

## Unlocking Tax Compliance: How Taxpayers' Understanding Drives Digital System Success

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### ABSTRACT

This study examines how the Core Tax Administration System (CTAS) influences compliance among 151 MSME taxpayers in Semarang, Indonesia. Using moderated regression analysis (WarpPLS), the results show that while CTAS implementation directly boosts compliance, system quality alone does not. Crucially, taxpayer understanding acts as a key moderator, transforming the non-significant effect of system quality into a positive one and strengthening the impact of implementation. This underscores that technological success in tax administration hinges not just on the system's features, but on the taxpayer's ability to use it effectively. Policymakers must therefore pair digital rollouts with comprehensive education.

**Keywords:** *Tax Compliance; Core Tax Administration System (CTAS); Moderating Effect*

### INTRODUCTION

The tax sector is a cornerstone of Indonesia's national revenue, playing a vital role in maintaining economic stability and funding public welfare initiatives. Tax revenues, collected from various taxpayers and entities, are allocated by the government for public infrastructure and facility development, which benefits society at large [1]. In response to rapid global technological advancement, the Directorate General of Taxes (DJP) has embarked on a digital transformation, notably through the Core Tax Administration System (CTAS). This system is a key component of the Core Tax Administration System Renewal Project, mandated by Presidential Regulation No. 40 of 2018 [2]. Officially launched on January 1, 2025, CTAS is being rolled out progressively across Indonesia, including Central Java. However, the tax reporting process often faces obstacles and challenges that can lead to a decline in taxpayer compliance—a critical issue faced by both developed and developing countries worldwide [3], [4].

While compliance rates at the Semarang Timur and Semarang Candisari Primary Tax Offices showed a general increase from 2020 to 2024, the Semarang Candisari office experienced a 9.8% decrease in its compliance ratio in 2024. This indicates a pressing need to enhance taxpayer compliance, particularly with the introduction of the DJP's new CTAS. A written statement from the DJP on March 18, 2025, highlighted ongoing updates to the Coretax system, including performance enhancements and service improvements.

#### ***Theoretical Framework and Hypothesis Development***

Compliance theory provides a conceptual framework for understanding why individuals and organizations adhere to specific rules, norms, or regulations. Compliance can be defined as behavior that aligns with the demands, commands, or rules established by an authority. It is influenced by a multitude of factors, including individual characteristics, organizational context, the external environment, and the regulatory framework itself.

Previous research indicates that the utilization of information technology has a positive and significant effect on taxpayer compliance [5], a finding supported by a study conducted at Primary

Tax Offices in the DKI Jakarta region. The digitization of administrative systems represents a government effort to provide optimal service, with continuous optimization of digital tax services [6]. A primary objective of implementing CTAS is to enhance taxpayer compliance [7], [8]. Modernization of tax administration systems has been proven to influence individual taxpayer compliance [9], demonstrating that technological transformation in tax administration can improve compliance levels. An efficient tax administration system can fundamentally alter the compliance process for taxpayers [10]. As a system focused on business process redesign, database improvement, and information technology renewal, CTAS provides taxpayers with transparent access to their tax history, thereby simplifying tax compliance management [2], [8], [11]. Furthermore, Coretax is expected to reduce tax compliance costs through automation and digitalization [12].

*H1: The implementation of the Core Tax Administration System has a positive effect on taxpayer compliance.*

This hypothesis is grounded in the assumption that a more efficient, transparent, and accessible system will encourage taxpayers to be more compliant in fulfilling their tax obligations.

*H2: The quality of the Core Tax Administration System has a positive effect on taxpayer compliance.\*\**

This hypothesis is based on the Technology Acceptance Model (TAM) and electronic service quality theory, which posit that high-quality technological systems can increase user satisfaction and encourage compliant behavior. CTAS quality, encompassing reliability, responsiveness, assurance, empathy (ease of use), and tangibles (interface design), creates a positive user experience. When taxpayers perceive the system as reliable, responsive, secure, user-friendly, and visually appealing, their trust in and satisfaction with the tax authority increases, ultimately fostering greater compliance. Practically, high-quality CTAS reduces compliance costs (in time, effort, and finances) by enabling more efficient reporting and payment, easy access to information, and satisfactory service without complex technical hurdles. This reduction in friction improves taxpayers' perceptions of the tax system. Additionally, a high-quality system allows the tax authority to provide faster, more accurate feedback, fostering effective two-way communication and a better relationship between the tax authority and the taxpayer.

*H3: Understanding of the Core Tax Administration System moderates the relationship between CTAS implementation and taxpayer compliance.*

*H4: Understanding of the Core Tax Administration System moderates the relationship between CTAS quality and taxpayer compliance.*

The ability to pay taxes must be accompanied by knowledge of the tax system itself. A new system mandated by the government requires a period of adaptation, and knowledge of the latest system is crucial as it directly impacts personal and corporate tax reporting. These hypotheses are based on moderation theory within technology acceptance models, which states that a user's understanding can strengthen or weaken the relationship between system characteristics and user behavior. A taxpayer's understanding of CTAS includes knowledge of its features, operation, benefits, and the ability to use it optimally. When taxpayers have an adequate understanding, they are better equipped to appreciate high system quality and realize the full benefits of its implementation. Conversely, taxpayers with limited understanding may not fully utilize advanced features, resulting in a suboptimal positive impact on compliance despite good implementation and high quality. Practically, understanding acts as an enabling factor, allowing taxpayers to explore and use system services more effectively. Those with a deep understanding will be more confident, quicker in completing tax processes, and more satisfied with the service, thereby strengthening the positive influence of both implementation and quality on compliance.

## **RESEARCH METHOD**

This research methodology employs a quantitative approach, involving 151 MSME taxpayers registered at the Semarang City Tax Office as respondents. The collected data were first tested for quality through validity tests, reliability tests, and confirmatory factor analysis to ensure the accuracy and consistency of variable measurement. Subsequently, the data were confirmed to meet classical assumptions, namely normal distribution and the absence of multicollinearity issues. To test the hypotheses, this study applied a moderated multiple linear regression technique, with all data processing conducted using WarpPLS software to identify both direct influences and moderation effects within the proposed model.

Variable measurement is not available.

**RESULTS AND DISCUSSION**

Based on the descriptive statistics presented in Table 1, the demographic profile of the 151 MSME taxpayer respondents can be summarized as follows. The majority of respondents were female, accounting for 64.9% (98 individuals), compared to 35.1% (53 individuals) who were male. In terms of age distribution, the sample was predominantly young, with the largest group being 20-30 years old (74.8%, 113 individuals), followed by the 31-40 age group (22.5%, 34 individuals), and a small minority aged 41-50 (2.6%, 4 individuals). Regarding occupation, the vast majority were private sector employees (77.5%, 117 individuals), followed by entrepreneurs (17.9%, 27 individuals), professionals (3.3%, 5 individuals), and a very small number of civil servants (1.3%, 2 individuals). This profile indicates that the study's sample is largely characterized by young female private sector employees.

**Table 2.** Descriptive Statistic

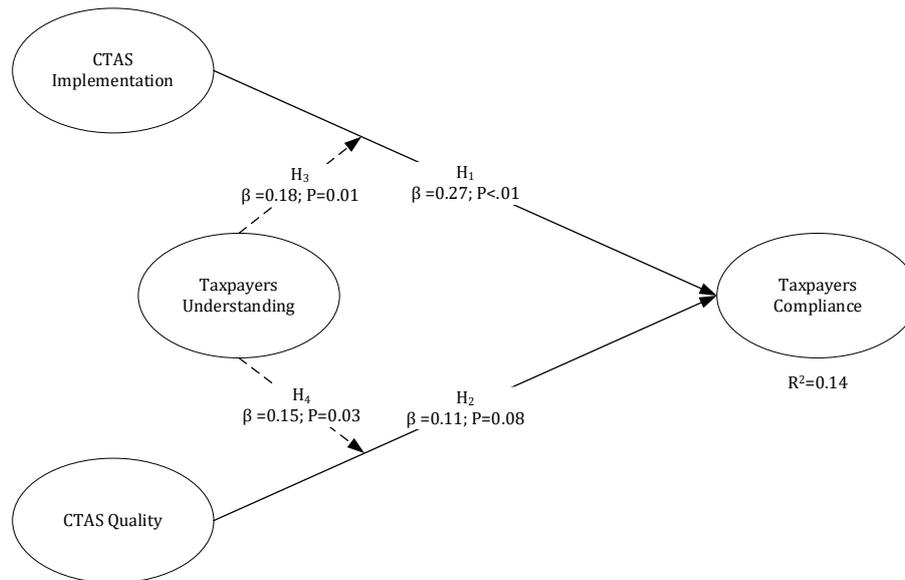
Demographic	Criteria	Total	Frequency
<b>Gender</b>	1. Male	1. 53	1. 35.1 %
	2. Female	2. 98	2. 64.9 %
<b>Age</b>	1. 20 – 30 years	1. 113	1. 74.8 %
	2. 31 – 40 years	2. 34	2. 22.5 %
	3. 41 – 50 years	3. 4	3. 2.6 %
<b>Job</b>	1. Civil servants	1. 2	1. 1.3 %
	2. Private sectors employees	2. 117	2. 77.5 %
	3. Entrepreneurs	3. 27	3. 17.9 %
	4. Professionals	4. 5	4. 3.3 %

Source: Processed data (2025)

The presented conceptual model illustrates a moderated relationship between the Core Tax Administration System (CTAS) and Taxpayer Compliance. The analysis reveals that both the Implementation and the Quality of the CTAS have distinct pathways to influencing compliance, with Taxpayers' Understanding acting as a critical moderating variable.

The direct effects show a clear and significant impact of CTAS Implementation on Taxpayer Compliance, with a strong path coefficient ( $\beta = 0.27, P < 0.01$ ). This indicates that a well-executed rollout and operational use of the system is, by itself, a powerful driver of compliant behavior. In contrast, the direct path from CTAS Quality to Compliance is not statistically significant ( $\beta = 0.11, P = 0.08$ ), suggesting that superior system features and reliability alone are insufficient to directly enhance compliance.

The role of Taxpayers' Understanding is pivotal. It significantly moderates the relationship between both CTAS factors and compliance. The interaction effect is particularly notable for CTAS Quality, where the moderating effect is significant ( $\beta = 0.15, P = 0.03$ ). This means that the quality of the system only translates into higher compliance when taxpayers have a strong understanding of how to use it. Similarly, Understanding also positively and significantly moderates the effect of CTAS Implementation ( $\beta = 0.18, P = 0.01$ ), strengthening the already positive direct effect. The model explains 14% of the variance in Taxpayer Compliance ( $R^2 = 0.14$ ), highlighting the importance of these technological and cognitive factors.



**Illustration 1:** Conceptual Model

**Results**

The hypothesis testing results, analyzed using the WarpPLS software, provide a nuanced understanding of the determinants of tax compliance among SMEs. The findings, summarized in Table 2, reveal both direct and moderated effects. The direct effect of CTAS Implementation on Taxpayer Compliance was found to be positive and significant ( $\beta = 0.27, p < 0.01$ ), thus supporting Hypothesis 1. Conversely, the direct path from CTAS Quality to Taxpayer Compliance was not statistically significant ( $\beta = 0.11, p = 0.08$ ), leading to the rejection of Hypothesis 2.

The analysis of moderation effects yielded critical insights. Hypothesis 3, which proposed that the relationship between CTAS Implementation and Compliance is positively moderated, was supported ( $\beta = 0.18, p = 0.01$ ). This indicates that the moderator variable significantly strengthens the positive impact of implementation on compliance. Most notably, the moderating effect on the path from CTAS Quality to Compliance was also significant ( $\beta = 0.15, p = 0.03$ ), resulting in the acceptance of Hypothesis 4. This reveals that while CTAS Quality has no direct effect, its influence on compliance becomes significant in the presence of the moderator variable.

**Tabel 2.** Results

Hypothesis	$\beta$	Sig.	Conclusion
CTAS Implementation $\rightarrow$ Taxpayers Compliance	0.27	<0.01	Accepted
CTAS Quality $\rightarrow$ Taxpayers Compliance	0.11	0.08	Rejected
Moderated CTAS Implementation $\rightarrow$ Taxpayers Compliance	0.18	0.01	Accepted
Moderated CTAS Quality $\rightarrow$ Taxpayers Compliance	0.15	0.03	Accepted

Source: Data processed (2025)

there is insufficient evidence to test the classical assumptions of the equation  
 The effect of CTAS on Compliance is not significant, is it possible to test it further for moderation?

**Discussion**

The findings of this study offer a refined perspective on the technology-compliance nexus in the context of SME taxation. The strong, direct influence of CTAS Implementation aligns with the Technology Acceptance Model (TAM) and the theory of planned behavior, which posit that the actual use and ease of use of a system are fundamental drivers of behavioral intention and subsequent action [13]. For SMEs, a well-implemented system that simplifies tax procedures directly reduces compliance costs and perceived barriers, thereby encouraging compliant behavior. This is consistent with research by Olasunkanmi et al [14], who found that the implementation of automated tax systems significantly enhanced VAT compliance among SMEs by making the process less cumbersome and more efficient (Olaoye & Talabi, 2023).

The non-significant direct effect of CTAS Quality, however, presents a compelling paradox. It suggests that advanced features, information accuracy, and system reliability (dimensions of quality) are, by themselves, insufficient to drive compliance. This can be interpreted through the

lens of the "Task-Technology Fit" model. For many SMEs, whose primary concern is operational survival, a functionally adequate system that gets the job done may be sufficient; superior quality may be an unappreciated "luxury" that does not directly translate into higher compliance. This finding partially contrasts with a study by Saptono et al [15], which emphasized the importance of system quality, but it highlights that the context of the user (SMEs vs. large corporations) is critical [15].

The most significant contribution of this research lies in the powerful role of the moderator variable. The fact that it transformed the relationship between CTAS Quality and Compliance from non-significant to significant is a critical insight. This can be explained by the Job Characteristics Model, where the outcome of a tool (system quality) is dependent on the psychological state of the user. The moderator variable—which could be *tax literacy* or *perceived government support*—acts as a critical enabler. For instance, high-quality system features (e.g., detailed analytics and reports) are only valuable if the taxpayer possesses the literacy to understand them. This aligns with recent findings by Muttiwijaya et al [11], who demonstrated that the effectiveness of digital tax services in Indonesia was heavily contingent upon the digital literacy of SME owners. They argued that high-quality technology only yields compliance benefits when users have the competence to leverage it effectively [11]. Similarly, the strengthened relationship between Implementation and Compliance under moderation suggests that a supportive environment (e.g., strong institutional trust or adequate training) amplifies the benefits of a well-rolled-out system.

In conclusion, this study demonstrates that achieving tax compliance among SMEs is not a simple matter of deploying a high-quality system. Instead, it is a synergistic process where robust implementation is foundational, and the impact of technological quality is fully realized only when combined with supportive moderating factors that enhance the taxpayer's ability and willingness to engage with the system effectively.

## Conclusion

In summary, this study concludes that the journey towards enhanced tax compliance among SMEs is not solely dependent on the technological attributes of the tax system itself, but rather on a synergistic interplay between implementation, quality, and critical contextual factors. The research empirically demonstrates that while the effective implementation of the CTAS is a direct and powerful driver of compliance, the influence of system quality is entirely contingent upon the presence of a moderating variable, which acts as a crucial enabler for taxpayers. These findings underscore the importance of moving beyond a one-dimensional view of e-tax systems and adopting an integrated approach that considers both technological deployment and the ecosystem in which taxpayers operate. However, this study is not without its limitations. The findings are constrained by its geographical focus on a single city in Indonesia, which may limit the generalizability of the results across different cultural and regulatory contexts. Furthermore, the use of a cross-sectional design provides a snapshot in time, capturing relationships but not their evolution. Finally, while the analysis confirms the significance of the moderator, its specific nature (e.g., whether it is tax literacy, perceived fairness, or institutional trust) was not explicitly measured and defined in this model. To address these limitations and build upon these findings, a promising agenda for future research emerges. Subsequent studies should seek to replicate this model in diverse national settings to validate the robustness of the moderated relationships. Longitudinal research is also critical to trace the causal pathways and understand how these relationships develop over time. Most importantly, future work should aim to explicitly identify and incorporate specific moderator variables, such as taxpayer sophistication or social influence, into the model to provide a more granular and actionable understanding of the mechanisms at play. Such efforts will be invaluable for policymakers seeking to design targeted and effective strategies to foster a culture of voluntary compliance.

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