengaged taxpayers. Future work could examine this with mixture models or by comparing groups.

A comparison with the collection figures in the introduction helps to place the findings. The average collection ratio in the ward was around three quarters of the amount assessed, which leaves a persistent shortfall. The survey does not measure actual payment, so the findings cannot explain the shortfall directly. What they show is that the attitudes associated with engagement with the tax are related to understanding, awareness, and the ease of the collection system, and that engagement is greater among those who feel less able to pay. If the shortfall is concentrated among taxpayers with low capacity, then collection policy should combine measures that address the burden, such as fair valuation and instalment options, with measures that raise understanding and ease payment. This inference is plausible but not proven by the data.

Reviews of the compliance literature help to place the results. They portray compliance as the outcome of several interacting forces, among them trust, power, norms, and fairness (Alm, 2019; Slemrod, 2019), and evidence on deterrence indicates that the effect of enforcement varies by setting (Dularif et al., 2019). Experimental work shows that social norms shape the way the tax system affects evasion (Górecki & Letki, 2021), that dilemmas can lower tax morale (Deglaire et al., 2021), and that compliance in laboratory games responds to context (Alm & Malézieux, 2021). In such a picture, a finding that capacity relates negatively to an engagement measure is not surprising. Capacity is one input among many, and its role depends on how the tax is perceived.

4.7. Implications for practice

For local tax administrators, the findings point to four lines of action. First, raise understanding through communication that explains what the tax is, how it is computed, and how the proceeds are used. Since nearly half of the respondents give low answers on understanding, there is clear room for improvement, and simple and consistent messages are more likely to be effective than technical ones. Second, build awareness by showing taxpayers the local benefits of the tax, since the willingness to contribute depends on the belief that the proceeds are used for the public good and distributed fairly (Batrancea et al., 2019; Luttmer & Singhal, 2014).

Third, improve the collection system. The positive relationship suggests that easier procedures, clear deadlines, fair application of penalties, and shorter queues are related to a more proactive attitude. Modernizing the process, for example through electronic payment and clear digital records, may help to reduce friction for taxpayers (Darmayasa & Hardika, 2024; Okunogbe & Pouliquen, 2022), and the motivation of collection agents deserves attention (Khan et al., 2016). Fourth, take the burden seriously. Because taxpayers who feel less able to pay are more engaged, they should be given effective channels for questions and objections, and valuation and calculation should be explained transparently. Handling objections quickly and fairly is likely to strengthen trust and to turn engagement into cooperation. Analytical work on how to raise land and building tax revenue in Indonesia can inform the choice of instruments (Samudra, 2024).

5. CONCLUSION

This study examined whether taxpayer understanding, ability to pay, awareness, and the collection system are related to the success of property tax collection in a ward of Kediri, using a survey of 100 household taxpayers and multiple linear regression. The four factors are jointly and individually significant correlates of collection success, and together they account for about 30 percent of its variation. Understanding, awareness, and the collection system are positively related to the outcome, as expected. Ability to pay is negatively related and has the largest partial contribution, which contradicts the reference expectation of the ability to pay principle.

The most plausible reading of the negative result is that the outcome measure captures the engagement of taxpayers with the tax, including discussion, checking, and objection, and that taxpayers

who feel more burdened engage more. This reading, together with the possibilities that the ability to pay items capture perceived burden, that shared variance among the predictors affects the coefficient, and that common method variance contributes, is informed by the literature and is not tested by the data. It should be treated as an interpretation rather than as a finding.

The study has limitations that shape how far the results can be generalized. The outcome is an attitudinal and perceptual measure and not the amount of tax collected, so the findings say little about actual payment. All data come from one ward and one questionnaire, which limits generalization and allows common method bias. The design is cross sectional, which prevents causal inference. The answers are strongly polarized, and a single linear model may hide differences between groups. The collection statistics and the survey are drawn from the second half of the 2000s, and the administration of property tax in Indonesia has since changed, including its decentralization to local governments (von Haldenwang, 2017), so the results should be checked against current conditions. Some frequency counts in the source tables do not sum to the sample size, and the bivariate correlations and standardized coefficients were not available.

Future research can address these limitations in several ways. Studies that link survey responses to the actual payment records of the same taxpayers would show whether attitudes predict payment. Measures that separate engagement, complaint, and cooperation would clarify what a proactive attitude means. Larger samples from several wards and cities would improve generalization, and models that add trust in officials, perceived fairness of valuation, and the quality of public services would test the omitted factors suggested by the behavioral literature. Experimental designs, such as field experiments on the form of communication, the ease of payment, and the incentives of collectors, would allow causal questions to be answered (Khan et al., 2016; Okunogbe & Pouliquen, 2022). Finally, mixture or multigroup models could test whether the relationships differ between engaged and disengaged taxpayers.

Abbreviations
PBB, Pajak Bumi dan Bangunan (land and building tax)
VIF, Variance Inflation Factor
KS, Kolmogorov Smirnov
SPSS, Statistical Package for the Social Sciences

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All authors contributed equally to the research and to the writing of the article.

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Availability of data and materials
The questionnaire data are held by the authors and will be used solely for this research. Data requests can be made via email to the corresponding author, stating the reason for the request.

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