

# The Influence of Tax Literacy, Tax Sanctions, and Tax Culture on the Tax Compliance of Regional Government Apparatus: The Moderating Role of Tax Digitalization in Bolaang Mongondow Regency

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## Abstract

Tax compliance among regional government apparatus is a crucial aspect in supporting accountable and administratively orderly regional financial management. However, in practice, compliance issues are still observed, influenced by variations in tax literacy levels among officials, the implementation of tax sanctions, organizational culture, and the utilization of tax digitalization systems. This condition indicates a gap between officials' understanding and the optimal use of technology in supporting tax compliance. This study aims to analyze the influence of tax literacy, tax sanctions, and tax culture on the tax compliance of regional government apparatus, as well as to examine the moderating role of tax digitalization in the relationship between tax literacy, tax sanctions, and tax culture and tax compliance in Bolaang Mongondow Regency. This study employs a quantitative approach using a survey method by distributing questionnaires to financial and tax management officials within regional government agencies. The data were analyzed using Structural Equation Modeling based on Partial Least Squares (SEM-PLS). The results indicate that tax literacy, tax sanctions, tax culture, and tax digitalization significantly influence tax compliance among regional government apparatus. However, tax digitalization does not moderate the relationship between tax literacy, tax sanctions, and tax culture and tax compliance. Compliance among officials is more strongly influenced by awareness of legal consequences, organizational values, and administrative mechanisms rather than by the utilization of technology. Furthermore, the uneven implementation of digital systems, limited infrastructure, differences in officials' capabilities in operating applications, and the predominantly administrative function of technology contribute to the inability of digitalization to strengthen the relationship between behavioral factors and tax compliance. This study emphasizes the importance of enhancing officials' competencies, organizational support, and infrastructure to ensure that digital transformation can effectively improve tax compliance.

**Keywords:** tax literacy, tax sanctions, tax culture, tax digitalization, tax compliance.

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## INTRODUCTION

Tax plays a central role as a primary instrument in both national and regional financial systems, contributing significantly to state revenue used to finance development and public

services. Based on Law Number 28 of 2007 concerning General Provisions and Tax Procedures, tax is defined as a mandatory contribution to the state that is coercive in nature, imposed by law, without direct compensation, and utilized for the greatest prosperity of the people. In practice, tax constitutes the main source of revenue in the State Budget (APBN), which is allocated to finance various government expenditures, both operational and developmental (Hidayat & Gunawan, 2022).

The Directorate General of Taxes defines tax compliance as the degree to which taxpayers fulfill their tax obligations in accordance with applicable regulations without requiring enforcement actions (Alvoncius & Hapsari, 2024). In the context of regional government, this responsibility is carried out by officials such as expenditure treasurers and Commitment-Making Officials (PPK), who are responsible for withholding, depositing, and reporting taxes through systems such as e-filing and e-invoicing (e-faktur). In Bolaang Mongondow Regency, there are 32 regional government agencies managing tax-related transactions that must be conducted accurately.

This role is highly strategic in ensuring compliance. However, various challenges such as incorrect application of tax rates, limited training, weak supervision, and delays in reporting during 2023–2024 indicate that compliance is influenced not only by administrative systems but also by the knowledge, skills, coordination of officials, and infrastructure limitations.

Theoretically, tax compliance is influenced by both internal and external factors. Internal factors include tax literacy, tax awareness, religiosity, tax sanctions, tax culture, and social norms (Manda et al., 2023), while external factors include the ease of administrative systems, tax digitalization, the quality of tax authority services, socialization, and supervision (Palupi & Arifin, 2023). The interaction of these factors shapes the level of taxpayer compliance in practice.

However, in the context of regional government apparatus as public financial managers, not all factors exert the same level of influence. Based on empirical studies and behavioral theories, tax literacy, tax sanctions, and tax culture are the most relevant factors as they are directly related to regulatory understanding, discipline, and organizational values. Meanwhile, factors such as religiosity and social norms are considered to have a less direct relationship with technical tax administration activities.

Previous studies show that the effects of tax literacy, tax sanctions, and tax culture on tax compliance yield mixed findings. Some studies report positive effects (Supriatiningsih & Jamil, 2021; Frecky & Waluyo, 2025), while others find insignificant results (Yuliatic & Fauzi, 2020; Nurwati & Umaimah, 2024). These inconsistencies indicate the need for further research.

Along with technological advancements, the government has implemented tax digitalization through systems such as e-billing, e-filing, e-bupot, and e-invoicing (e-faktur) to improve efficiency, transparency, and accountability in tax administration. This digitalization is expected to facilitate reporting processes and reduce administrative errors, thereby enhancing tax compliance. However, its effectiveness largely depends on human resource readiness, infrastructure quality, and officials' ability to operate these systems.

Several studies indicate that tax digitalization can strengthen the relationship between tax literacy, tax sanctions, and tax culture and tax compliance (Atifa et al., 2023; Han et al., 2023). However, other studies suggest that digitalization has not significantly moderated

these relationships due to technical limitations and low levels of digital literacy (Mufarrokhah et al., 2024; Nugraha & Apollo, 2024). These conflicting findings highlight a research gap regarding the role of tax digitalization as a moderating variable, particularly in the context of regional government agencies.

Based on this phenomenon, this study offers novelty by examining tax compliance among financial management officials in regional government agencies, who possess characteristics distinct from general taxpayers, by integrating behavioral factors such as tax literacy, tax sanctions, and tax culture with technological factors, namely tax digitalization as a moderating variable.

## **LITERATURE REVIEW**

### **Theory of Planned Behavior (TPB)**

The Theory of Planned Behavior introduced by Icek Ajzen explains that individual behavior, including tax compliance, is the result of a rational and planned cognitive process. In this theory, intention is the primary factor determining the emergence of behavior, which is shaped by three main components: attitude toward the behavior, subjective norms, and perceived behavioral control. Attitude toward taxation reflects an individual's evaluation of tax obligations, subjective norms represent social pressure or expectations from the environment, while perceived behavioral control reflects an individual's belief in their ability to perform such obligations. Consistent with Saerang et al. (2023), tax compliance is also influenced by interactions among taxpayers, tax authorities, and the taxation system, indicating that compliance is not merely administrative but also shaped by psychological and social factors.

In the context of regional government agencies in Bolaang Mongondow Regency, TPB explains that officials' decisions to fulfill tax obligations, such as Income Tax Article 21 and Value Added Tax, are based on considerations of benefits, risks, and workplace conditions. Tax literacy shapes attitudes through understanding of regulations, tax sanctions create subjective norms in the form of institutional pressure to comply, while tax culture strengthens perceived behavioral control through organizational values and work ethics. Thus, tax compliance reflects officials' perceptions of tax obligations, social influences, and their ability to perform tax-related tasks. When these components are positively formed, tax compliance increases; conversely, imbalance among them may reduce compliance even when administrative systems are well established.

### **Technology Acceptance Model (TAM)**

The Technology Acceptance Model introduced by Fred Davis explains how individuals accept and use technology as an extension of the Theory of Reasoned Action. This model emphasizes that technology usage behavior is influenced by two key constructs: perceived usefulness and perceived ease of use, which subsequently shape individuals' attitudes and intentions toward using technology. According to Azkiya and Labibah (2023), the relationship between attitude and behavior in TAM indicates that the higher the perceived usefulness and ease of use of a system, the greater the likelihood that individuals will use it consistently. The simplicity and applicability of TAM have made it one of the most widely used models in information systems research.

In this study, TAM is used to explain the role of tax digitalization as a moderating variable that may strengthen or weaken the influence of tax literacy, tax sanctions, and tax culture on tax compliance. Digital systems such as e-Filing, e-Billing, and e-Bupot that are easy to use and provide tangible benefits in reporting and payment processes tend to increase compliance among officials. Conversely, if such systems are perceived as complex, unstable, or less beneficial, they may hinder usage and reduce compliance. Therefore, tax digitalization becomes a critical factor in determining the strength of the relationship between behavioral factors and tax compliance, as its effectiveness largely depends on users' perceptions of ease and usefulness.

### **Tax Literacy**

Tax literacy is understood as the level of knowledge, understanding, and skills of taxpayers in fulfilling their tax obligations, which includes understanding regulations, rights and obligations, as well as potential sanction risks. A high level of tax literacy enables taxpayers to properly understand tax procedures, thereby minimizing errors in tax calculation, payment, and reporting. According to Ristanto and Budiantara (2025), the higher an individual's tax literacy, the higher their level of tax compliance. In the context of Bolaang Mongondow Regency, tax literacy plays a very important role, particularly for regional government officials responsible for financial and tax management, as a proper understanding of tax procedures facilitates the implementation of obligations and fosters awareness that taxation is both a moral and administrative responsibility.

Based on the Theory of Planned Behavior, tax literacy contributes to shaping attitudes, subjective norms, and perceived behavioral control, which ultimately encourage the formation of positive compliance behavior. Officials with good tax literacy tend to have more positive attitudes toward taxation, understand organizational expectations, and feel capable of fulfilling tax obligations correctly. This is supported by studies conducted by Supriatiningsih and Jamil (2021), Subekti and Tarigan (2023), and Okoth et al. (2024), which show that tax literacy has a significant effect on compliance through improved understanding, reporting accuracy, and fiscal awareness. Therefore, it can be concluded that the higher the level of tax literacy among officials, the higher their level of tax compliance, leading to the following hypothesis:

**H1:** Tax literacy has a positive effect on tax compliance among regional government agencies in Bolaang Mongondow Regency.

### **Tax Sanctions**

Tax sanctions are penalties imposed on taxpayers who fail to fulfill their tax obligations, including administrative fines, interest, and criminal sanctions. These sanctions aim to enforce discipline and create a deterrent effect so that taxpayers comply with applicable regulations. The strict and consistent implementation of sanctions has been proven to increase compliance by generating concerns over legal consequences that may result in financial and reputational losses (Apriani et al., 2025). In the context of regional government agencies in Bolaang Mongondow Regency, the existence of tax sanctions becomes an important factor encouraging officials, particularly treasurers and Commitment Making Officials, to be more cautious,

accurate, and compliant in fulfilling tax obligations such as withholding, payment, and timely reporting.

Based on the Theory of Planned Behavior proposed by Icek Ajzen, tax sanctions play a role in shaping subjective norms and perceived behavioral control. In this case, tax non compliance is viewed as unacceptable behavior within the work environment, thereby creating social and institutional pressure for officials to comply. In addition, the existence of sanctions increases individuals' perception of the risks of violations, encouraging them to better control their behavior to remain aligned with regulations. This is supported by studies conducted by Hidayat and Gunawan (2022) and Frecky and Waluyo (2025), which show that tax sanctions have a positive effect on compliance because they create a deterrent effect and improve discipline in timely tax reporting. Therefore, the stricter and more consistent the implementation of tax sanctions, the higher the level of compliance among officials, leading to the following hypothesis:

**H2:** Tax sanctions have a positive effect on tax compliance among regional government agencies in Bolaang Mongondow Regency.

### **Tax Culture**

Tax culture is a set of values, norms, and beliefs that develop within society or organizations regarding the importance of paying taxes as a form of social responsibility and contribution to national development. This culture plays a role in shaping moral attitudes and fiscal ethics, so individuals within an environment with a strong tax culture tend to have higher levels of compliance (Asih and Adi, 2020). In practice, tax culture is reflected in officials' behavior, such as timeliness in reporting, accuracy in withholding and paying taxes, and responsibility in managing public finances. A work environment that upholds compliance values will encourage discipline and transparency, whereas a permissive culture may increase tax violations.

Based on the Theory of Planned Behavior proposed by Icek Ajzen, tax culture influences subjective norms and officials' attitudes through positive social pressure as well as ethical values such as honesty and responsibility. When an organization has a strong culture of tax compliance, officials will be encouraged to follow established behavioral standards. This is supported by studies conducted by Nurwati and Umaimah (2024) and Mandasari (2024), which show that tax culture and organizational values have a positive effect on compliance. Therefore, the following hypothesis is proposed:

**H3:** Tax culture has a positive effect on tax compliance among regional government agencies in Bolaang Mongondow Regency.

### **Tax Digitalization**

Tax digitalization is the process of transforming tax administration from manual systems to technology based systems in order to improve efficiency, transparency, and accuracy. This transformation is implemented through various electronic services such as e Filing, e Billing, e Bupot, and e Faktur, which facilitate taxpayers in calculating, paying, and reporting their tax obligations. The implementation of these digital systems has been proven to improve compliance because processes become faster, easier, and less prone to administrative errors (Mandasari, 2024). In the context of regional government agencies,

digitalization also helps improve accountability and facilitates the monitoring of tax obligations.

Based on the Technology Acceptance Model introduced by Fred Davis, technology acceptance is influenced by perceived usefulness and perceived ease of use. Effective and user friendly digital systems will foster positive attitudes among officials and increase their tendency to comply. This is supported by studies conducted by Tambun and Ananda (2022) and Rahayu (2023), which show that digitalization improves efficiency, service quality, and reduces the potential for fraud. Therefore, the following hypothesis is proposed:

**H4:** Tax digitalization has a positive effect on tax compliance among regional government agencies in Bolaang Mongondow Regency.

### **Tax Literacy and Tax Compliance Moderated by Tax Digitalization**

Tax literacy refers to the ability of regional government officials to understand tax regulations, procedures, and obligations, including the use of digital systems such as e Filing and e SPT. A high level of literacy increases officials' confidence in properly carrying out tax obligations, in line with the concept of perceived behavioral control in the Theory of Planned Behavior. Officials who understand taxation are not only able to fulfill obligations correctly but are also more adaptive to changes in digital based systems.

Tax digitalization through systems such as e Filing, e Billing, and e Bupot provides convenience, efficiency, and improved accuracy in tax reporting and payment. Based on the Technology Acceptance Model, the usefulness and ease of use of technology will strengthen compliance behavior. This is supported by studies conducted by Atifa et al. (2023) and Rahman et al. (2023), which show that digitalization strengthens the effect of tax literacy on compliance. Therefore, the following hypothesis is proposed:

**H5:** Tax digitalization moderates the effect of tax literacy on tax compliance among regional government agencies in Bolaang Mongondow Regency.

### **Tax Sanctions and Tax Compliance Moderated by Tax Digitalization**

Tax sanctions are legal instruments used to enforce discipline and prevent tax violations. The stricter and more consistent the implementation of sanctions, the higher the level of taxpayer compliance due to the deterrent effect. Within the framework of the Theory of Planned Behavior proposed by Icek Ajzen, tax sanctions are viewed as external pressure influencing subjective norms, where individuals are encouraged to comply due to social expectations and legal consequences that must be avoided. In the context of regional government agencies, the existence of sanctions encourages officials such as treasurers and Commitment Making Officials to be more disciplined, accurate, and timely in fulfilling tax obligations.

Tax digitalization through systems such as e Filing, e Billing, and Coretax increases transparency, accuracy, and supervision of tax activities. Based on the Technology Acceptance Model introduced by Fred Davis, the ease of use and usefulness of technology strengthen compliance behavior. Digital systems enable faster detection of violations and minimize opportunities for manipulation, thereby strengthening the effectiveness of sanctions as a control mechanism. This is supported by studies conducted by Marilyn et al. (2022) and Han

et al. (2023), which show that tax digitalization strengthens the effect of tax sanctions on compliance. Therefore, the following hypothesis is proposed:

**H6:** Tax digitalization moderates the effect of tax sanctions on tax compliance among regional government agencies in Bolaang Mongondow Regency.

### **Tax Culture and Tax Compliance Moderated by Tax Digitalization**

Tax culture reflects values, norms, and positive habits within organizations that view taxation as a moral responsibility and contribution to development. A strong tax culture encourages voluntary compliance without relying solely on sanctions. From the perspective of the Theory of Planned Behavior proposed by Icek Ajzen, tax culture relates to attitudes toward behavior, namely how individuals perceive tax compliance as important and valuable. When values such as honesty, integrity, and responsibility are embedded within an organization, officials tend to exhibit compliant behavior in fulfilling tax obligations.

Tax digitalization plays a role in strengthening the influence of tax culture through systems that are transparent, accountable, and easy to use. Based on the Technology Acceptance Model, perceptions of usefulness and ease of use of technology enhance positive attitudes and compliance among officials. Integrated digital systems help create a more disciplined work environment and minimize opportunities for irregularities, allowing tax culture values to be implemented more effectively. This is supported by studies conducted by Hakki and Surjadi (2023), which show that digitalization strengthens the influence of tax culture on compliance. Therefore, the following hypothesis is proposed:

**H7:** Tax digitalization moderates the effect of tax culture on tax compliance among regional government agencies in Bolaang Mongondow Regency.

### **Conceptual Framework**

Based on the literature review previously discussed, the conceptual framework of this study illustrates the relationship among the independent variables, moderating variable, and dependent variable. The independent variables in this study consist of tax literacy, tax sanctions, and tax culture, while the dependent variable is tax compliance among regional government agencies. Tax digitalization serves as a moderating variable that may strengthen or weaken the relationship between the independent variables and tax compliance.

This conceptual framework indicates that tax compliance is not only directly influenced by behavioral factors, but also by the interaction between these factors and the use of digital technology. Therefore, this study integrates the behavioral approach through the Theory of Planned Behavior and the technological approach through the Technology Acceptance Model to provide a more comprehensive understanding of the factors influencing tax compliance within regional government agencies.

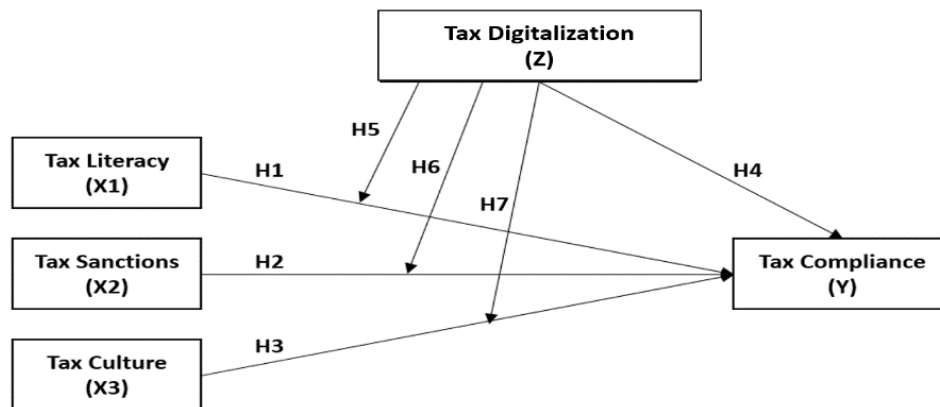


Figure 1. Conceptual Framework Source: Processed by the Author

## RESEARCH METHODOLOGY

This study employs a quantitative approach using a survey method to analyze the influence of tax literacy, tax sanctions, and tax culture on tax compliance, with tax digitalization as a moderating variable. The quantitative approach is selected because the study aims to examine relationships among variables objectively and measurably through statistical analysis. The survey method is used to obtain primary data directly from respondents through questionnaires designed based on indicators of each research variable. These questionnaires are distributed to officials responsible for financial and tax management within regional government agencies in Bolaang Mongondow Regency, ensuring that the data reflect actual field conditions.

The population in this study consists of expenditure treasurers, Commitment Making Officials, and tax technical staff across 32 regional government agencies. The sampling technique used is purposive sampling, which involves selecting samples based on specific criteria to ensure that respondents are relevant to the research objectives. The criteria include:

- (a) officials directly involved in tax withholding, payment, and reporting processes, and
- (b) officials who understand tax administrative procedures.

By applying this technique, the data obtained are expected to have a high level of validity, as they are derived from competent respondents in the relevant field.

The variables in this study consist of tax literacy, tax sanctions, and tax culture as independent variables that are expected to influence tax compliance as the dependent variable. In addition, tax digitalization is used as a moderating variable that may strengthen or weaken the relationship between the independent variables and the dependent variable. The relationships among variables are tested using Structural Equation Modeling based on Partial Least Squares, which is selected because it can analyze complex relationships among latent variables and test moderating effects simultaneously within a single research model.

Table 1. Operational Variables

Variable	Variable Definition	Indicators	Scale
Tax Literacy (X1)	Tax literacy is the ability of regional government officials to understand and use tax information appropriately to fulfill their	Understanding of general tax provisions; understanding of tax rights and obligations; understanding of deadlines and consequences of delays; ability to	Likert

	tax obligations (Ristanto and Budiantara, 2025).	use tax applications such as e filing and e billing; understanding of tax functions (Hadinata and Marpaung, 2025)	
Tax Sanctions (X2)	Tax sanctions are administrative or criminal penalties imposed for violations of tax obligations to create a deterrent effect and encourage fiscal discipline (Apriani et al., 2025).	Understanding of fines and late penalties; understanding of risks of administrative and criminal sanctions; clarity of sanction implementation according to regulations; effectiveness of sanctions in encouraging compliance (Syifa and Indradi, 2025)	Likert
Tax Culture (X3)	Tax culture is the set of values, norms, and collective beliefs regarding taxation as a moral and social responsibility within regional government agencies (Asih and Adi, 2020).	Social norms related to tax compliance; attitudes of colleagues or teams toward taxation; ethics and integrity in tax administration; moral commitment to paying taxes (Asih and Adi, 2020)	Likert
Tax Digitalization (Z)	Tax digitalization is the transformation of tax administration systems into technology based systems to improve efficiency and transparency, and serves as a moderating variable (Mandasari, 2024).	Ease of system use; process speed; accessibility of digital tax services; level of errors or system disruptions (Mandasari, 2024)	Likert
Tax Compliance (Y)	Tax compliance is the ability of taxpayers to fulfill all applicable tax regulations.	Timeliness of reporting; accuracy in calculation and payment; compliance with procedures; consistency in fulfilling obligations	Likert

The data are analyzed using Structural Equation Modeling based on Partial Least Squares with the assistance of SmartPLS software. The analysis stages include descriptive statistics, evaluation of the measurement model consisting of convergent validity, discriminant validity, and reliability tests, as well as evaluation of the structural model including R<sup>2</sup> values, f<sup>2</sup> effect sizes, and path coefficients. Hypothesis testing is conducted using t statistics and p values at a significance level of 5 percent.

## RESULTS AND DISCUSSION

### Results

#### Descriptive Statistics Test

The results of the descriptive statistical analysis for each research variable are presented in Table 2, which aims to provide a general overview of the characteristics of the data obtained from respondents. Descriptive statistics include minimum, maximum, mean, and standard deviation values that indicate the level of data distribution for each variable, namely tax

literacy, tax sanctions, tax culture, tax digitalization, and tax compliance. The mean value is used to observe the tendency of respondents' answers for each indicator, whether they fall into low, moderate, or high categories, while the standard deviation reflects the level of variation or consistency of respondents' answers. Thus, these descriptive statistical results provide an initial overview of the research variables and serve as a basis for further analysis in the measurement model and structural model.

**Table 2. Descriptive Statistical Test Results**

Variable	N	Mean	Minimum	Maximum	Standard Deviation
Tax Literacy	64	43.656	33	50	4.060
Tax Sanctions	64	34.516	24	40	3.528
Tax Culture	64	35.375	23	40	3.790
Tax Compliance	64	34.625	24	40	3.748
Tax Digitalization	64	34.000	16	40	4.577

Source: Processed primary data, 2025

Based on Table 2, the tax literacy variable (X1) shows the highest mean value of 43.656 with a range of 33–50 and a standard deviation of 4.060, indicating that respondents' perceptions of tax literacy are relatively strong. The variables of tax sanctions (X2), tax culture (X3), and tax compliance (Y) have relatively similar mean values, ranging from 34 to 35 with moderate standard deviations, reflecting consistency in respondents' answers. Meanwhile, the tax digitalization variable (Z) has the lowest minimum value of 16 and the highest standard deviation of 4.577, indicating greater variation in respondents' perceptions regarding digital taxation systems.

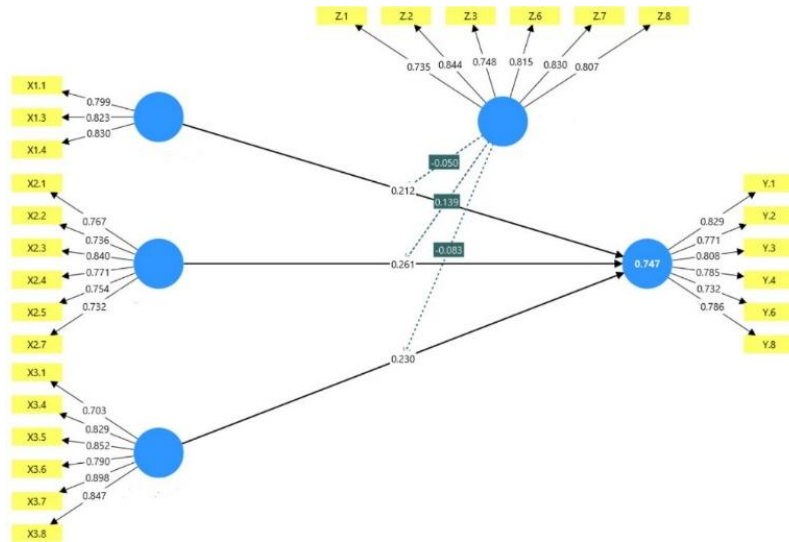
## Measurement Model Evaluation (Outer Model)

### Validity Test

The validity test for reflective indicators was conducted using SmartPLS 3.0 by examining the correlation between indicators and their respective constructs. The results show that all indicators have outer loading values greater than 0.70, indicating that they are valid and suitable for further analysis.

**Table 3. Outer Loading Results (Measurement Model)**

Indicator	Tax Literacy (X1)	Tax Sanctions (X2)	Tax Culture (X3)	Tax Compliance (Y)	Tax Digitalization (Z)	Information
X1.1	0.799					Valid
X1.2	0.823					Valid
X1.3	0.830					Valid
X2.1		0.709				Valid
X2.2		0.736				Valid
X2.3		0.840				Valid
X2.4		0.771				Valid
X2.5		0.754				Valid
X2.7		0.732				Valid
X3.1			0.703			Valid
X3.4			0.829			Valid
X3.5			0.852			Valid
X3.6			0.790			Valid
X3.7			0.898			Valid



X3.8	0.847		Valid	
Y.1		0.829	Valid	
Y.2		0.771	Valid	
Y.3		0.808	Valid	
Y.4		0.785	Valid	
Y.6		0.732	Valid	
Y.8		0.786	Valid	
Z.1			0.735	Valid
Z.2			0.844	Valid
Z.3			0.748	Valid
Z.6			0.815	Valid
Z.7			0.830	Valid
Z.8			0.807	Valid

Source: Data processing using SmartPLS 4.0 (2026)

### Figure 2. Outer Loading (Measurement Model) After

Based on Table 3, all indicators have outer loading values greater than 0.70, indicating that they meet the criteria for convergent validity. The highest outer loading value of 0.898 is found in indicator X3.7, while the lowest value of 0.703 is found in indicator X3.1. This indicates that all indicators are capable of representing their respective latent constructs well and are suitable for further analysis.

### Discriminant Validity

Discriminant validity for reflective indicators is tested using cross loading values, where an indicator is considered valid if it has the highest loading on the construct it measures compared to other constructs. Thus, each indicator must have a stronger correlation with its corresponding latent variable than with other latent variables.

**Table 4. Cross Loading Results of Discriminant Validity Test**

Indicator	Tax Literacy (X1)	Tax Sanctions (X2)	Tax Culture (X3)	Tax Compliance (Y)	Tax Digitalization (Z)	Information
X1.1	0.799	0.331	0.632	0.293	0.585	Valid
X1.3	0.823	0.476	0.580	0.361	0.559	Valid
X1.4	0.830	0.614	0.583	0.518	0.633	Valid
X2.1	0.429	0.767	0.364	0.656	0.530	Valid
X2.2	0.415	0.736	0.335	0.481	0.545	Valid
X2.3	0.474	0.840	0.515	0.670	0.585	Valid
X2.4	0.489	0.771	0.464	0.485	0.593	Valid
X2.5	0.521	0.754	0.581	0.646	0.563	Valid
X2.7	0.355	0.732	0.437	0.677	0.548	Valid
X3.1	0.591	0.551	0.703	0.657	0.646	Valid
X3.4	0.637	0.572	0.829	0.498	0.613	Valid
X3.5	0.591	0.515	0.852	0.409	0.654	Valid
X3.6	0.497	0.305	0.790	0.335	0.492	Valid
X3.7	0.632	0.434	0.898	0.416	0.637	Valid
X3.8	0.636	0.479	0.847	0.286	0.586	Valid
Y.1	0.604	0.531	0.553	0.482	0.829	Valid
Y.2	0.438	0.507	0.471	0.495	0.771	Valid
Y.3	0.704	0.592	0.644	0.524	0.808	Valid
Y.4	0.523	0.634	0.496	0.550	0.785	Valid
Y.6	0.586	0.590	0.700	0.539	0.732	Valid
Y.8	0.528	0.576	0.565	0.560	0.786	Valid
Z.1	0.527	0.556	0.603	0.735	0.595	Valid
Z.2	0.427	0.615	0.426	0.844	0.550	Valid
Z.3	0.296	0.643	0.324	0.748	0.406	Valid
Z.6	0.467	0.614	0.568	0.815	0.631	Valid
Z.7	0.274	0.644	0.282	0.830	0.481	Valid
Z.8	0.237	0.705	0.256	0.807	0.476	Valid

Source: Data processing using SmartPLS 4.0 (2026)

### Reliability Test

In addition to validity testing, the Partial Least Squares method is also used to assess reliability in order to evaluate the internal consistency of each construct. Reliability testing in

PLS is conducted using two measures, namely Cronbach's Alpha and Composite Reliability. A construct is considered reliable if both Cronbach's Alpha and Composite Reliability values are greater than 0.60, indicating that the indicators within the construct have a good level of consistency in measuring the variables under study.

**Table 5. Cronbach's Alpha and Composite Reliability**

Variable	Cronbach's Alpha	Composite Reliability	Critical Value	Description
Tax Literacy (X1)	0.752	0.754	0.6	Reliable
Tax Sanctions (X2)	0.860	0.861	0.6	Reliable
Tax Culture (X3)	0.903	0.906	0.6	Reliable
Tax Compliance (Y)	0.886	0.893	0.6	Reliable
Tax Digitalization (Z)	0.876	0.878	0.6	Reliable

Source: Data processing using SmartPLS 4.0 (2026)

Based on the data processing results using SmartPLS 4.0, all variables have Cronbach's Alpha and Composite Reliability values above 0.60, indicating that they meet the reliability criteria. This shows that the constructs of tax literacy, tax sanctions, tax culture, tax compliance, and tax digitalization have good internal consistency and are appropriate for further analysis.

### Structural Model Evaluation (Inner Model)

#### Coefficient of Determination (R<sup>2</sup>)

The coefficient of determination (R<sup>2</sup>) indicates the ability of independent variables to explain the dependent variable, where values closer to 1 indicate stronger explanatory power. The results of the R<sup>2</sup> test are presented in Table 6.

**Table 6. Coefficients of Determination (R<sup>2</sup>)**

Variable	R Square	R Square Adjusted	Description
Tax Compliance (Y)	0.747	0.715	Moderate

Source: Data processing using SmartPLS 4.0 (2026)

Based on Table 6, the Tax Compliance variable (Y) can be explained by Tax Literacy (X1), Tax Sanctions (X2), Tax Culture (X3), and Tax Digitalization (Z) by 74.7 percent (R<sup>2</sup> = 0.747). This indicates that the research model has strong explanatory power for the dependent variable, while the remaining 25.3 percent is influenced by other variables outside the research model.

#### Effect Size (f<sup>2</sup>)

The effect size test (f<sup>2</sup>) is used to determine the magnitude of the influence of each independent variable on the dependent variable. The criteria for effect size are 0.02 (small), 0.15 (medium), and 0.35 (large). The results are presented in Table 7.

**Table 7. Results of Effect Size F Square (f<sup>2</sup>)**

	(X1)	(X2)	(X3)	(Y)	(Z)	(Z) x (X1)	(Z) x (X2)	(Z) x (X3)
(X1)				0.068				
(X2)				0.086				
(X3)				0.077				
(Y)								
(Z)				0.112				
(Z) x (X1)				0.002				

(Z) x (X2)	0.005
(Z) x (X3)	0.076

Source: Data processing using SmartPLS 4.0 (2026)

Based on the effect size results, all variables show a small effect on Tax Compliance (Y), namely tax literacy (0.068), tax sanctions (0.086), and tax culture (0.077). Meanwhile, tax digitalization shows a relatively larger effect but still falls within the small category approaching medium (0.112). In addition, the moderating effect of tax digitalization on the relationship between tax literacy and tax compliance is very small (0.002) and can be considered negligible. Overall, the contribution of variables in the model is relatively small, indicating that tax compliance is influenced by a combination of various other factors beyond those examined in this study.

### Hypothesis Testing

**Table 8. Path Coefficient Hypothesis Testing**

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics ( O/STDEV )	P values
Tax Literacy (X1) -> Tax Compliance (Y)	0.212	0.219	0.118	1.801	0.036
Tax Sanctions (X2) -> Tax Compliance (Y)	0.261	0.291	0.138	1.896	0.029
Tax Culture (X3) -> Tax Compliance (Y)	0.23	0.231	0.102	2.251	0.012
Tax Digitalization (Z) -> Tax Compliance (Y)	0.363	0.335	0.167	2.165	0.015
Tax Digitalization (Z) x Tax Literacy (X1) -> Tax Compliance (Y)	-0.05	-0.056	0.155	0.324	0.373
Tax Digitalization (Z) x Tax Sanctions (X2) -> Tax Compliance (Y)	0.139	0.109	0.131	1.065	0.143
Tax Digitalization (Z) x Tax Culture (X3) -> Tax Compliance (Y)	-0.083	-0.059	0.169	0.491	0.312

Source: Data processing using SmartPLS 4.0 (2026)

The criteria for hypothesis testing in this study state that a hypothesis is accepted if the t statistic is greater than 1.96 and the p value is less than 0.05. Based on the path coefficient results, the direct and moderating effects can be explained as follows:

**1. Tax Literacy has a Positive Effect on Tax Compliance**

The first hypothesis shows that tax literacy has a positive effect on tax compliance. This is indicated by a coefficient value of 0.212, t statistic of 1.801, and p value of 0.036

(less than 0.05). This means that higher tax literacy leads to higher tax compliance. Therefore, H1 is accepted.

2. **Tax Sanctions have a Positive Effect on Tax Compliance**

The second hypothesis shows that tax sanctions positively affect tax compliance. This is indicated by a coefficient of 0.261, t statistic of 1.896, and p value of 0.029 (less than 0.05). This indicates that the implementation of strict and clear tax sanctions can improve compliance. Therefore, H2 is accepted.

3. **Tax Culture has a Positive Effect on Tax Compliance**

The third hypothesis shows that tax culture positively affects tax compliance. This is indicated by a coefficient of 0.230, t statistic of 2.251, and p value of 0.012 (less than 0.05). This means that stronger tax culture leads to higher compliance. Therefore, H3 is accepted.

4. **Tax Digitalization has a Positive Effect on Tax Compliance**

The fourth hypothesis shows that tax digitalization positively affects tax compliance. This is indicated by a coefficient of 0.363, t statistic of 2.165, and p value of 0.015 (less than 0.05). This indicates that digital tax systems improve ease and compliance. Therefore, H4 is accepted.

5. **Tax Digitalization does not Moderate the Effect of Tax Literacy on Tax Compliance**

The fifth hypothesis shows that tax digitalization does not moderate the relationship between tax literacy and tax compliance. This is indicated by a coefficient of -0.050, t statistic of 0.324, and p value of 0.373 (greater than 0.05). Therefore, H5 is rejected.

6. **Tax Digitalization does not Moderate the Effect of Tax Sanctions on Tax Compliance**

The sixth hypothesis shows that tax digitalization does not moderate the relationship between tax sanctions and tax compliance. This is indicated by a coefficient of 0.139, t statistic of 1.065, and p value of 0.143 (greater than 0.05). Therefore, H6 is rejected.

7. **Tax Digitalization does not Moderate the Effect of Tax Culture on Tax Compliance**

The seventh hypothesis shows that tax digitalization does not moderate the relationship between tax culture and tax compliance. This is indicated by a coefficient of -0.083, t statistic of 0.491, and p value of 0.312 (greater than 0.05). Therefore, H7 is rejected.

Based on the results, it can be concluded that tax literacy, tax sanctions, tax culture, and tax digitalization influence tax compliance among regional government agencies in Bolaang Mongondow Regency. However, tax digitalization does not act as a moderating variable in the relationship between tax literacy, tax sanctions, tax culture, and tax compliance.

## Discussion

The findings of this study provide important insights into the determinants of tax compliance among regional government officials, particularly within the context of developing regions. Overall, the results confirm that behavioral factors, namely tax literacy, tax sanctions, and tax culture, significantly influence tax compliance, while tax digitalization, although directly significant, does not function as a moderating variable.

First, the positive effect of tax literacy on tax compliance indicates that a higher level of knowledge and understanding of tax regulations leads to more compliant behavior among officials. This finding is consistent with the Theory of Planned Behavior, which suggests that knowledge shapes attitudes and perceived behavioral control, ultimately influencing behavior. Officials with better tax literacy are more confident in fulfilling their obligations and less likely to make administrative errors. This result aligns with previous studies by Supriatiningsih and Jamil (2021) and Okoth et al. (2024), which found that tax literacy improves compliance through enhanced understanding and reporting accuracy. Similarly, a study by Palil et al. (2013) demonstrated that tax knowledge significantly influences compliance behavior, particularly in institutional settings.

Second, tax sanctions were found to have a positive and significant effect on tax compliance. This supports the deterrence theory perspective, which argues that stricter enforcement and penalties increase compliance by raising the perceived cost of non-compliance. In the framework of the Theory of Planned Behavior, sanctions function as external pressures that shape subjective norms. This finding is in line with research by Benno Torgler (2007), which highlights the role of enforcement in shaping compliance behavior. Empirical evidence from Alm et al. (2010) also shows that penalties and audit probability significantly influence taxpayer compliance.

Third, tax culture was found to significantly influence tax compliance, indicating that organizational values and norms play a crucial role in shaping compliance behavior. This finding reinforces the importance of social and moral dimensions in taxation, where compliance is not only driven by enforcement but also by internalized values. According to Torgler (2007), tax morale, which reflects cultural and ethical values, is a key determinant of voluntary compliance. This result is also supported by Kirchler et al. (2008), who argue that trust in authorities and cultural norms significantly affect compliance behavior.

Fourth, tax digitalization was found to have a direct positive effect on tax compliance. This suggests that the implementation of digital systems improves efficiency, reduces errors, and facilitates compliance. This finding is consistent with the Technology Acceptance Model, which explains that perceived usefulness and ease of use influence technology adoption and behavior. Studies by Venkatesh et al. (2012) also confirm that digital systems enhance user performance and compliance when properly implemented.

However, contrary to expectations, tax digitalization does not moderate the relationship between tax literacy, tax sanctions, and tax culture and tax compliance. This indicates that the effectiveness of behavioral factors in influencing compliance does not depend on the presence of digital systems. One possible explanation is that digitalization in this context is still limited to administrative functions rather than behavioral transformation. This finding is consistent with Mufarrokhah et al. (2024), which shows that digital tax systems do not always strengthen compliance due to uneven infrastructure and varying levels of digital literacy.

Additionally, the very small effect size of the moderating variables suggests that digitalization has not yet reached a level where it can significantly alter behavioral relationships. This aligns with the findings of OECD (2020), which state that digital transformation in taxation requires not only technological systems but also institutional readiness, human resource capacity, and organizational adaptation to be effective.

From a theoretical perspective, this study confirms that the Theory of Planned Behavior remains a strong framework for explaining tax compliance behavior, particularly in public sector contexts. At the same time, the limited moderating role of digitalization suggests that the Technology Acceptance Model alone may not be sufficient to explain compliance behavior unless supported by adequate institutional and behavioral readiness.

Practically, these findings imply that improving tax compliance among regional government officials should prioritize strengthening tax literacy, enforcing consistent sanctions, and building a strong organizational culture. While digitalization is important, it should be accompanied by training, infrastructure development, and system integration to maximize its impact.

In conclusion, this study highlights that tax compliance is primarily driven by behavioral and organizational factors, while digitalization plays a supporting role rather than a transformative one in the current context.

## CONCLUSION

This study demonstrates that tax literacy, tax sanctions, tax culture, and tax digitalization have a positive effect on tax compliance among regional government officials in Bolaang Mongondow Regency. Tax literacy serves as a fundamental basis for improving understanding and accuracy in fulfilling tax obligations, tax sanctions encourage discipline through external pressure, and tax culture shapes compliant behavior through organizational values and norms. Meanwhile, tax digitalization provides convenience, efficiency, and enhances transparency in tax management.

However, tax digitalization has not been able to function as a moderating variable in the relationship between tax literacy, tax sanctions, and tax culture and tax compliance. This indicates that although technology has been implemented, its utilization is not yet optimal and has not been able to strengthen the influence of behavioral factors on compliance. Therefore, tax compliance among regional government officials is more influenced by a combination of internal factors and system support that still requires improvement.

Regional governments are advised to improve tax compliance by strengthening tax literacy, implementing consistent sanctions, fostering a work culture based on integrity, and optimizing the use of digital systems supported by continuous training and adequate infrastructure. In addition, the quality of digital systems needs to be continuously improved to ensure ease of use and to effectively support officials' performance.

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