

The Effect of Digital Tax Administration, Tax Literacy, and Taxpayer Awareness on Tax Compliance among Indonesian MSMEs

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ABSTRACT

Tax compliance among Micro, Small, and Medium Enterprises (MSMEs) continues to be an important issue in Indonesia due to the sector's substantial role in national economic development and tax revenue generation. To improve the effectiveness of tax collection, the Indonesian government has increasingly adopted digital-based taxation services. Nevertheless, the success of these initiatives is influenced by taxpayers' knowledge of taxation and their willingness to fulfill tax obligations. This research examines the influence of digital tax administration, tax literacy, and taxpayer awareness on the compliance behavior of MSME taxpayers in Indonesia. A quantitative approach was applied by distributing structured questionnaires to MSME owners and managers who possess taxpayer identification numbers. The participants were selected using purposive sampling techniques based on specific eligibility requirements. The collected responses were processed through multiple linear regression analysis to assess the impact of the independent variables on tax compliance. The empirical results indicate that the implementation of digital tax administration significantly improves taxpayer compliance by facilitating tax reporting and payment processes. Tax literacy was also found to have a positive effect, suggesting that taxpayers with greater knowledge of tax regulations are more likely to comply with legal requirements. In addition, taxpayer awareness contributes positively to compliance by encouraging a stronger sense of responsibility toward taxation. The combined influence of these factors provides substantial explanatory power for variations in MSME tax compliance. These findings emphasize the need for continuous enhancement of digital tax services, broader tax education programs, and initiatives that strengthen taxpayer awareness. Such efforts are expected to support higher compliance levels and contribute to the sustainability of government tax revenues.

1. Introduction

Micro, Small, and Medium Enterprises (MSMEs) are widely recognized as one of the most important drivers of Indonesia's economic growth. The sector contributes substantially to employment opportunities, local economic expansion, and income generation across various regions. Moreover, MSMEs

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have demonstrated resilience during periods of economic disruption, making them an essential component of sustainable national development. Given their strategic economic role, encouraging MSMEs to participate actively in the formal taxation system has become a major concern for policymakers.

Taxation constitutes a primary source of government income that finances public infrastructure, social welfare programs, healthcare services, education, and other development initiatives. Despite the increasing number of MSMEs operating within the formal economy, tax compliance among business owners remains relatively low compared with government expectations. In practice, many taxpayers experience difficulties in meeting filing requirements, calculating tax liabilities, or submitting payments on time. These challenges reduce the effectiveness of tax collection efforts and may limit the government's ability to generate stable fiscal resources.

To strengthen tax administration and improve taxpayer services, the Indonesian government has implemented various digital transformation initiatives. The modernization of taxation systems includes electronic platforms that allow taxpayers to register, report, and pay taxes through online channels. Applications such as e-Filing and e-Billing are intended to simplify administrative procedures, minimize bureaucratic barriers, and provide greater convenience for taxpayers. Through these innovations, tax authorities expect to improve efficiency while encouraging higher levels of voluntary compliance.

However, the availability of digital taxation facilities does not automatically guarantee successful implementation. The effectiveness of digital tax systems depends on the ability of taxpayers to understand and utilize the technology appropriately. Many MSME operators possess diverse educational and technological backgrounds, which may affect their capacity to engage with electronic taxation services. Consequently, technological improvements alone may not be sufficient to enhance compliance unless accompanied by adequate taxpayer knowledge and support.

One important factor influencing compliance behavior is tax literacy. Tax literacy refers to an individual's capability to understand tax regulations, reporting procedures, payment mechanisms, and legal obligations associated with taxation. Taxpayers who possess stronger tax-related knowledge are generally better prepared to comply with regulatory requirements and avoid administrative errors. Enhanced literacy also reduces uncertainty regarding tax obligations, thereby facilitating more accurate and consistent compliance behavior.

Another key factor associated with taxpayer behavior is taxpayer awareness. This concept reflects the degree to which individuals acknowledge the importance of taxation and willingly fulfill their responsibilities toward the state. Awareness extends beyond technical knowledge because it involves taxpayers'

attitudes and perceptions regarding the contribution of taxes to public welfare and economic development. Individuals who appreciate the societal benefits generated by tax revenues are more likely to demonstrate voluntary compliance without relying solely on enforcement mechanisms.

Although previous studies have investigated the determinants of tax compliance, the empirical evidence remains inconclusive. Some studies indicate that digital taxation systems improve compliance by reducing administrative burdens and increasing service accessibility. Other studies suggest that the impact of technology may be limited when taxpayers lack sufficient understanding of tax regulations or fail to recognize the importance of compliance. Likewise, research examining the effects of tax literacy and taxpayer awareness has produced varying results across countries, sectors, and taxpayer categories. These inconsistencies indicate the need for further examination, particularly within the MSME context in developing economies.

This study adopts an integrated theoretical perspective by combining the Technology Acceptance Model (TAM), the Theory of Planned Behavior (TPB), and Tax Compliance Theory. TAM explains how perceptions of usefulness and ease of use influence taxpayers' willingness to adopt digital taxation systems. TPB emphasizes the role of attitudes, social influences, and perceived behavioral control in shaping behavioral intentions. Tax Compliance Theory highlights the interaction between administrative mechanisms and taxpayer characteristics in determining compliance outcomes. Together, these theories provide a comprehensive framework for explaining tax compliance behavior among MSMEs.

The present study offers several contributions. First, it evaluates the simultaneous effects of digital tax administration, tax literacy, and taxpayer awareness on tax compliance among Indonesian MSMEs. Second, it provides empirical evidence regarding the effectiveness of digital taxation reforms introduced by the government. Third, the findings are expected to assist tax authorities in developing policies that combine technological innovation, educational initiatives, and awareness-building programs to improve taxpayer compliance.

Accordingly, the primary objective of this research is to examine how digital tax administration, tax literacy, and taxpayer awareness influence tax compliance among MSME taxpayers in Indonesia. By addressing this issue, the study seeks to enrich the existing body of taxation literature while offering practical recommendations that support sustainable revenue generation and effective tax administration.

2. Theoretical Framework and Hypotheses Development

2.1. Theoretical Framework

The Technology Acceptance Model (TAM), introduced by Davis, is one of the most widely used frameworks for explaining user acceptance of information systems. The model argues that an individual's intention to use technology is primarily determined by two perceptions: perceived usefulness and perceived ease of use. Perceived usefulness refers to the extent to which a person believes that a technology can improve performance, while perceived ease of use reflects the belief that the technology can be operated with minimal effort. These perceptions influence attitudes toward technology adoption and ultimately affect actual usage behavior.

In the context of taxation, digital tax administration represents a significant technological advancement designed to improve the interaction between taxpayers and tax authorities. The Indonesian tax system has increasingly adopted electronic services that enable taxpayers to submit tax returns, make payments, and access taxation information through online platforms. Such innovations are intended to reduce administrative burdens and increase the efficiency of tax-related processes.

According to TAM, taxpayers are more likely to utilize digital taxation services when they perceive that the systems are beneficial and easy to operate. Electronic tax facilities can simplify compliance procedures, minimize paperwork, and provide greater flexibility in completing tax obligations. These advantages may encourage taxpayers to engage more actively with the taxation system and improve their compliance behavior.

The application of TAM in this study suggests that acceptance of digital tax administration can positively influence tax compliance among MSMEs. When taxpayers perceive digital taxation services as effective and user-friendly, they are expected to demonstrate greater willingness to comply with reporting and payment requirements.

The Theory of Planned Behavior (TPB), proposed by Ajzen, explains that human behavior is preceded by behavioral intentions. These intentions are formed through three principal components: attitude toward the behavior, subjective norms, and perceived behavioral control. Attitude refers to an individual's positive or negative evaluation of a particular action. Subjective norms describe social expectations or pressures that influence decision-making, whereas perceived behavioral control reflects the perceived capability to perform the behavior successfully.

Within taxation studies, TPB provides a useful framework for understanding why taxpayers choose to comply with tax regulations. Taxpayer awareness can be associated with attitudes toward taxation because individuals who appreciate the importance of taxes for public welfare are more likely to

develop favorable views regarding compliance. Positive perceptions of taxation strengthen the intention to fulfill tax responsibilities voluntarily.

Tax literacy is closely related to perceived behavioral control. Taxpayers who possess adequate knowledge of tax regulations, procedures, and obligations generally feel more confident in performing tax-related activities. A higher level of understanding reduces uncertainty and enables taxpayers to manage compliance requirements more effectively.

TPB proposes that favorable attitudes combined with strong perceived control increase behavioral intentions, which subsequently influence actual behavior. Consequently, taxpayers who are aware of the importance of taxation and possess sufficient tax knowledge are expected to demonstrate higher levels of compliance.

Tax Compliance Theory provides a broader explanation of the factors that influence taxpayers' decisions to comply with tax regulations. Traditional compliance models emphasized enforcement mechanisms such as audits, inspections, and financial penalties. Under this perspective, taxpayers comply primarily because they seek to avoid the risks associated with non-compliance.

More recent developments in compliance theory suggest that taxpayer behavior cannot be explained solely through deterrence. Compliance decisions are also influenced by psychological, social, and institutional factors, including trust in government, perceptions of fairness, administrative quality, and personal values. These factors contribute to voluntary compliance, which is considered a more sustainable approach to tax collection.

Voluntary compliance emerges when taxpayers willingly fulfill their obligations without depending entirely on external enforcement. This condition is more likely to occur when taxpayers understand taxation rules, perceive administrative procedures as convenient, and believe that taxes contribute to public welfare and economic development. Therefore, modern tax administrations increasingly focus on improving service quality and strengthening taxpayer engagement.

Technological advancements have further transformed tax administration practices. Digital platforms provide easier access to information, reduce procedural complexity, and improve communication between taxpayers and tax authorities. Such improvements can create a more supportive environment for voluntary compliance.

In this study, digital tax administration, tax literacy, and taxpayer awareness are considered complementary determinants of tax compliance. Digital tax administration functions as an administrative mechanism that facilitates compliance activities through technological innovation. Tax literacy

serves as a cognitive factor that enhances taxpayers' understanding of tax obligations and procedures. Taxpayer awareness represents a behavioral factor that encourages individuals to fulfill their responsibilities voluntarily. The interaction among these elements is expected to contribute positively to compliance behavior among MSMEs.

This research combines the Technology Acceptance Model, the Theory of Planned Behavior, and Tax Compliance Theory to develop a comprehensive explanation of tax compliance among MSMEs. TAM provides the foundation for understanding the adoption of digital tax services. TPB explains how taxpayer awareness and tax literacy influence intentions and behavioral outcomes. Meanwhile, Tax Compliance Theory highlights the importance of administrative, psychological, and institutional factors in shaping compliance decisions.

The integration of these perspectives suggests that effective digital tax systems, adequate taxation knowledge, and strong taxpayer awareness jointly encourage higher compliance levels. Therefore, digital tax administration, tax literacy, and taxpayer awareness are proposed as key determinants of tax compliance among Indonesian MSMEs and serve as the basis for the hypotheses developed in this study.

2.2. Hypotheses Development

The digitalization of taxation services has become an important component of tax administration reform in Indonesia. Through the implementation of electronic systems, taxpayers can complete various tax-related activities, including registration, reporting, and payment, using online platforms. These technological developments are designed to improve administrative efficiency while reducing the time and costs associated with tax compliance.

From the perspective of the Technology Acceptance Model (TAM), individuals tend to adopt a technological system when they perceive that it offers meaningful benefits and can be operated without excessive difficulty. In the taxation context, digital services provide greater convenience by simplifying procedures and improving access to tax information. Such advantages may encourage taxpayers to interact more frequently with tax authorities and fulfill their obligations in a timely manner.

For MSMEs, which often face limitations in administrative capacity and financial resources, digital taxation systems can reduce compliance burdens and facilitate tax management activities. Easier access to tax services may also minimize procedural obstacles that previously discouraged compliance. Consequently, the effective utilization of digital tax administration is expected to support higher levels of taxpayer compliance. Based on this argument, the following hypothesis is proposed:

H1: Digital Tax Administration has a positive effect on Tax Compliance among Indonesian MSMEs.

Tax literacy refers to the capability of taxpayers to understand taxation concepts, legal provisions, reporting requirements, and payment procedures. Adequate tax knowledge enables individuals to comply with regulations more effectively because they can identify their obligations and perform administrative processes correctly.

The Theory of Planned Behavior (TPB) suggests that behavior is influenced by an individual's confidence in their ability to perform a particular action. In taxation, taxpayers who possess sufficient knowledge generally experience fewer difficulties when dealing with tax regulations and administrative procedures. This confidence can strengthen their intention to comply and reduce the likelihood of mistakes in tax reporting and payment.

Within the MSME sector, tax literacy is particularly relevant because many business owners manage tax matters independently. A stronger understanding of taxation requirements may help them avoid misunderstandings, reduce uncertainty, and improve compliance performance. Therefore, taxpayers with higher levels of tax literacy are expected to demonstrate more consistent compliance behavior. Accordingly, the second hypothesis is formulated as follows:

H2: Tax Literacy has a positive effect on Tax Compliance among Indonesian MSMEs.

Taxpayer awareness reflects the extent to which individuals recognize taxation as an essential obligation and acknowledge its contribution to public welfare. Awareness involves not only familiarity with taxation issues but also a willingness to fulfill tax responsibilities voluntarily.

According to TPB, positive attitudes toward a behavior increase the likelihood that the behavior will be performed. Taxpayers who believe that taxes support public services and national development are more likely to perceive tax compliance as a meaningful responsibility rather than merely a legal requirement. Such perceptions can encourage voluntary compliance and strengthen commitment to fulfilling tax obligations.

For MSME owners and managers, awareness is especially important because decisions regarding tax reporting and payment are often made directly by the business operators themselves. Individuals who possess a stronger sense of civic responsibility are generally more motivated to comply consistently with taxation regulations. Based on these considerations, the following hypothesis is proposed:

H3: Taxpayer Awareness has a positive effect on Tax Compliance among Indonesian MSMEs.

Tax compliance is influenced by multiple interconnected factors rather than a single determinant. Administrative support, taxpayer knowledge, and behavioral motivation collectively contribute to the decision-making process related to tax obligations. Therefore, a comprehensive understanding of compliance behavior requires consideration of these factors simultaneously.

Digital tax administration provides technological support that facilitates compliance activities. Tax literacy equips taxpayers with the knowledge necessary to understand and execute taxation procedures correctly. Meanwhile, taxpayer awareness serves as an internal driver that encourages voluntary compliance. These elements complement one another and together create conditions that support higher compliance levels.

Tax Compliance Theory emphasizes that effective compliance is achieved when administrative systems function efficiently, taxpayers possess sufficient knowledge, and individuals maintain positive attitudes toward taxation. Consequently, the combined presence of these factors is expected to produce a stronger influence on compliance behavior than any single factor operating independently. Based on the above reasoning, the following hypothesis is formulated:

H4: Digital Tax Administration, Tax Literacy, and Taxpayer Awareness simultaneously have a significant effect on Tax Compliance among Indonesian MSMEs.

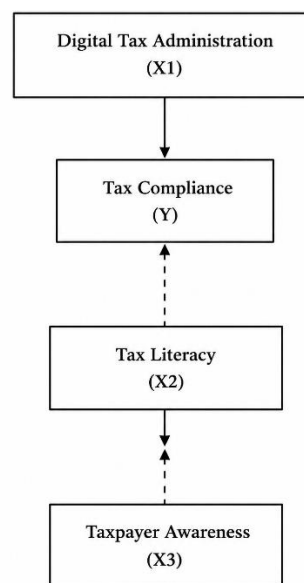


Figure 1. Conceptual Framework

The conceptual framework developed in this study explains the relationship between three explanatory variables—Digital Tax Administration, Tax Literacy, and Taxpayer Awareness—and Tax Compliance among Indonesian MSMEs. The framework assumes that compliance behavior is influenced not only by administrative support provided by tax authorities but also by taxpayers' knowledge and personal commitment toward fulfilling tax obligations.

Digital Tax Administration is included as a technological factor that facilitates interactions between taxpayers and the taxation system. The increasing use of electronic tax services enables business owners to complete reporting and payment activities more efficiently. Easier access to taxation services is expected to reduce administrative barriers and encourage taxpayers to meet their obligations in a more timely manner.

Tax Literacy is incorporated as a knowledge-based factor that reflects the ability of taxpayers to understand taxation rules, reporting procedures, and payment requirements. Taxpayers with a higher level of tax knowledge are generally better prepared to perform tax-related activities correctly and avoid errors in compliance processes. Therefore, adequate tax literacy is expected to strengthen compliance behavior among MSME operators.

Taxpayer Awareness represents the behavioral dimension of the framework. This variable refers to the extent to which taxpayers recognize the importance of taxes in supporting public expenditure and national development. Individuals who possess stronger awareness regarding their fiscal responsibilities are more likely to comply voluntarily with applicable tax regulations.

The framework further assumes that these three factors operate simultaneously in shaping tax compliance. Digital systems provide practical facilities for tax administration, tax literacy enhances taxpayers' capability to understand and execute tax obligations, and taxpayer awareness encourages voluntary participation in the taxation system. The interaction of these elements is expected to create a more favorable environment for improving compliance among MSMEs.

Accordingly, the conceptual framework serves as the foundation for examining both the individual and collective effects of Digital Tax Administration, Tax Literacy, and Taxpayer Awareness on Tax Compliance. The proposed relationships are subsequently tested through the research hypotheses formulated in this study.

3. Research Method

This study adopts a quantitative methodology to investigate the relationships between Digital Tax Administration, Tax Literacy, Taxpayer Awareness, and Tax Compliance among Indonesian Micro, Small, and Medium Enterprises (MSMEs). The quantitative approach was considered appropriate because it

allows the researcher to examine causal relationships among variables through empirical measurement and statistical testing. By utilizing numerical data, the study seeks to provide objective evidence regarding the factors that contribute to taxpayer compliance within the MSME sector.

The research framework includes three explanatory variables—Digital Tax Administration, Tax Literacy, and Taxpayer Awareness—and one outcome variable, namely Tax Compliance. Primary data were gathered through a questionnaire survey designed to capture respondents' perceptions of each construct. The measurement items were adapted from previous studies in the fields of taxation and public administration and subsequently adjusted to fit the context of Indonesian MSMEs.

Each statement in the questionnaire was assessed using a five-point Likert scale, ranging from strongly disagree (1) to strongly agree (5). The collected responses were coded and analyzed using statistical techniques to determine the magnitude and significance of the relationships among the variables included in the research model.

3.1. Data Sample Collection

The population of this study consists of MSMEs operating in Indonesia that are registered within the national taxation system. This sector was selected because of its substantial contribution to economic growth and its increasing involvement in government initiatives related to digital taxation services. The growing adoption of electronic tax administration among MSMEs provides an appropriate context for examining taxpayer compliance behavior.

A purposive sampling technique was employed to identify respondents who met the objectives of the study. Participants were selected based on several predetermined criteria. First, respondents had to be business owners or individuals responsible for managing MSME operations. Second, they were required to possess an active Taxpayer Identification Number (NPWP). Third, respondents needed to have experience using electronic taxation services provided by the tax authority. Finally, they had to be involved in taxation-related activities within their respective businesses.

Data collection was conducted through the distribution of structured questionnaires. To improve the response rate and increase coverage, both online and offline survey methods were utilized. Electronic questionnaires were circulated through digital communication platforms, while printed questionnaires were distributed directly to selected business operators. Prior to the full-scale survey, a preliminary review of the instrument was undertaken to ensure that the questions were understandable, relevant, and aligned with the research objectives.

Respondent participation was voluntary, and all participants were informed about the purpose of the study before completing the questionnaire. Confidentiality and anonymity were maintained throughout the research process to ensure ethical compliance and encourage honest responses. No personal information was disclosed, and all collected data were used exclusively for academic purposes.

The sample size was determined by considering the requirements of multivariate statistical analysis and the complexity of the proposed research model. An adequate number of observations was obtained to ensure the reliability and validity of the empirical results. After the questionnaires were collected, a data screening procedure was carried out to identify incomplete responses, inconsistencies, and submissions that did not satisfy the established sampling criteria. Only valid questionnaires were retained for the final analysis.

The resulting dataset provides information regarding respondents' perceptions of digital taxation services, taxation knowledge, taxpayer awareness, and compliance behavior. These data serve as the empirical basis for evaluating the proposed hypotheses and assessing the determinants of tax compliance among Indonesian MSMEs.

3.2. Technical Analysis and Variable Measurement

The empirical analysis was conducted using multiple linear regression to evaluate the relationships between Digital Tax Administration, Tax Literacy, Taxpayer Awareness, and Tax Compliance among MSME taxpayers in Indonesia. Prior to hypothesis testing, several preliminary examinations were performed to ensure that the dataset fulfilled the statistical assumptions required for regression analysis. These assessments included tests of normality, multicollinearity, heteroscedasticity, and model fit. The analytical procedures were carried out using the Statistical Package for Social Sciences (SPSS).

The dependent variable in this study is Tax Compliance, which refers to the willingness and consistency of taxpayers in fulfilling tax-related obligations according to prevailing regulations. Tax Compliance was measured through several indicators, including the accuracy of tax reporting, timeliness of tax payments, completeness of submitted information, and adherence to tax provisions.

Digital Tax Administration serves as the first independent variable. This construct reflects taxpayers' perceptions regarding the effectiveness and accessibility of electronic tax services provided by the government. Measurement items focus on the ease of using digital tax platforms, efficiency in completing tax procedures, accessibility of online services, and overall satisfaction with digital tax administration systems.

The second independent variable is Tax Literacy. This variable captures the extent to which taxpayers possess sufficient knowledge and understanding of taxation principles, regulations, procedures, and reporting requirements. The measurement indicators include familiarity with tax obligations, comprehension of tax regulations, understanding of reporting procedures, and awareness of taxpayer rights and responsibilities.

Taxpayer Awareness represents the third independent variable and describes the degree to which individuals recognize the importance of taxation in supporting public services and national development. The construct was assessed through indicators related to taxpayers' sense of responsibility, willingness to contribute to government revenue, perception of taxation as a civic duty, and commitment to complying with tax regulations.

All research variables were measured using a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). This scale was selected because it enables respondents to express varying levels of agreement toward each statement while facilitating quantitative analysis. Higher scores indicate stronger perceptions of digital tax administration, greater tax literacy, higher taxpayer awareness, and stronger tax compliance behavior.

To assess the quality of the measurement instrument, validity and reliability analyses were conducted. Item validity was evaluated using correlation coefficients between each item and its respective construct score. An item was considered valid when the correlation value exceeded the minimum acceptable threshold and was statistically significant. Reliability was examined through Cronbach's Alpha, with coefficients above the recommended level indicating satisfactory internal consistency among measurement items. The regression model employed in this study can be expressed as follows:

$$TC = \alpha + \beta_1 DTA + \beta_2 TL + \beta_3 TA + \varepsilon$$

Where:

TC = Tax Compliance

DTA = Digital Tax Administration

TL = Tax Literacy

TA = Taxpayer Awareness

α = Constant term

$\beta_1, \beta_2, \beta_3$ = Regression coefficients

ε = Error term

This model was developed to determine the individual and collective contributions of Digital Tax Administration, Tax Literacy, and Taxpayer Awareness toward explaining variations in MSME tax compliance behavior. The coefficient of determination (R^2) was also calculated to assess the explanatory power of the regression model.

Table 1. Operational Definition and Measurement Indicators

Variable	Operational Definition	Indicators	Scale
Digital Tax Administration (X1)	The extent to which taxpayers perceive digital taxation systems as accessible, useful, and efficient in supporting tax-related activities.	Ease of use of e-tax systems; accessibility of digital tax services; efficiency of tax reporting; convenience of online tax payment; availability of tax information	Likert 1–5
Tax Literacy (X2)	The level of taxpayers' understanding of tax regulations, procedures, rights, and obligations.	Knowledge of tax regulations; understanding of tax obligations; ability to calculate taxes; understanding of tax reporting procedures; awareness of tax sanctions	Likert 1–5
Taxpayer Awareness (X3)	The degree to which taxpayers recognize the importance of taxation and voluntarily fulfill their tax responsibilities.	Awareness of tax obligations; perception of tax importance; willingness to pay taxes; responsibility toward taxation; support for national	Likert 1–5

		development through taxes	
Tax Compliance (Y)	The extent to which taxpayers fulfill their tax obligations accurately, completely, and on time in accordance with applicable regulations.	Timely tax payment; timely tax reporting; accuracy of tax calculations; completeness of tax documentation; compliance with tax regulations	Likert 1–5

Source: Adapted and developed from previous taxation and taxpayer compliance studies (2026).

The operational definitions and indicators presented in Table 1 were developed from established taxation literature and adjusted to the context of Indonesian MSMEs. These indicators were selected to capture the technological, cognitive, and behavioral dimensions associated with tax compliance. The measurement model provides a comprehensive framework for assessing how digital tax administration, tax literacy, and taxpayer awareness contribute to compliance behavior among MSME taxpayers.

4. Results and Discussion

The statistical analysis reveals that Digital Tax Administration, Tax Literacy, and Taxpayer Awareness contribute positively to the compliance behavior of MSME taxpayers. The regression model demonstrates that improvements in these variables are associated with higher levels of tax compliance. Digital Tax Administration emerged as an important factor influencing compliance. The increasing use of electronic tax services enables taxpayers to complete reporting and payment activities more efficiently. Easier access to digital platforms reduces administrative difficulties and encourages taxpayers to fulfill their obligations in a timely manner. This finding indicates that technology-driven tax services can support better compliance outcomes among MSMEs.

Tax Literacy also shows a meaningful contribution to compliance behavior. Respondents with a stronger understanding of tax regulations, procedures, and obligations tend to demonstrate greater compliance. Adequate tax knowledge reduces uncertainty in fulfilling tax responsibilities and helps taxpayers perform tax-related activities more accurately. Therefore, strengthening tax education remains essential for improving compliance levels.

The analysis further confirms the significant role of Taxpayer Awareness. Individuals who recognize the importance of taxation for public services and

economic development are more inclined to comply voluntarily. Awareness encourages taxpayers to view taxation as a responsibility that contributes to broader societal benefits rather than merely a mandatory requirement.

When considered simultaneously, the three independent variables provide a comprehensive explanation of taxpayer compliance behavior. The findings suggest that compliance is not determined by a single factor but rather by the combined influence of technological accessibility, taxation knowledge, and personal awareness. Consequently, efforts to improve MSME tax compliance should integrate digital innovation, taxpayer education, and awareness enhancement programs.

Overall, the results indicate that strengthening digital tax systems, improving tax literacy, and fostering taxpayer awareness can collectively support a higher level of compliance among Indonesian MSMEs. These findings provide practical implications for policymakers seeking to improve tax administration effectiveness and broaden voluntary tax compliance.

5. Conclusions, Limitations, and Recommendations

5.1 Conclusions

The primary objective of this research was to evaluate the influence of Digital Tax Administration, Tax Literacy, and Taxpayer Awareness on the tax compliance behavior of Indonesian Micro, Small, and Medium Enterprises (MSMEs). Based on the statistical analysis, all proposed determinants were found to have a significant contribution to explaining taxpayer compliance.

The findings indicate that the adoption of digital taxation services encourages MSMEs to comply more effectively with tax regulations. The availability of electronic systems has streamlined administrative processes, reduced procedural difficulties, and facilitated the completion of reporting and payment obligations. These advantages demonstrate the strategic role of digital transformation in supporting a more efficient and compliant taxation environment.

The study further confirms that tax-related knowledge is an important factor influencing taxpayer conduct. MSME owners who possess adequate understanding of tax regulations, filing procedures, and fiscal responsibilities tend to exhibit a higher level of compliance. Greater knowledge enables taxpayers to perform tax-related activities with confidence and reduces the likelihood of mistakes arising from misunderstanding or lack of information.

In addition, taxpayer awareness emerged as a significant determinant of compliance. Individuals who recognize the importance of taxes in financing public expenditures and national development are more inclined to meet their obligations voluntarily. This finding suggests that compliance is not solely driven

by regulatory requirements but is also shaped by taxpayers' personal commitment and sense of civic responsibility.

Overall, the results demonstrate that taxpayer compliance among Indonesian MSMEs is influenced by a combination of technological, cognitive, and behavioral factors. The evidence supports the application of the Technology Acceptance Model (TAM), the Theory of Planned Behavior (TPB), and Tax Compliance Theory as complementary perspectives for explaining compliance behavior within the contemporary taxation landscape.

5.2 Limitations

Despite providing valuable insights, this study is subject to several limitations that should be considered when interpreting the results. First, the investigation focused exclusively on MSME taxpayers. As a consequence, the conclusions may not fully represent the behavior of larger business entities, corporate taxpayers, or individual taxpayers operating under different economic conditions.

Second, the research employed a cross-sectional design in which information was collected at a single point in time. Such an approach limits the ability to observe behavioral changes and evolving compliance patterns that may occur as tax policies and technological systems develop.

Third, the analytical model incorporated only three independent variables. Although these variables significantly explained taxpayer compliance, numerous other determinants may also affect compliance decisions. Factors such as institutional trust, perceived tax fairness, enforcement intensity, tax morale, and service satisfaction were not included in the present model and may provide additional explanatory power.

Finally, the study relied on questionnaire-based responses. Because the information was self-reported, the possibility of response bias cannot be entirely eliminated. Participants may have interpreted certain questions differently or provided answers that reflected socially desirable behavior rather than actual practices.

5.3 Recommendations

Based on the research outcomes, several practical and academic recommendations can be proposed. For policymakers and tax administrators, continuous enhancement of digital taxation systems is strongly recommended. Efforts should focus on improving platform usability, system integration, service responsiveness, and technological reliability to ensure that taxpayers can access tax services conveniently and efficiently.

In addition, tax education programs should be expanded to strengthen taxpayers' understanding of fiscal obligations. Workshops, online learning platforms, guidance materials, and community outreach initiatives can help MSME owners acquire the knowledge required to manage taxation matters more effectively.

The government should also intensify campaigns aimed at increasing public awareness of the importance of taxation. Communication strategies that clearly demonstrate how tax revenues contribute to infrastructure development, public services, and economic progress may foster stronger voluntary compliance among taxpayers.

For future research, scholars are encouraged to investigate additional factors that may influence tax compliance and to examine different categories of taxpayers. Subsequent studies may also apply longitudinal research designs, regional comparisons, or sector-based analyses to generate broader insights into the determinants of tax compliance in Indonesia.

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