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The Effect of Tax Knowledge and Taxpayer Attitudes on The Effectiveness of Land and Building Tax Revenue Through Taxpayer Compliance as an Intervening Variable (a Study in Garut Kota District, Garut Regency)

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Abstract

This study analyzes the direct and indirect effects of tax knowledge and taxpayer attitudes on Land and Building Tax (LBT) revenue effectiveness, utilizing taxpayer compliance as an intervening variable. Focused on the high-potential yet underperforming Garut Kota District, this research employs a quantitative methodology integrating Partial Least Squares-Structural Equation Modeling (PLS-SEM) and Importance-Performance Map Analysis (IPMA). Data were collected from 100 respondents determined using the Slovin technique. Empirical results indicate that tax knowledge and taxpayer attitudes exert a significant positive effect on taxpayer compliance, which subsequently drives LBT revenue effectiveness. Crucially, compliance successfully mediates the impact of both knowledge and attitudes on revenue effectiveness. The formulated model accounts for 77.1% of the revenue effectiveness variance. Furthermore, IPMA highlights that taxpayer attitudes possess the most substantial influence. These findings provide practical insights for local governments to formulate targeted tax strategies, strengthen administration, and optimize future tax revenues.

KEYWORDS

tax knowledge; taxpayer attitudes; taxpayer compliance; tax revenue effectiveness; land and building tax.

Introduction

Property taxation, specifically the Land and Building Tax, serves as a highly promising revenue stream capable of significantly boosting public income. Its strategic value lies in its extensive scope, as it covers all land and structural assets located throughout the Indonesian archipelago., making its scope extremely broad (Rohmatunnisa, 2023). Although the Land and Building Tax holds significant potential as a source of development financing, the achievement of its revenue collection is still not optimal (Dewi et al., 2024). Different levels of tax knowledge and taxpayer attitudes can influence the perception of each taxpayer in determining their compliance with carrying out tax obligations (Pransiska & Wardhani, 2022).. Taxpayer compliance reflects the taxpayer's readiness to make tax payments. Thus, taxpayer compliance is a form of obedience in implementing the provisions regarding applicable tax regulations (Safitri, 2022). Knowledge about taxes encourages a taxpayer's attitude to understand the important role of taxes and fosters awareness in fulfilling their tax obligations. The higher the level of taxpayer knowledge regarding the importance of compliance, the broader their insight into developing a compliant attitude regarding taxation. The involvement of taxpayers in making tax payments is evidence of citizens' contribution to economic development and growth (Kurniawan et al., 2022).

The success of Land and Building Tax revenue heavily depends on the intrinsic elements attached to the taxpayers themselves, which can be explained through several foundational behavioral theories.

a) Theory of Planned Behavior (TPB): Developed by Icek Ajzen, TPB posits that attitude is a crucial factor influencing a person's intention and behavior (Adhikara et al., 2022). Attitude represents a thought or response of accepting or rejecting something that drives human behavior. It is a positive or negative evaluation formed from an individual's beliefs and feelings regarding a specific object. In the context of taxation, a favorable attitude reflects the extent to which a taxpayer supports and understands the importance of paying taxes, thereby voluntarily complying with their obligations. *(Note: While Attribution Theory is often linked in broader behavioral tax studies (Adhikara et al., 2022), this research primarily grounds its behavioral analysis on TPB to specifically address taxpayer attitudes).*
b) Tax Compliance Theory: Proposed by Stanley Milgram, compliance theory explains the conditions under which an individual obeys established commands or rules (Talaohu et al., 2024). Sociologically, there are two perspectives on compliance: instrumental and normative. The instrumental perspective assumes that individuals are driven by self-interest and view changing regulations as factors affecting their behavior. Conversely, the normative perspective links compliance to moral values that often conflict with mere personal self-interest (Talaohu et al., 2024).

Garut Kota District, located in Garut Regency, is one of the areas with a fairly large potential for Land and Building Tax revenue. This condition is supported by the size of the area and the large number of tax objects spread across various regions (Nuryanah & Gunawan, 2022). However, efforts to realize the effectiveness of Land and Building Tax revenue still face challenges related to the level of taxpayer compliance every year. This phenomenon indicates a close relationship between taxpayer behavior and the effectiveness of Land and Building Tax revenue, considering that the level of taxpayer compliance will directly impact the realization of local tax revenue (Hukom et al., 2024). In 2024, Garut Kota District established a Land and Building Tax assessment target of IDR 2,164,854,385, encompassing 39,577 registered taxpayers. However, actual revenue realization only reached 55.34%, amounting to IDR 1,198,080,991 collected from 22,655 compliant individuals. This left a substantial deficit of IDR 966,773,394, attributed to 16,922 non-compliant taxpayers. The failure to meet this specific target directly impedes the generation of Regional Original Income (PAD). Such discrepancies between potential and actual revenue are frequently driven by administrative barriers, low taxpayer compliance, and suboptimal tax collection strategies. Motivated by these empirical challenges, this study is titled *"The Effect of Tax Knowledge and Taxpayer Attitudes on the Effectiveness of Land and Building Tax Revenue Through Taxpayer Compliance as an Intervening Variable (A Study in Garut Kota District, Garut Regency)."*

While numerous previous studies have explored the direct impact of tax administration or knowledge on tax revenue, there is an inconsistency in how these variables translate into actual financial outcomes. The prevailing research gap lies in the assumption that knowledge and attitudes automatically lead to increased revenue. This study argues that good tax knowledge and positive taxpayer attitudes will not have a tangible impact on increasing Land and Building Tax revenue if they are not accompanied by concrete actions—namely, taxpayer compliance. Therefore, taxpayer compliance functions as a crucial mediator (intervening variable). Compliance serves to strengthen or weaken the influence of tax knowledge and taxpayer attitudes. The impact of these intrinsic factors on the effectiveness of tax revenue will only be achieved optimally and effectively if the taxpayer demonstrates a high level of compliance. By positioning compliance as a bridge, this study provides a more comprehensive behavioral model. Furthermore, this study addresses an empirical gap by combining Partial Least Squares-Structural Equation Modeling (PLS-SEM) with Importance-Performance Map Analysis (IPMA) to identify precise, prioritized areas for local government intervention.

Based on the theoretical framework and the justification of the mediation model elaborated above, the researcher formulates the following primary and mediating hypotheses:

Primary Hypotheses (Direct Effects):

a) H1: Tax knowledge has a significant effect on taxpayer compliance.
b) H2: Taxpayer attitudes have a significant effect on taxpayer compliance.
c) H3: Taxpayer compliance has a significant effect on the effectiveness of Land and Building Tax revenue.
d) H4: Tax knowledge has a significant effect on the effectivene ss of Land and Building Tax revenue.
e) H5: Taxpayer attitudes have a significant effect on the effectiveness of Land and Building Tax revenue.

Mediation and Analytical Hypotheses:

a) H6: Taxpayer compliance mediates the relationship between tax knowledge and the effectiveness of Land and Building Tax revenue.
b) H7: Taxpayer compliance mediates the relationship between taxpayer attitudes and the effectiveness of Land and Building Tax revenue.
c) H8: The Importance-Performance Map Analysis (IPMA) approach successfully identifies the specific factors of tax knowledge and taxpayer attitudes that exert the greatest influence on prioritizing the effectiveness of Land and Building Tax revenue.

Methods

This study employs a quantitative methodology. As outlined by Sugiyono (2022), quantitative research aims to systematically construct models and hypotheses that elucidate the phenomena under investigation, thereby clarifying the interconnections among variables. The structural model in this research comprises Tax Knowledge (X1) and Taxpayer Attitudes (X2) as independent variables, the Effectiveness of Land and Building Tax Revenue (Z) as the dependent variable, and Taxpayer Compliance (Y) functioning as a mediating variable. Additionally, the analysis is supplemented by an *Importance-Performance Map Analysis* (IPMA).

The target population for this research comprises all registered Land and Building Tax payers within Garut Kota District, Garut Regency in 2024, totaling 39,577 individuals. Given the extensive population, a sampling strategy was implemented to ensure research efficiency. The sample size was determined using the Slovin formula with a predefined margin of error of 10%. The calculation resulted in a minimum sample requirement of 99.74, which was rounded up to 100 respondents ($n = 39{,}577 / (1 + 39{,}577 * 0.10^2)$). To select these 100 participants from the vast population, a Proportional Stratified Random Sampling technique was applied, ensuring that respondents were selected objectively and proportionately across the various sub-districts.

Primary data were gathered through the distribution of a structured questionnaire. The questionnaire development process began with a comprehensive literature review to extract established indicators for each research variable. These theoretical constructs were then translated into specific survey items. Responses were quantified using a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree).

a) The tax knowledge variable is measured through the taxpayer's understanding of tax provisions, functions, objects, payment procedures, and tax rates.
b) The taxpayer attitude variable includes assessments of tax services, applicable rules, tax administration, and attitudes towards sanctions.
c) Taxpayer compliance is measured based on the ability to understand rules, fill out forms correctly, calculate the owed tax accurately, and make timely payments.
d) The effectiveness of Land and Building Tax revenue is measured through the dimensions of goal achievement, integration, and adaptation.
e) Prior to full-scale distribution, the questionnaire instrument was evaluated for face validity and clarity to ensure respondents could accurately interpret the items.

The tax knowledge variable is measured through the taxpayer's understanding of tax provisions, tax functions, tax objects, tax payment procedures, and understanding related to tax rates. Meanwhile, the taxpayer attitude variable includes assessments of tax services, applicable rules, tax administration, and taxpayer attitudes towards sanctions. Taxpayer compliance is measured based on the ability to understand tax rules, fill out tax forms completely and correctly, calculate the amount of tax owed accurately, and make tax payments according to the set time. The effectiveness of Land and Building Tax revenue variable is measured through the dimensions of goal achievement, integration, and adaptation. Data collection methods used field studies to obtain accurate, factual, and in-depth information from primary sources, namely observations, questionnaires. In addition, Secondary data was acquired through a comprehensive literature review, encompassing scientific journals, articles, and official government policy documents relevant to the research problem (Soetjahyo et al., 2024).

This study strictly adhered to academic ethical standards during the primary data collection process. Prior to answering the questionnaire, all respondents were provided with clear information regarding the study's purpose and gave their informed consent. Participation was entirely voluntary, and respondents had the right to withdraw at any time without penalty. Furthermore, the questionnaire guaranteed absolute anonymity and data confidentiality; no sensitive personal identification was recorded, ensuring that the data were used solely for academic purposes.

To analyze the data and assess the intricate relationships between variables, this research employed Partial Least Squares-Structural Equation Modeling (PLS-SEM) using Smart-PLS software (Yamin, 2023). In accordance with the methodology proposed by Hair et al. (2022), the PLS-SEM procedure was divided into two distinct stages: the evaluation of the measurement model (outer model) and the structural model (inner model). The integrity of the outer model was rigorously tested using reliability indicators, such as Cronbach's Alpha and Composite Reliability, alongside a comprehensive suite of validity parameters, which included outer loadings, Average Variance Extracted (AVE), the Fornell-Larcker criterion, and the Heterotrait-Monotrait Ratio (HTMT). Conversely, the inner model was assessed using inner VIF, path coefficients, R^2, f^2, and Q^2 values, with bootstrapping applied for significance testing. Additionally, prerequisite checks for multicollinearity (VIF) and predictive relevance were completed before hypothesis testing, and an *Importance-Performance Map Analysis* (IPMA) was integrated to pinpoint critical areas for improvement (Sarstedt et al., 2024).

In scientific research, variables represent the measurable characteristics of a concept that can be empirically observed and evaluated to determine relationships or causal effects (Syahrizal & Jailani, 2023) . This study employs a causal-effectual design utilizing three categories of variables, further enriched by an Importance-Performance Map Analysis (IPMA). The conceptual framework is structured as follows:

a) Independent Variables: Tax Knowledge (X1) and Taxpayer Attitudes (X2).
b) Mediating (Intervening) Variable: Taxpayer Compliance (Y).
c) Dependent Variable: Effectiveness of Land and Building Tax Revenue (Z).

To ensure these abstract concepts can be empirically observed, analyzed, and tested, they must be translated into concrete, measurable indicators through a systematic operationalization process (Lasmita & Muspawi, 2024) . In this quantitative study, the operationalization involves specifically defining each variable and employing a structured measurement instrument.

Result and Discussion

Respondent Characteristic

Based on gender distribution, the majority of respondents in this study are female, accounting for 56% (56 individuals), while males account for 44% (44 individuals). The higher involvement of female respondents indicates their active role in managing household administration, including compliance with tax obligations. This demographic distribution provides valuable insight into how gender dynamics and household roles may influence tax knowledge, attitudes, and ultimately, compliance behavior (see Table 1).

Regarding age distribution, the largest segment of respondents falls within the 41-50 years age group at 36%, followed by those over 51 years at 27%, 31-40 years at 25%, and 21-30 years at 12%. This indicates that the majority of taxpayers in Garut Kota District are in a mature, productive phase with stable economic conditions and financial responsibilities. This demographic profile is crucial, as taxpayers in these age brackets generally have more

Table 1. Respondent Characteristic based on Gender

No	Category	Frequency	Percentage
1	Man	44	44%
2	Woman	56	56%
	Total	100	100%

Table 2. Respondent Characteristic based on Age

No	Category	Frequency	Percentage
1	21-30 Years	12	12%
2	31-40 Years	25	25%
3	41-50 Years	36	36%
4	>51 Years	27	27%
	Total	100	100%

Table 3. Respondent Characteristic based on Education Level

No	Kategori	Frekuensi	Persentase
1	Primary/Junior High School	4	4%
2	High School/Vocational School	39	39%
3	Diplomas	7	7%
4	Bachelor Degree (S1)	42	42%
5	Master's/Doctorate degrees	8	8%
	Total	100	100%

experience in fulfilling tax obligations, which significantly contributes to the potential optimization of Land and Building Tax revenue (see Table 2).

In terms of educational background, the respondents are predominantly well-educated, with 42% holding a Bachelor's degree (S1) and 39% being Senior High School/Vocational School (SMA/SMK) graduates. Other educational backgrounds include Master's/Doctorate degrees (8%), Diplomas (7%), and Primary/Junior High School (4%). A higher level of education is generally associated with a better capacity to absorb information, understand tax regulations, and comprehend administrative procedures. Therefore, this educational profile strongly correlates with the respondents' ability to grasp tax knowledge and form positive attitudes toward tax compliance (see Table 3).

Based on occupational background, the respondents come from various sectors, with Civil Servants (PNS) forming the largest group at 24%, followed by Entrepreneurs (20%), Teachers/Lecturers (16%), Private Employees (15%), Housewives (12%), and others (13%). The dominance of Civil Servants and Entrepreneurs implies that most respondents have stable or independent sources of income. The variety in occupations provides a comprehensive picture of how different financial capabilities, income stability, and professional backgrounds impact tax compliance priorities and behaviors in supporting the effectiveness of tax revenue (see Table 4).

This study was analyzed through the evaluation of the measurement model (outer model) followed by the evaluation of the structural model (inner model) (Hair et al., 2021). The following is a picture of the research model analyzed using SmartPLS version 4.0 software (see figure 1).

This study primarily seeks to examine the impact of tax knowledge and taxpayer attitudes on the collection effectiveness of Land and Building Tax in Garut Kota District, utilizing taxpayer compliance as an intervening variable. In

Table 4. Respondent Characteristic based on Occupation

No	Chategory	Frekuensi	Persentase
1	Civil Servants (PNS)	24	24%
2	Private Employees	15	15%
3	Teachers/Lecturers	16	16%
4	Entrepreneurs	20	20%
5	Housewives	12	12%
6	Others	13	13%
	Total	100	100

Table 5. Composite Reliability and Cronbach's Alpha

Variable	Cronbach's alpha	Composite reliability	Average variance extracted (AVE)
Effectiveness of LBT Revenue	0.942	0.954	0.777
Taxpayer Compliance	0.955	0.945	0.725
Tax Knowledge	0.946	0.936	0.636
Taxpayer Attitudes	0.921	0.935	0.644

Source: Researcher's Processed Data 2026

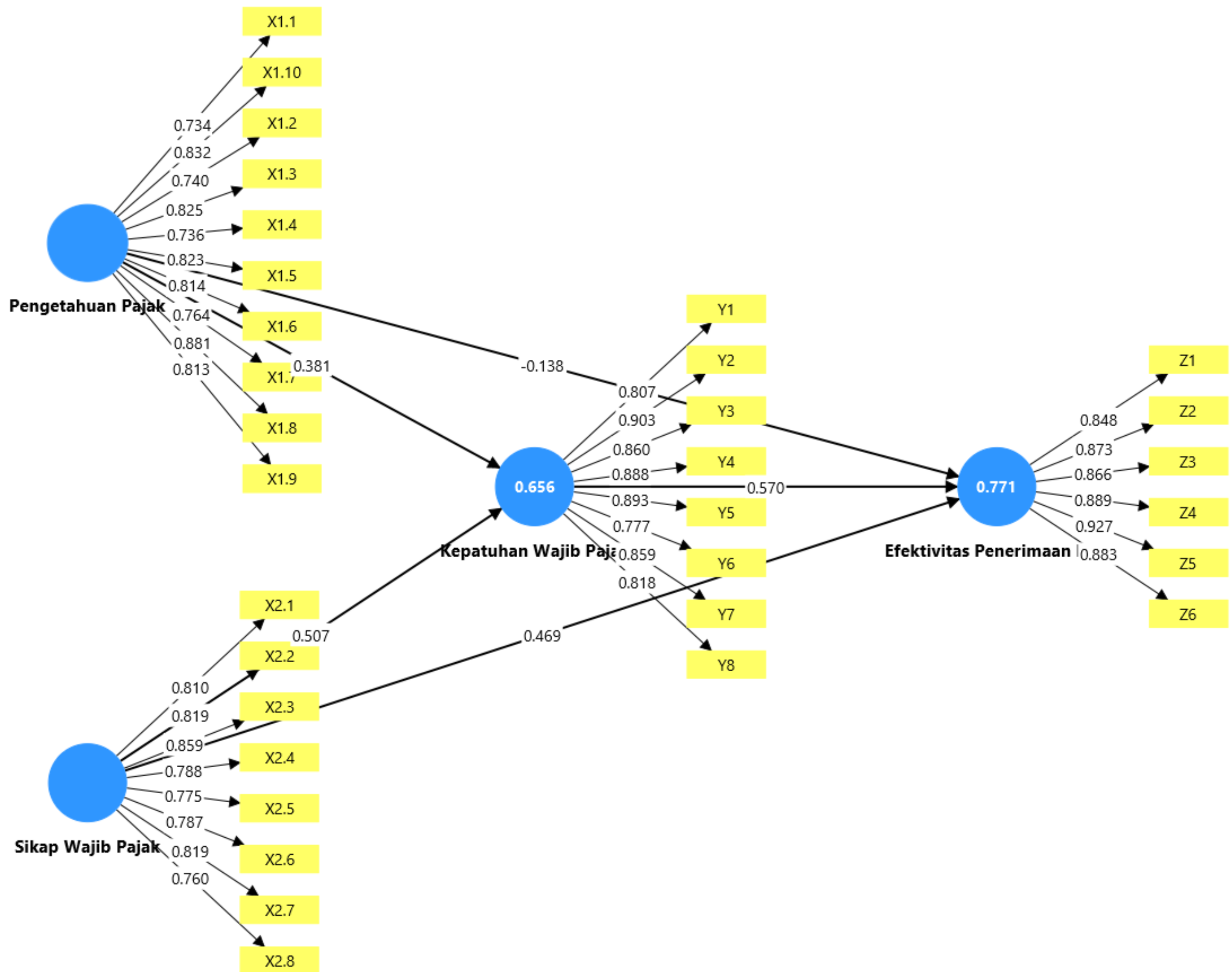

Figure 1. Research Model

addition, the research integrates an *Importance-Performance Map Analysis* (IPMA). To ensure the measurement instruments meet strict academic criteria, the outer model was rigorously evaluated. Specifically, construct reliability was verified using *Cronbach's Alpha* (CA) and *Composite Reliability* (CR), whereas construct validity was assessed via the *Average Variance Extracted* (AVE), with the outcomes presented below (see Table 5).

As demonstrated by the analytical output, every variable exhibits a Cronbach's Alpha exceeding 0.70, reflecting strong internal consistency among the construct indicators. Furthermore, the Composite Reliability scores surpass the 0.70 threshold, confirming that the measurement model satisfies all essential reliability prerequisites. For validity assessment, the Average Variance Extracted (AVE) was utilized, with all variables achieving scores above 0.50. This confirms that the latent variables account for over half of the variance in their respective indicators. Consequently, the research model demonstrates robust validity and reliability, justifying its progression to the subsequent analytical phase.

The following is one of the analyses in the evaluation of the structural model (inner model). Before testing the structural model hypotheses, it is necessary to check for the presence of multicollinearity between variables using the inner VIF statistical measure. This result confirms that the parameter estimation results in PLS-SEM are unbiased. The VIF table is presented below (see Table 6).

The VIF value for each variable relationship ranges from 1.753 to 2.903, meaning it is below the critical limit of 5.0 and also less than 3.3. These results indicate that the research model does not experience multicollinearity problems, so the relationships between variables can be analyzed more accurately. This condition also reinforces that parameter estimation in the PLS-SEM method is stable and unbiased. Each independent variable in this study is not strongly correlated or excessively overlapping, making it suitable for the next stage of structural analysis.

The evaluation of the measurement model (outer model) is conducted to assess the quality of the research instruments, ensuring that each indicator accurately and consistently captures the intended latent constructs. Following the development of the initial model, the PLS Algorithm is executed as a prerequisite step prior to the formal evaluation of validity and reliability. The computational results are presented in the following table (see Table 7).

An analysis of the outer loading matrix for the variables—tax knowledge, taxpayer attitudes, taxpayer compliance, and the effectiveness of Land and Building Tax revenue—reveals that every indicator yields an outer loading value exceeding the 0.7 threshold. Consequently, all indicators are considered valid based on the convergent validity criteria. These robust values signify a strong correlation between each indicator and its corresponding construct, confirming that they are highly appropriate for use in the subsequent analytical phases.

Following the initial model evaluation, discriminant validity was assessed using the Fornell-Larcker criterion. This approach compares the square root of the Average Variance Extracted (AVE) for each construct against its correlations with other latent variables to ensure empirical distinctiveness. The results are presented in the following table (see Table 8).

The analysis demonstrates that the square root of the AVE for every variable exceeds its inter-construct correlations. For instance, the Effectiveness of Land and Building Tax Revenue exhibits a square root of AVE (0.881) that is higher than its

Table 6. VIF

Relationship	VIF
Taxpayer Compliance -> Effectiveness of LBT Revenue	2.903
Tax Knowledge -> Effectiveness of LBT Revenue	2.175
Tax Knowledge -> Taxpayer Compliance	1.753
Taxpayer Attitudes -> Effectiveness of LBT Revenue	2.499
Taxpayer Attitudes -> Taxpayer Compliance	1.753

Source: Researcher's Processed Data 2026

Table 7. Outer Loading Matrix

Variable	Outer loadings
X1.1 <- Tax Knowledge	0.734
X1.10 <- Tax Knowledge	0.832
X1.2 <- Tax Knowledge	0.740
X1.3 <- Tax Knowledge	0.825
X1.4 <- Tax Knowledge	0.736
X1.5 <- Tax Knowledge	0.823
X1.6 <- Tax Knowledge	0.814
X1.7 <- Tax Knowledge	0.764
X1.8 <- Tax Knowledge	0.881
X1.9 <- Tax Knowledge	0.813
X2.1 <- Taxpayer Attitudes	0.810
X2.2 <- Taxpayer Attitudes	0.819
X2.3 <- Taxpayer Attitudes	0.859
X2.4 <- Taxpayer Attitudes	0.788
X2.5 <- Taxpayer Attitudes	0.775
X2.6 <- Taxpayer Attitudes	0.787
X2.7 <- Taxpayer Attitudes	0.819
X2.8 <- Taxpayer Attitudes	0.760
Y1 <- Taxpayer Compliance	0.807
Y2 <- Taxpayer Compliance	0.903
Y3 <- Taxpayer Compliance	0.860
Y4 <- Taxpayer Compliance	0.888
Y5 <- Taxpayer Compliance	0.893
Y6 <- Taxpayer Compliance	0.777
Y7 <- Taxpayer Compliance	0.859
Y8 <- Taxpayer Compliance	0.818
Z1 <- Effectiveness of LBT Revenue	0.848
Z2 <- Effectiveness of LBT Revenue	0.873
Z3 <- Effectiveness of LBT Revenue	0.866
Z4 <- Effectiveness of LBT Revenue	0.889
Z5 <- Effectiveness of LBT Revenue	0.927
Z6 <- Effectiveness of LBT Revenue	0.883

Source: Researcher's Processed Data 2026

Table 8. Fornell-Lacker Criterion

Variable	Effectivenes s of LBT Revenue	Taxpayer Compliance	Tax Knowledge	Taxpayer Attitudes	Output
Effectiveness of LBT Revenue	**0.881**				Valid
Taxpayer Compliance	0.826	**0.852**			Valid
Tax Knowledge	0.576	0.713	**0.798**		Valid
Taxpayer Attitudes	0.801	0.757	0.655	**0.803**	Valid

Source: Researcher's Processed Data 2026

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correlations with taxpayer compliance (0.852), tax knowledge (0.798), and taxpayer attitudes (0.803). These results confirm that all variables are empirically distinct and free from significant conceptual overlap. Consequently, this robust discriminant validity ensures the measurement model's reliability, indicating that the observed relationships are not distorted by measurement errors or multicollinearity. It further validates that tax knowledge and taxpayer attitudes uniquely contribute to taxpayer compliance and revenue effectiveness in Garut Kota District.

The Heterotrait-Monotrait Ratio (HTMT) is utilized to evaluate discriminant validity, ensuring that each latent construct is empirically distinct from one another. According to Hair et al. (2022), HTMT values must fall below the 0.90 threshold to avoid discriminant validity issues. The analysis yielded the following HTMT values: taxpayer compliance and revenue effectiveness (0.870), tax knowledge and revenue effectiveness (0.609), tax knowledge and taxpayer compliance (0.756), taxpayer attitudes and revenue effectiveness (0.865), taxpayer attitudes and taxpayer compliance (0.805), and taxpayer attitudes and tax knowledge (0.706). Since all obtained values are strictly below the recommended 0.90 threshold, the research model successfully satisfies the HTMT criteria. This verifies that every variable possesses distinct empirical characteristics and accurately measures its intended construct without significant conceptual overlap. The HTMT result can be seen in this table below (see Table 9).

The subsequent phase in the structural model evaluation entails hypothesis testing, which comprises both primary (direct) and mediating hypotheses. The outcomes of the primary hypothesis tests are detailed in the table below (see Table 10).

Hypothesis testing aims to determine the statistical significance of the relationships among the variables within the research model. A hypothesis is accepted confirming a significant structural effect if the t-statistic exceeds the critical value of 1.96 and the p-value is strictly less than 0.05. Additionally, the path coefficient dictates the direction of the relationship: a positive coefficient signifies a direct, unidirectional impact, whereas a negative coefficient indicates an inverse relationship.

As presented in Table 11, the R^2 value for the Effectiveness of Land and Building Tax (LBT) Revenue is 0.771, indicating that the research model accounts for 77.1% of the variation in revenue effectiveness, which is considered a strong (substantial) explanatory power. Meanwhile, R^2 the value for Taxpayer Compliance is 0.656, reflecting moderate explanatory power. Furthermore, the predictive relevance (Q^2) was evaluated using the blindfolding procedure. The Q^2 values for both Effectiveness of LBT Revenue (0.615) and Taxpayer Compliance (0.643) are significantly greater than zero (>0). According to PLS-SEM reporting standards, these values demonstrate that the structural model possesses high predictive relevance for its endogenous constructs.

As a final step in the analysis of this study, an Importance-Performance Map Analysis (IPMA) approach was carried out to identify indicators that have a significant influence on the effectiveness of Land and Building Tax revenue but still have a relatively low level of achievement. The analysis results are presented in the following figure (see Figure 2).

Based on the analysis results, indicators spread across four quadrants can be categorized according to their respective levels of importance and performance, showing

Table 9. Heterotrait-Monotrait Ratio

Variable/Relationship	Heterotrait-monotrait ratio (HTMT)
Tax Compliance <-> Effectiveness of LBT Revenue	0.870
Tax Knowledge <-> Effectiveness of LBT Revenue	0.609
Tax Knowledge <-> Tax Compliance	0.756
Taxpayer Attitudes <-> Effectiveness of LBT Revenue	0.865
Taxpayer Attitudes <-> Tax Compliance	0.805
Taxpayer Attitudes <-> Tax Knowledge	0.706

Source: Researcher's Processed Data 2026

Table 10. Main Hypothesis Testing

Hypotesis	Hypotesis Statement	Path Coefficients	T-Statistic	P-Values	95% Trust Path Coefficient		F-Square	Information
					Bottom Boundary	Top Boundary		
H1	Tax Knowledge-> Tax Compliance	0,381	3.060	0,002	0,139	0,629	0,241	Moderat
H2	Taxpayer Attitudes-> Tax Compliance	0,507	4.103	0,000	0,246	0,720	0,425	Tinggi
H3	Tax Compliance-> Effectiveness of LBT Revenue	0,570	5.535	0,000	0,351	0,756	0,489	Tinggi
H4	Tax Knowledge-> Effectiveness of LBT Revenue	-0,138	2.064	0,039	-0,322	-0,039	0.038	Rendah
H5	Taxpayer Attitudes-> Effectiveness of LBT Revenue	0,469	4.206	0,000	0,246	0,720	0,385	Tinggi

Source: Researcher's Processed Data 2026 which aspects need to be the main priority in improving the Effectiveness of Land and Building Tax Revenue. Quadrant I represents aspects that are top priorities due to high importance but low performance. The indicators located in this quadrant are aspects that have a major influence on the effectiveness of Land and Building Tax revenue, but currently still show low performance. Therefore, interventions and improvements are needed so that their impact on performance becomes optimal. Several indicators included in this category are X1.1, namely knowledge regarding obligations as a Land and Building Tax payer according to applicable regulations; X1.3, namely knowledge that Land and Building Tax is used for regional development; X1.4, namely knowledge that Land and Building Tax plays a role in providing public services and facilities; and X1.7, namely knowledge that Land and Building Tax payments can be made directly or online.

Based on the Importance-Performance Map Analysis (IPMA) presented in Figure 2, the indicators are distributed across four distinct quadrants according to their respective levels of importance and performance. This distribution identifies which aspects require prioritized intervention to enhance the Effectiveness of Land and Building Tax Revenue:

a) Quadrant I (Top Priority – High Importance, Low Performance): Indicators in this quadrant significantly influence the effectiveness of Land and Building Tax revenue but currently exhibit low performance, thus requiring immediate intervention for optimal impact. These primarily involve foundational tax knowledge, including awareness of taxpayer obligations (X1.1), understanding that taxes fund regional development (X1.3) and public facilities (X1.4), and knowing available payment methods (X1.7).
b) Quadrant II (Maintain Performance – High Importance, High Performance): This quadrant contains highly critical indicators that are already performing well. Strategies should focus on maintaining these aspects to ensure maximum contribution to revenue. Key indicators include clear administrative procedures (X2.6), a sense of responsibility for late payments (X2.7), the deterrent effect of sanctions (X2.8), and strong compliance behaviors, such as fulfilling overall obligations (Y1), obeying rules (Y2), providing accurate property information and documents (Y3, Y4), paying according to the NJOP (Y5), and making timely payments without delay (Y7, Y8).
c) Quadrant III (Low Priority – Low Importance, Low Performance): Indicators here have lower significance and poor performance, making them non-urgent for immediate improvement strategies. These indicators mostly relate to specific technical tax knowledge, such as awareness of sanction regulations (X1.2), initial administrative procedures (X1.5), required documentation (X1.6), annual payment deadlines (X1.8), and details regarding applicable tax rates and their potential changes (X1.9, X1.10).
d) Quadrant IV (Non-Priority – Low Importance, High Performance): This quadrant consists of indicators with lower importance but high performance, meaning they are well-executed but do not require urgent resource allocation for improvement. These include positive taxpayer attitudes such as acting professionally during payment (X2.1), the ease of obtaining tax information (X2.2), accepting the fairness of tax regulations (X2.3, X2.4), a willingness to follow administrative procedures (X2.5), and the clarity of the payment compliance process (Y6).

Table 11. Structural Model Assessment (R2 and Q2)

Endogenous Construct	R-square	Q-square	Predictive Relevance Interpretation
Effectiveness of LBT Revenue (Z)	0.771	0.615	Strong explanatory power and high predictive relevance
Taxpayer Compliance (Y)	0.656	0.643	Moderate explanatory power and high predictive relevance

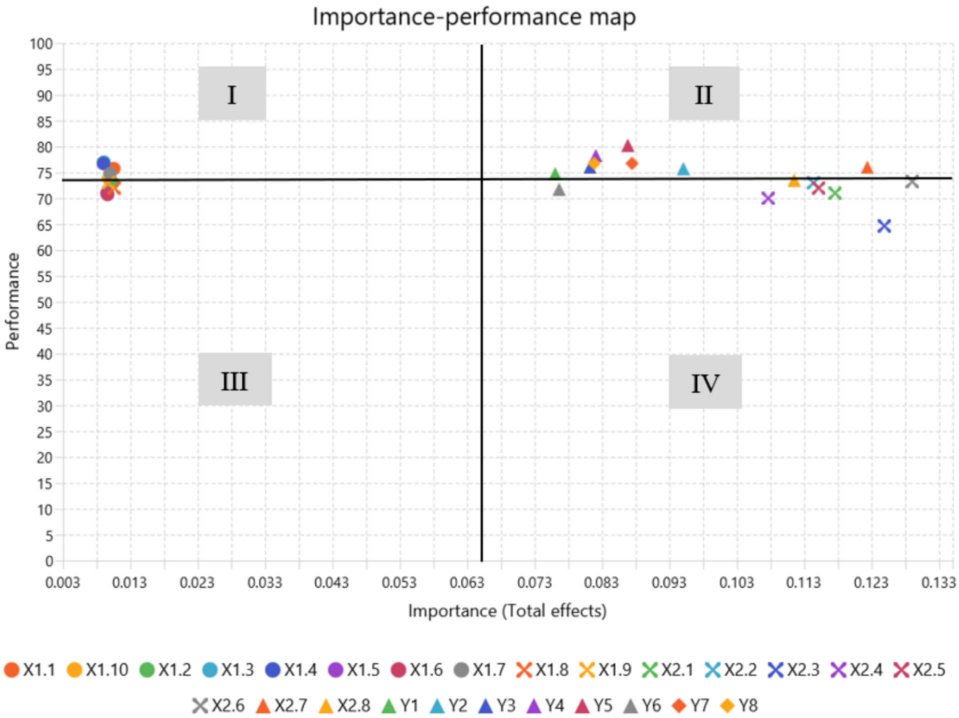

Figure 2. IPMA

The indicators identified in Quadrant I (High Importance, Low Performance) demonstrate low performance for several interconnected reasons:

X1.1 (Knowledge of obligations as a PBB taxpayer according to applicable regulations):

The low performance of this indicator can be attributed to limited socialization and outreach programs by the Garut Kota District government regarding taxpayer obligations. Many taxpayers do not fully comprehend their legal responsibilities, partly due to the technical and legalistic language used in official tax documents. The high proportion of respondents with High School education (39%) compared to Bachelor's degree holders (42%) suggests that a significant segment of taxpayers may struggle to fully grasp the complex regulatory requirements without adequate guidance.

X1.3 (Knowledge that PBB is used for regional development):

The low performance indicates a communication gap between the government and taxpayers regarding the tangible benefits of PBB contributions. Taxpayers often do not see a direct correlation between their tax payments and visible regional development outcomes. This is compounded by limited transparency in how PBB funds are allocated and utilized, leading to a perception that tax payments do not meaningfully contribute to local infrastructure and public services.

X1.4 (Knowledge that PBB plays a role in providing public services and facilities):

Similar to X1.3, this indicator suffers from insufficient public awareness campaigns that demonstrate the connection between PBB revenue and the delivery of public services. Taxpayers may not recognize that facilities such as roads, schools, healthcare centers, and public utilities are funded through their tax contributions. The lack of visible, well-publicized development projects that can be directly attributed to PBB collections contributes to this knowledge gap.

X1.7 (Knowledge that PBB payments can be made directly or online):

This indicator's low performance reflects the digital divide that persists in Garut Kota District. Despite the availability of online payment systems, many taxpayers—particularly those in the older age groups (the majority being 41-50 years old) and those with lower digital literacy—are either unaware of these digital options or lack the skills to utilize them effectively. Additionally, limited infrastructure and inconsistent internet access in certain sub-districts may hinder the adoption of online payment methods. The 55.34% revenue realization rate suggests that technological advancements in payment systems have not been effectively communicated or made accessible to all taxpayer segments.

The education level is dominated by Bachelor's degrees (S1) (42%), closely followed by High School graduates (SMA) (39%), indicating that the majority of taxpayers have a medium to high level of education, enabling them to understand tax information and provisions better.

The R^2 value of 0.771 indicates that the research model is able to explain 77.1% of the variation in the effectiveness of Land and Building Tax revenue. This value shows that the research model involving tax knowledge and taxpayer attitudes has a strong ability to explain the effectiveness of Land and Building Tax revenue. These findings confirm that the effectiveness of tax revenue is not only influenced by the taxpayer's level of understanding of tax provisions. Tax knowledge and taxpayer attitudes play a role in increasing taxpayer compliance, which ultimately increases the effectiveness of Land and Building Tax revenue. The results of this study indicate that efforts to increase the effectiveness of tax revenue will be more optimal if an increase in tax understanding is accompanied by the formation of positive taxpayer attitudes and compliance with tax regulations.

The Impact of Tax Literacy on Taxpayer Compliance Levels

Taxpayer compliance is fundamentally driven by an individual's comprehension of tax regulations. A lack of tax knowledge often leads to administrative errors, payment delays, and overall non-compliance. Conversely, adequate tax literacy empowers taxpayers to fulfill their obligations accurately and recognize their contribution to regional development. Demographically, the majority of PBB payers in Garut Kota District are within the productive age group (41-50 years) and possess moderate to high educational backgrounds, indicating a demographic capable of absorbing tax regulations. The PLS-SEM analysis (Table 10) confirms a significant and positive relationship between tax knowledge and taxpayer compliance with a moderate effect size. Consequently, enhancing tax knowledge consistently correlates with higher voluntary compliance. These empirical findings corroborate Oktaviano et al. (2023), establishing that comprehensive tax knowledge remains a critical driver of compliance in Garut Kota District, despite contrasting with Malendes et al. (2024).

The Role of Taxpayer Perspectives in Driving Compliance Behavior

Taxpayer compliance is deeply rooted in psychological factors, particularly an individual's attitude toward taxation. Grounded in the Theory of Planned Behavior, positive attitudes—such as recognizing taxes as vital contributions and perceiving the system as fair—strongly encourage voluntary compliance. Conversely, late payments often stem from unsupportive attitudes driven by skepticism or negative administrative experiences. The analysis confirms that taxpayer attitudes exert a positive, highly significant influence on taxpayer compliance with a strong effect size (Table 10). Essentially, the more positive the taxpayer's disposition, the higher their compliance rate. This aligns with Nadyla Alfiena Candra & Tohari (2025) firmly establishing that cultivating positive attitudes is a crucial determinant for increasing PBB compliance, contrasting with (Agustin et al., 2024; Ode Nur Ainun et al., 2022) .

The Influence of Tax Compliance on Property Tax Revenue Effectiveness

The effectiveness of PBB revenue is examined through the relationship between taxpayer compliance and the success of tax collection against government targets. In practice, a discrepancy often emerges largely due to less-than-optimal taxpayer compliance. Based on the SEM-PLS analysis, taxpayer compliance has a positive, strongly significant influence on the effectiveness of PBB revenue (Table 10). Higher compliance directly translates to greater revenue effectiveness, contributing substantially to the model. These findings align with Saputra et al. (2025), underscoring that disciplined fulfillment of tax obligations provides a tangible contribution to optimal local tax collection, although this contrasts with (Ayuningsekar et al., 2023; Saragih et al., 2024).

The Contribution of Tax Literacy to the Efficiency of Property Tax Revenue

A taxpayer's understanding of PBB is closely linked to how effectively tax revenue is collected. Nonetheless, the uneven distribution of tax knowledge in Garut Kota District evident in late payments and annual arrears hinders revenue optimization. Interestingly, the analysis yields a negative but statistically significant direct effect of tax knowledge on PBB revenue effectiveness (Table 10). While significant, its direct effect size is relatively limited. This suggests that greater knowledge alone does not automatically translate into concrete payment actions. Taxpayers with extensive knowledge can become more critical of tax policies or service quality; if their perceptions are unfavorable, greater knowledge may not encourage direct compliance. This aligns with (Anggraeni & Halimatusadiah, 2022; Khoirunnisa et al., 2022) but contrasts with Cahyaningsih & Nuryanti (2023; Weol et al., 2023).

The Impact of Taxpayer Dispositions on Property Tax Revenue Effectiveness

Taxpayer attitude is reflected in the awareness, understanding, and willingness to fulfill obligations. It is shaped by factors such as education, personal experience, and tax service quality. The results demonstrate that taxpayer attitude has a positive, highly significant effect on PBB revenue effectiveness with a strong contribution (Table 10). A more positive attitude directly boosts compliance, which in turn optimizes revenue collection. These findings align with Dian et al. (2022; Prasetyawati et al., 2022), suggesting taxpayers perceive the system as equitable, though they differ from Marcel Kusuma et al. (2023) who found a non-significant effect.

The Mediating Role of Compliance Between Tax Literacy and Revenue Effectiveness

A persistent issue in PBB collection is that actual revenue falls short of targets, partly due to limited knowledge of tax obligations. Tax knowledge plays a key role in strengthening compliance, which subsequently affects revenue effectiveness. The SEM-PLS analysis confirms that taxpayer compliance serves as a positive and significant mediator between tax knowledge and PBB revenue effectiveness. Although the statistical mediation effect is relatively low, good tax knowledge successfully enhances revenue effectiveness indirectly through the pathway of increased compliance. In practice, knowledgeable taxpayers do not always fulfill obligations if they lack discipline; thus, compliance is the critical bridge translating knowledge into actual revenue.

Compliance as a Mediator Between Taxpayer Attitudes and Property Tax Revenue Generation

In Garut Kota District, many taxpayers possess the financial ability to pay PBB, yet compliance varies due to differing attitudes. A favorable tax attitude does not directly boost revenue; instead, it first influences compliance levels. The analysis confirms that taxpayer compliance positively and moderately mediates the relationship between taxpayer attitude and PBB revenue effectiveness. A positive disposition enhances revenue collection indirectly by first establishing compliant behavior. This aligns with (Hariatih & Rahmah, 2025) confirming that with strong compliance, revenue effectiveness can be optimally achieved as obligations are fulfilled in a timely manner.

Utilizing the IPMA Approach to Identify Key Drivers of Tax Knowledge and Attitudes on Revenue Effectiveness

Importance-Performance Map Analysis (IPMA) is used to examine the relationship between the importance and the actual performance of elements that influence the effectiveness of Land and Building Tax (PBB) revenue. In this study, the elements analyzed include tax knowledge, taxpayer attitude, and taxpayer compliance, which are grouped into four quadrants based on their level of importance and current performance. Each quadrant calls for a distinct strategy to enhance overall effectiveness.

Quadrant I – Main Priority (High Importance, Low Performance)

Indicators in this quadrant are aspects that strongly influence PBB revenue effectiveness but currently show poor performance. These require focused intervention and improvement to optimize their impact. They include:

a) X1.1: knowledge of obligations as a PBB taxpayer according to prevailing regulations
b) X1.3: knowledge that PBB revenue is used for regional development
c) X1.4: knowledge that PBB plays a role in providing public services and facilities
d) X1.7: knowledge that PBB payments can be made either in person or online

The appropriate strategy for this quadrant is to direct intensive efforts toward improving these critical indicators. The local government, particularly in Garut Kota District, should evaluate these indicators to ensure efficient use of budgets and programs. Strategic steps may include more targeted public outreach, simplification of services, and policy adjustments based on taxpayer needs. The primary focus should be shifted toward enhancing taxpayer compliance as a key intervening variable, which in turn is expected to boost PBB revenue effectiveness in a balanced and sustainable manner.

Quadrant II – Good Performance (High Importance, High Performance)

Indicators in this quadrant are both highly important and currently performing well. The strategy should center on maintaining and reinforcing these aspects so they continue to contribute optimally. They include:

a) X2.6: the administrative procedures for paying PBB are clear and easy to follow
b) X2.7: taking responsibility if late in paying PBB
c) X2.8: tax sanctions encourage greater compliance
d) Y1: consistently fulfilling PBB obligations
e) Y2: complying with all applicable PBB regulations
f) Y3: providing accurate information regarding owned taxable property
g) Y4: completing all supporting documents as required
h) Y5: paying the PBB due based on the Taxable Sales Value (NJOP)
i) Y7: always paying PBB on time before the due date
j) Y8: never delaying PBB payment after the Tax Due Notice (SPPT) is issued

Strategies here involve sustaining successful programs and periodically innovating to strengthen existing systems, such as through the development of digital services. This ensures that these indicators not only remain high-performing but also continue to support improved taxpayer compliance, ultimately contributing to PBB revenue effectiveness in Garut Kota District.

Quadrant III – Low Priority (Low Importance, Low Performance)

These indicators have lower importance and relatively poor performance, making them a lower priority for immediate intervention. They include:

a) X1.2: knowledge of regulations concerning tax sanctions
b) X1.5: knowledge of initial administrative steps required for payment procedures based on owned taxable property
c) X1.6: knowledge of documents required as a PBB taxpayer
d) X1.8: knowledge of the annual PBB payment deadline
e) X1.9: knowledge of the applicable PBB tariff rate for owned property
f) X1.10: knowledge that PBB tariffs can change according to local regulations

The recommended strategy is to deprioritize these indicators in short-term development plans and manage resources efficiently, avoiding excessive allocation of budget or personnel. The main focus should remain on factors with greater influence on compliance and revenue effectiveness. Nevertheless, periodic evaluations should still be conducted to prevent any decline that might negatively affect the overall tax system in Garut Kota District.

Quadrant IV – Not a Priority (Low Importance, High Performance)

Indicators in this quadrant have lower importance but already perform well. They are not urgent to improve despite their high performance. They include:

a) X2.1: acting professionally when making PBB payments
b) X2.2: ease of obtaining information from tax officers or official media
c) X2.3: accepting the prevailing PBB regulations
d) X2.4: perceiving that PBB regulations are fair and evenly applied
e) X2.5: willingness to follow administrative procedures when paying PBB
f) Y6: the administrative procedures for paying PBB are clear and easy to follow

The strategy for this quadrant is to control and streamline the already high performance. The local government need only maintain the existing good service standards without excessive additional effort. Evaluation is important to ensure that this high performance adds proportional value and does not merely create operational burdens. In this way, tax management can become more effective, efficient, and aligned with the main goals of improving taxpayer compliance and optimizing PBB revenue.

Conclusion

This research investigates the influence of tax knowledge and taxpayer attitudes on Land and Building Tax revenue effectiveness, positioning taxpayer compliance as a mediator. Quantitative findings indicate that the model accounts for 77.1% of the variance in revenue effectiveness, with the remaining 22.9% attributable to external factors. The empirical results confirm all proposed hypotheses: tax knowledge and attitudes significantly drive taxpayer compliance and directly enhance revenue effectiveness. Furthermore, compliance serves as an effective mediating bridge between these behavioral antecedents and the ultimate tax collection outcomes. Concurrently, the Importance-Performance Map Analysis (IPMA) yields strategic, priority-based recommendations for stakeholders to optimize future tax revenue performance.

This study acknowledges several limitations that should be considered when interpreting its findings. First, the research is geographically confined to Garut Kota District, Garut Regency, which limits the generalizability of the results to other regions with different socio-economic conditions, cultural contexts, and tax administration systems. The specific characteristics of this district including its unique demographic profile and compliance patterns—may not reflect those of other areas, particularly urban centers or regions with more advanced digital tax infrastructure. Second, this study employs a cross-sectional design, collecting data at a single point in time. This approach captures taxpayer perceptions and compliance behavior only during the 2024 period, without accounting for potential changes over time or seasonal variations in tax payment patterns. Cross-sectional data cannot establish causality definitively, nor can it capture the dynamic evolution of taxpayer attitudes and knowledge in response to policy interventions or environmental changes. Third, although the research model explains 77.1% of the variance in PBB revenue effectiveness, the remaining 22.9% indicates the presence of other unexamined factors that may influence tax revenue outcomes. The model does not account for external variables such as macroeconomic conditions, policy changes, or emergency situations that could affect taxpayer behavior.

Future studies should expand the geographical scope to include multiple districts or regencies within West Java Province, or even across different provinces in Indonesia, to enable comparative analysis and identify regional variations in the determinants of PBB revenue effectiveness. Such multi-regional research would enhance the external validity of the findings and provide insights for regionally tailored policy interventions.Longitudinal studies are strongly recommended to track changes in taxpayer compliance and revenue effectiveness over extended periods. Such research designs could assess the impact of specific policy interventions, evaluate the effectiveness of tax education programs, and identify secular trends in taxpayer behavior that cross-sectional studies cannot capture. Future research should incorporate additional variables that may significantly influence PBB revenue effectiveness. Key variables warranting investigation include:

a) Tax awareness: Extending beyond mere knowledge to examine taxpayers' deeper understanding of the moral and civic dimensions of taxation
b) Service quality: Evaluating the role of tax office service standards, staff professionalism, and administrative efficiency in shaping taxpayer attitudes and compliance
c) Tax sanctions: Examining both the deterrent effect of penalties and the perceived fairness of sanction enforcement mechanisms
d) Trust in government: Investigating how public confidence in the government's management of tax revenues influences willingness to comply
e) Digital taxation services: Exploring the adoption of e-tax systems, the digital literacy of taxpayers, and the impact of digital transformation on collection efficiency

Qualitative research approachesincluding in-depth interviews and focus group discussionscould provide richer insights into the underlying motivations, barriers, and contextual factors that shape taxpayer behavior in Garut Kota District, complementing the quantitative findings of this study.

Author contributions

The authors explicitly outline and describe their individual contributions to the research and the development of the manuscript. Riza Arizany Azahra conducted the primary field research, distributed the questionnaires, performed the PLS-SEM and IPMA data analysis, and drafted the initial manuscript. Ikeu Kania provided methodological guidance, assisted in the validation of the research instruments, and reviewed the data analysis. Gugun Geusan Akbar served as the principal supervisor, offering conceptual framework guidance, critical review of the theoretical analysis, and final manuscript refinement.

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Conflict of interest

All authors affirm the absence of any conflicts of interest that could compromise the objectivity of this research. Specifically, there are no personal, commercial, or financial affiliations with any entities that could bias the study's findings.

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