

Analysis of The Simplification of Income Tax Calculations Article 21 Through The Ter Scheme: A Quantitative and Qualitative Study

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Abstract: This study examines the impact of simplifying Article 21 Income Tax calculation through the Average Effective Rate (TER) scheme on tax compliance, with compliance cost as a mediating variable, and assesses the role of Coretax in overcoming implementation challenges. Using a sequential explanatory mixed-methods approach, quantitative data from 48 Article 21 withholding agents in Denpasar were analyzed with Structural Equation Modeling (SEM), followed by qualitative interviews with tax officials and practitioners using thematic analysis. The results indicate that the TER scheme significantly improves tax compliance while reducing compliance costs. Nevertheless, compliance cost has no significant effect on tax compliance and does not mediate the relationship between simplification and compliance. Qualitative findings suggest that Coretax helps reduce time-related compliance costs but continues to face challenges in system integration, data validation, and technical reliability. The study recommends expanding TER categories, introducing automatic tax refunds, and enhancing Coretax integration to strengthen Article 21 Income Tax administration.

Keywords : Income Tax Article 21, TER, Coretax, Tax Voluntary, Compliance Cost.

Abstrak: Penelitian ini mengkaji dampak penyederhanaan penghitungan Pajak Penghasilan (PPh) Pasal 21 melalui skema Tarif Efektif Rata-rata (TER) terhadap kepatuhan pajak, dengan biaya kepatuhan sebagai variabel mediasi, serta menilai peran Coretax dalam mengatasi berbagai tantangan implementasi. Penelitian ini menggunakan pendekatan metode campuran dengan desain sequential explanatory. Data kuantitatif yang diperoleh dari 48 pemotong PPh Pasal 21 di Denpasar dianalisis menggunakan Structural Equation Modeling (SEM), kemudian dilanjutkan dengan wawancara kualitatif terhadap pejabat pajak dan praktisi yang dianalisis menggunakan analisis tematik.

Hasil penelitian menunjukkan bahwa skema TER secara signifikan meningkatkan kepatuhan pajak sekaligus mengurangi biaya kepatuhan. Meskipun demikian, biaya kepatuhan tidak berpengaruh signifikan terhadap kepatuhan pajak dan tidak memediasi hubungan antara penyederhanaan penghitungan pajak dan kepatuhan. Temuan kualitatif menunjukkan bahwa Coretax membantu mengurangi biaya kepatuhan yang berkaitan dengan waktu, tetapi masih menghadapi sejumlah tantangan dalam integrasi sistem, validasi data, dan keandalan teknis. Penelitian ini merekomendasikan perluasan kategori TER, penerapan pengembalian

kelebihan pembayaran pajak secara otomatis, serta peningkatan integrasi Coretax untuk memperkuat administrasi PPh Pasal 21.

Kata kunci: *Pajak Penghasilan Pasal 21, Tarif Efektif Rata-rata (TER), Coretax, Kepatuhan Pajak Sukarela, Biaya Kepatuhan.*

INTRODUCTION

Ardiantari, (2023) found that the complexity of tax calculation methods contributes to a decline in tax compliance. In her study, Ardiantari explained that this is due to ambiguities in tax calculation, which lead to errors in determining the tax liability. Unfortunately, in Indonesia, revealed that withholding agents for Article 21 Income Tax consider the calculation method for Article 21 Income Tax to be complicated and complex, making simplification essential.

The variety of income tax Article 21 calculation systems results in a significant administrative burden for taxpayers (WS, 2024). In fact, one of the factors that influences taxpayer compliance—in addition to tax complexity—is the cost of tax compliance (Dewi, 2022). In fact, the Directorate General of Taxes (DGT) provides tools to help withholding agents fulfill their tax obligations under Article 21 of the Income Tax Law, such as generating withholding certificates via e-Bupot, creating payment codes via e-Billing, and reporting Article 21 income tax through the monthly tax return on DJPOnline. However, during the Article 21 Income Tax calculation phase, the tax calculation process remains the responsibility of the withholding agent (Ramadhani, 2023)

Effective January 1, 2024, the government introduced a new method for calculating Income Tax Article 21 through Government Regulation No. 58 of 2023 (Suartama, 2024). A summary of the Income Tax Article 21 calculation scheme under Government Regulation No. 58 of 2023 is shown in Figure 1.

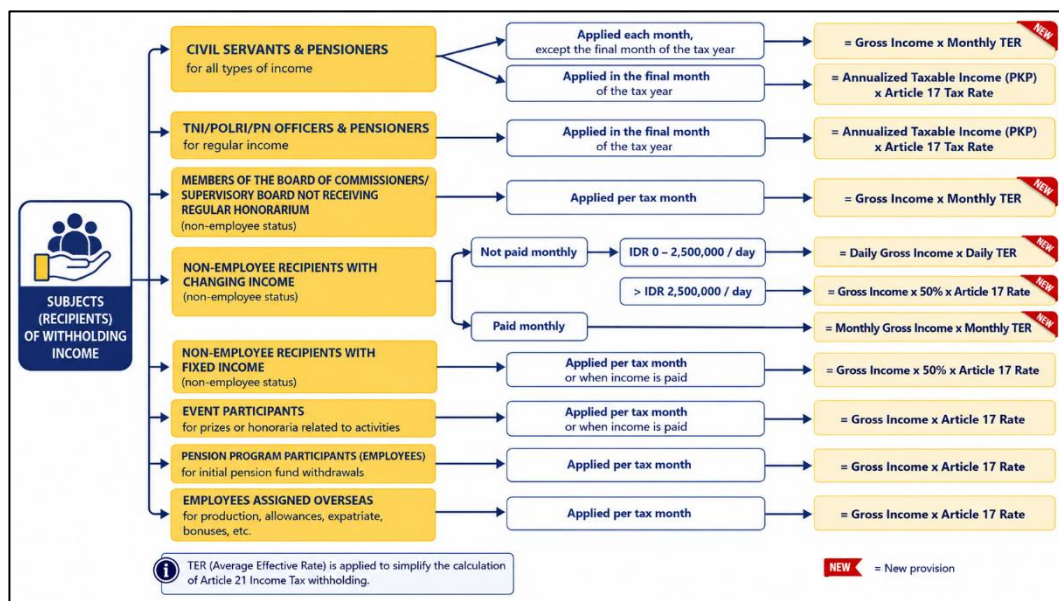


Figure 1. Summary of the ITA 21 Calculation Scheme

The government claims that the three main objectives of the changes to the tax calculation scheme are to make it easier and simpler for taxpayers to calculate their taxes, to improve taxpayer compliance, and to facilitate the development of the tax administration system. The objectives of the TER scheme claimed by the government are consistent with the empirically proven causal relationships identified in previous studies.

Simplifying tax calculations can reduce compliance costs (Kopczuk, 2021). Compliance costs influence tax compliance (Chindengwike, 2022). Given the limitations of previous research—specifically, a research gap in testing causality due to the lack of context regarding the implementation of the TER policy—this study examines whether the causal relationship between the simplification of tax calculations, compliance costs, and tax compliance is applicable to Government Regulation No. 58 of 2023, as claimed.

Contrary to expectations that the simplification of Article 21 income tax calculations would be implemented, the TER scheme has faced challenges. Hertiana & Chandra, (2024) revealed in their study that the most significant challenge is the sharp increase in the amount of Article 21 income tax withheld when permanent employees receive irregular income such as bonuses and holiday

allowances. Figure 2 illustrates the surge in Article 21 income tax withholdings under the TER scheme for employees of PT Multi Ardecon that occurred in July compared to the old scheme.

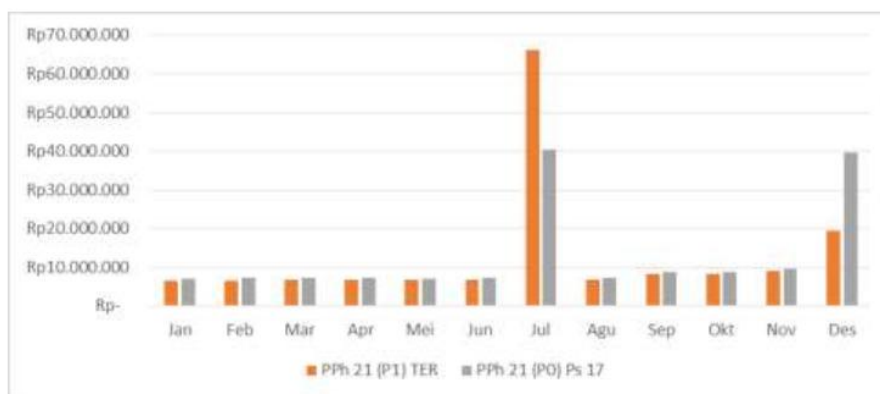


Figure 2. The Spike in ITA 21 When Receiving Irregular Income

Hertiana (2025) explains that under the TER scheme, when a Permanent Employee receives irregular income in July, their taxable income (DPP) increases drastically, causing their monthly TER to shift to a higher tax bracket, which in turn causes the Article 21 income tax withheld in July to rise sharply. In December, PT Multi Adecon also provides a bonus. However, since the TER scheme does not result in a change in the nominal tax amount within a single tax year, the amount of Income Tax Article 21 withheld in December does not spike as dramatically as it did in July. This contrasts with the old scheme, under which the PPh Article 21 withholding amounts were the same in both July and December. Since no previous research has formulated the optimal scheme for calculating PPh Article 21, this research gap prompted this study to develop the best PPh Article 21 calculation scheme based on the Theory of Change.

The second challenge in implementing the TER scheme is the issue of compliance costs. In her research, Melvianti (2025) found that the TER scheme does not meet the principle of financial compliance cost efficiency. This is because withholding agents are still required to perform calculations using the rates specified in Article 17 for the most recent tax period, meaning they must

continue to use external tax calculation software. The study highlights a gap between the intended objectives and the reality on the ground.

In the 2025 tax year, the DGT entered a new era of the Tax Administration System (TER), which is expected to integrate all previously separate tax applications (Suryantara, 2025). Given the gap between the objectives and the reality of the implementation of the TER for Article 21 Income Tax—which leaves room to evaluate Coretax’s role in the TER implementation—this study assesses whether Coretax is capable of addressing the compliance cost challenges resulting from the implementation of Article 21 Income Tax calculations under the TER scheme.

Given the gap between the objectives of the TER scheme and the reality on the ground, as well as the research gap regarding the formulation of pragmatic solutions to the challenges of implementing TER, a comprehensive study is necessary. Using a combination of quantitative and qualitative analysis, this study examines the effect of simplifying the calculation of Article 21 income tax through the TER scheme on tax compliance, with compliance costs serving as a mediating variable. Subsequently, this study will proceed to formulate the optimal scheme for calculating Income Tax Article 21 in accordance with the Theory of Change and analyze the role of Coretax in addressing the compliance cost challenges associated with the implementation of the TER scheme. The focus of this study is on Article 21 income tax withholders using the Article 21 income tax calculation scheme for permanent employees and/or retirees, with a case study conducted in the city of Denpasar.

LITERATURE REVIEW

Tax Simplification

Sanford (1989) identified three main forms of tax complexity: substantive, procedural, and computational. First, substantive complexity stems from the content and structure of the tax rules themselves. Second, procedural complexity arises from the administrative burdens taxpayers must face to fulfill their tax

obligations. Third, computational complexity arises from the method of calculating taxes.

The criteria used to measure the simplification of tax calculations are based on Sanford's (1989) theory, which posits that the complexity of tax calculations stems from elements such as the tax rate structure, the number of exemptions, and various technical rules that make it difficult to understand the calculation procedures and lead to ambiguity in interpreting them. Drawing on this theory and applying it to the situation following the implementation of the latest Income Tax Article 21 (PPH Pasal 21) scheme, this study will measure variable X using the following questions:

1. Ease of understanding the calculation of Income Tax Article 21 using the TER scheme; and
2. Minimal ambiguity in applying the calculation of Income Tax Article 21 using the TER scheme.

Variable X was measured using a Likert scale ranging from one to ten.

Compliance Cost

In 1973, Cedric Sanford's most well-known theory of compliance costs explained that compliance costs are defined as the costs incurred by taxpayers or third parties to meet the requirements imposed on them to comply with tax laws. Cedric Sanford explains that there are three types of compliance costs: direct monetary costs, time costs, and psychological costs. The criteria used to measure compliance cost variables are:

1. *Direct money cost* are costs that can be calculated based on the money spent by taxpayers in connection with the exercise of their tax rights and fulfillment of their tax obligations.
2. *Time costs* are intangible costs related to the time spent by taxpayers to comply with their tax rights and obligations.

Tax Compliance

In its 2014 publication titled “Measures of Tax Compliance Outcomes,” the Organization for Economic Co-operation and Development (OECD) outlined four approaches to measuring voluntary tax compliance. These four approaches are: registering as a taxpayer for tax purposes, filing tax returns on time, correctly reporting tax liabilities, and paying taxes on time. These four approaches can identify and diagnose problems in a country’s tax system; therefore, the criteria used to measure the Tax Compliance variable are:

1. Timely payment of Income Tax Article 21; and
2. Timely filing of the Periodic Income Tax Article 21 Return.

Theory of Change

. The Theory of Change (ToC) is a structured method that ensures activities align with desired changes by mapping the relationships between long-term goals and the underlying preconditions, interventions, indicators, and assumptions. According to the Center for Theory of Change, there are four core elements of the ToC: preconditions, indicators, interventions, and assumptions. Preconditions are equated with the outcomes or results to be achieved that support the long-term goal. Indicators are operationalized by answering who the change targets are, how much change is considered a success, and how long it will take to achieve it. Each precondition must be paired with a realistic intervention (activity, program, policy, etc.) to bring it about. Assumptions explain why the relationships between preconditions make sense and why the interventions are believed to produce the expected results. Figure 3 shows a change pathway map using the ToC method.

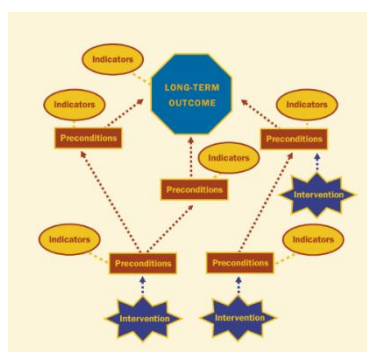


Figure 3. A Change Pathway Map Using The Toc Method

In this approach, each activity or intervention is linked to the expected prerequisites, and each of these changes is in turn linked to long-term goals, so that the adequacy of the logical sequence of changes can be assessed.

Previous Research

Several studies on tax simplification, compliance costs, and tax compliance have been conducted previously; for example, the simplification of the DGT's business processes has had a positive and significant impact on taxpayer compliance (Sari, 2023). The complexity of tax regulations does, in fact, have a significant impact on tax compliance (Wiyarni, 2018). In addition to Indonesia, such causality tests have also been conducted abroad; for example Wojciech Kopczuk (2021) emphasizes that tax complexity is a major factor driving non-compliance, making simplification a crucial tool for improving compliance.

Several studies have also focused on compliance costs; for example, compliance costs can mediate the relationship between tax complexity and perceptions of fairness in the tax system (Prasad, 2024). In addition to mediating, compliance costs also have a significant effect on tax compliance (Savitri & Musfialdy, 2015). A similar study was conducted in Tanzania, finding that when taxpayers' compliance costs are very high, voluntary compliance may decline; the forms of compliance costs examined were monetary costs, psychological costs, and time costs (Chindengwike, 2022).

Based on previous research on the variables of tax simplification, compliance costs, and tax compliance, a research gap has been identified: no study has yet tested causality in the context following the implementation of a specific policy, namely the TER scheme.

In addition to quantitative research, qualitative studies on the calculation of Article 21 income tax under the TER scheme have also been conducted from various perspectives. Aulia Dwi Novitasari & Desy Ismah Anggraini (2025) found that the TER scheme results in a lower monthly Article 21 income tax withholding amount for employees with dependents. (Mawaddah & Saragih (2025) also agree that following the implementation of the TER scheme, the average Article 21

income tax withholding for employees of PT X during two tax periods—excluding the most recent tax period—decreased compared to the old scheme. The Article 21 tax rate under the TER scheme is lower than the rate stipulated in the HPP Law. Similarly, Alexandra & Sulistyowati (2024) found that the TER scheme results in lower monthly Article 21 income tax assessments for individual taxpayers with low income and a large number of dependents. Their study also confirms that the TER does indeed reduce compliance costs in terms of time. The TER has also been shown to reduce calculation errors (Nur Fadila et al, 2025). Melfianti & Abbas, (2025) conducted further research on the application of the TER for Article 21 Income Tax using the Four Maxims theory. Their findings indicate that the TER scheme has fulfilled the principle of certainty.

Several studies on TER have also highlighted its impact on the calculation of Article 21 income tax for the most recent tax period. Aryani, (2024) found that in the final tax period, there was a higher underpayment compared to the old scheme, meaning that permanent employees of PT Anugrah will face a larger withholding of Income Tax Article 21 in December 2024 compared to December 2023. Several studies also focus on the months when bonuses and THR are paid. Based on a comparison of the total proportions across tax rates, the TER results in a higher tax burden compared to the rates under the HPP Law due to a drastic increase in gross income from bonuses and THR (Hertiana et al, 2024)

Since the implementation of Coretax in January 2025, research on the use of Coretax has begun to emerge. (Jeconiah Nathanael & Condro Widodo, 2025) explain that Coretax makes it easier for taxpayers to fulfill their Article 21 Income Tax reporting obligations more quickly and accurately. Based on the topic of analyzing Income Tax Article 21 calculations under the TER scheme, previous studies have largely focused on recalculations and analyzing impacts without proposing concrete solutions; thus, the research gap addressed by this study is to provide solutions to the challenges of implementing the TER scheme. Regarding the implementation of Coretax, previous research has predominantly analyzed the procedures for using Coretax without considering the context of compliance costs resulting from the implementation of the TER scheme; thus, the research gap

addressed by this study is to examine the issue of compliance costs resulting from the implementation of the TER scheme within the context of Coretax.

Hypothesis

Based on previous research and as outlined in the conceptual framework, the following quantitative research hypotheses to be tested can be formulated:

- H1 : Simplification of tax calculations (X) has a positive effect on tax compliance (Y)
- H2 : Simplification of tax calculation (X) has a negative effect on compliance costs (M)
- H3 : Compliance costs (M) have a negative effect on tax compliance (Y)
- H4 : Compliance costs (M) mediate the effect of simplification of tax calculation (X) on tax compliance (Y).

Thinking Framework

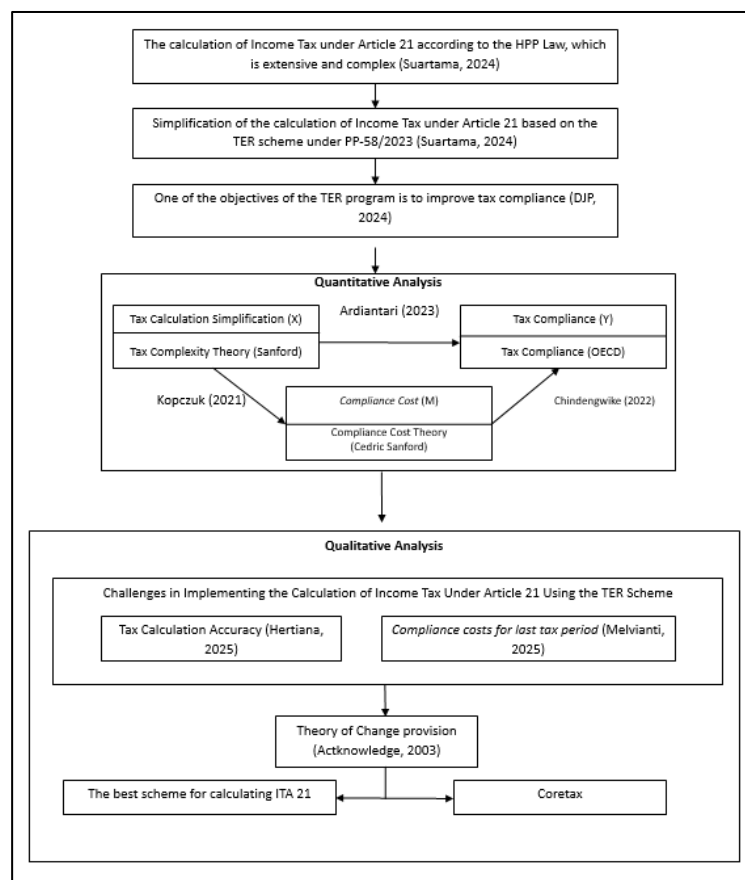


Figure 4. Thinking Framework

RESEARCH METHODS

Type of Research

This study employs a mixed-methods approach. Quantitative methods were used to test hypotheses, while qualitative methods were used to address the evaluative and solution-oriented aspects of the study.

Type and Sources of Data

This study requires two types of data sources: primary data and secondary data. In a quantitative approach, primary data is collected through surveys. In a qualitative approach, primary data is collected through interviews. Secondary data consists of data collected from various available sources (Sekaran & Bougie, 2016).

Questionnaires were distributed to Article 21 income tax withholders in the city of Denpasar. Denpasar was selected as the research site because it accounts for the largest share of Article 21 income tax revenue—62.91%—in the province of Bali. Interviews were conducted from two perspectives: practitioners (in this case, Article 21 income tax withholders) and regulators (relevant officials from the Directorate General of Taxes).

Table 1. Interview Strategy

No	Type of Respondent	Criteria
1	Coorporate Taxpayers	1. Registered as a taxpayer prior to 2023
2	Individual Taxpayers	2. Withholds income tax under Article 21 using the TER scheme
3	Government Taxpayers	3. Has previously withheld income tax under Article 21 without using the TER scheme

Table 2. List of Interview Informants

No	Position	Description
1	Government Agency Treasurer	Informant 1
2	Finance Staff or Tax Consultant for Corporate Taxpayers/Individual Taxpayers	Informant 2, Informant 3, Informant 4
3	Analyst at the Directorate of Business Process Transformation, Directorate General of Taxes	Informant 5

No	Position	Description
4	Analyst at the Directorate of Tax Regulations II, Directorate General of Taxes	Informant 6

The relevant informants come from two perspectives: practitioners of Article 21 income tax calculation under the TER scheme and regulators. The professional backgrounds of the informants are described in Table 3.

Data Analysis and Processing Procedures

First, a quantitative analysis was conducted using structural equation modeling (SEM) in STATA to test a hypothesis following the implementation of a policy. Second, a qualitative analysis was conducted using thematic analysis in NVivo to identify patterns in strategies for addressing the challenges of implementing a policy.

Table 2. Professional Background of the Informants

Informant Code	Positions	Professional Background
Informant 1	Government Agency Treasurer	1. Expenditure Treasurer at a vertical unit of the Ministry of Finance since 2018 2. Experienced in withholding income tax under Article 21 since the implementation of e-SPT, DJP Online, and Coretax
Informant 2	Tax Consultant	1. Tax consultant for various hotels and accommodations in Bali since 2012
Informant 3	Finance Staff of Corporate Taxpayers	1. A finance staff member who has been handling taxes at a tourism company since 2023
Informant 4	Finance Staff of Corporate Taxpayers	1. Finance staff member responsible for tax matters at a seafood export company since 2020
Informan 5	Analisis pada Direktorat Transformasi Proses Bisnis, Direktorat Jenderal Pajak	1. A member of the PSIAP Team 2. Responsible for the Coretax module related to the Article 21 Income Tax business process
Informan 6	Analisis pada Direktorat Peraturan Perpajakan II, Direktorat Jenderal Pajak	1. A member of the Drafting Team for Minister of Finance Regulation No. 168 of 2023 2. Participated in monitoring and evaluating the implementation of TER

RESULT AND DISCUSSION

Respondent Profile

The number of respondents who completed the questionnaire and whose data were used for SEM analysis was 48. This sample size met the minimum sample size requirement according to Sekaran and Bougie (2016). The sociodemographic profile of the respondents is presented in Table 4.

Table 3. Socio-Demographic Profile of Respondents

Category	Description	Frequency	Percentage (%)
Type of taxpayer	Individual Taxpayer	10	20,8
	Coorporate Taxpayer	4	8,3
	Government Taxpayer	34	70,8
Age	20 – 30 years old	21	43,8
	31 – 40 years old	21	43,8
	41 – 50 years old	6	12,5
	51 – 60 years old	0	0
Degree	Diploma	30	62,5
	Bachelor	19	39,6
	Master	0	0
	Doctor of Philosophy	0	0

Quantitative Analysis

Table 4. SEM Estimation Result

No	Variable		p-value	coefficient
	Endogenous	Exogenous		
1	Tax_compliance	Simplification	0,000	0,839
2	Compliance_cost	Simplification	0,001	-0,619
3	Tax_compliance	Compliance_cost	0,414	-0,124
4	Tax_compliance	Compliance_cost,	0,295	0,146
		Simplification	0,000	0,930

Relationship between the Simplification of Article 21 Income Tax Calculation and Tax Compliance

Based on the SEM model estimation, the results indicate a statistically significant effect. This finding suggests that simplifying the calculation of Article 21 Income Tax through the TER scheme can encourage tax withholding agents to fulfill their tax obligations more accurately, timely, and in accordance with applicable regulations. This finding is consistent with the theoretical framework proposed by (Damajanti, 2017) dan (Ardiantari, 2023) It also aligns with the government's objective in issuing Government Regulation (PP) No. 58 of 2023. Furthermore, this finding is supported by field research conducted by Sugiarto dan Suryani (2024) at PT XYZ, which demonstrated that the implementation of the TER scheme successfully simplified the Article 21 Income Tax withholding process. The simplified system makes tax calculations more transparent and easier for taxpayers to understand, while also reducing the potential for errors in the tax withholding and reporting processes.

Nevertheless, the implementation of the TER scheme in promoting tax compliance is not without challenges, particularly the potential occurrence of tax overpayments (LB), especially for taxpayers with irregular income or additional sources of income (Ofisiprima, 2023). A tax rate based on gross income may result in tax payments exceeding the taxpayer's actual tax liability, particularly for taxpayers with fluctuating or multiple sources of income. Therefore, administrative efficiency should be complemented by an adequate adjustment mechanism.

Relationship between the Simplification of Article 21 Income Tax Calculation and Compliance Cost

Based on the SEM model estimation, the results indicate a statistically significant effect. Therefore, the hypothesis stating that the simplification of Article 21 Income Tax calculation affects compliance cost is supported. This finding is consistent with the field research conducted by Kurniyawati et al. (2024) which demonstrated that implementing the TER scheme for Article 21 Income Tax

calculation can simplify the tax calculation process and reduce the compliance costs incurred by tax withholding agents, as evidenced by the case study of PT Anugrah.

The implementation of the TER scheme may reduce compliance costs by shortening calculation time, reducing administrative workload, and minimizing errors that require corrections to withholding tax records or tax returns. These efficiencies may also reduce the need for external tax consultants or additional tax software. However, the actual reduction in compliance costs depends on the complexity of payroll data and the availability of adequate technological support.

Relationship between Compliance Cost and Tax Compliance

The significance test of the relationship in the structural model indicates that compliance cost does not have a statistically significant direct effect on tax compliance in this study. This finding is inconsistent with (Prasad, 2024) who found that compliance cost can serve as a mediating variable between tax simplification and perceptions of fairness in the tax system. Furthermore, this finding differs from the results of (Savitri & Musfialdy, 2015) which demonstrated that compliance cost has a significant effect on tax compliance.

The implementation of the TER scheme for Article 21 Income Tax primarily focuses on simplifying tax calculations rather than reducing compliance costs. Although calculation time may be reduced, taxpayers may still incur costs for tax consultants or tax software. The findings indicate that some respondents continue to rely on third parties to perform tax calculations. Consequently, simplification through the TER scheme does not necessarily lead to a significant reduction in compliance costs, and its effect on tax compliance may therefore not be direct.

Mediating Effect of Compliance Cost on the Relationship between the Simplification of Article 21 Income Tax Calculation and Tax Compliance

The results indicate that compliance cost does not serve as a mediating variable in the relationship between the simplification of Article 21 Income Tax calculation and tax compliance. Although, theoretically, lower compliance costs are

expected to encourage greater tax compliance, this relationship was not statistically supported in the research model.

This finding is inconsistent with (Prasad, 2024) who found that compliance cost can mediate the relationship between tax simplification and perceptions of fairness in the tax system. The differences in findings may be attributed to several factors, including differences in research methodology, geographical context, respondent characteristics, and the research periods examined.

Qualitative Analysis

1. The Role of Coretax in Addressing Compliance Cost Challenges Arising from TER Implementation

Prior to the implementation of Coretax, tax withholding agents calculated Article 21 Income Tax manually using spreadsheets, made payments through e-Billing, and subsequently entered the NTPN into DJP Online for reporting purposes. This process was prone to administrative errors, such as incorrect tax account codes and NTPN entries, which could require a book-entry transfer (*pemindahbukuan*). Following the implementation of Coretax, income data can be imported and taxes are calculated automatically, while payment and reporting processes are integrated, eliminating the need for manual NTPN entry. In addition, Coretax facilitates centralized reporting through NITKU for taxpayers with multiple branches.

Table 5. Article 21 Income Tax Business Process Before and After Coretax Implementation

Business Processes	Before Coretax	After Coretax
ITA 21 calculation	Calculations using spreadsheets or separate applications → prone to human error	Automatic rule based calculation
Payment	Separate e-Billing payment; NTPN may require manual re-entry into the reporting system (double entry)	Integrated payments — the billing code or deposit account is automatically recorded and linked to the Tax Return in the system

Business Processes	Before Coretax	After Coretax
Issuance of withholding tax certificates	Issuance of withholding tax certificates and Tax Return preparation are performed separately across applications → repetitive processes.	Withholding tax certificates and draft Tax Returns automatically generated from the same data
Monthly tax return filing	Each branch performs its own calculations and reporting → central reconciliation requires additional work.	Centralization and aggregation through Coretax → easier centralized reporting

The changes in business processes brought about by Coretax help address the compliance cost challenges associated with the implementation of the TER scheme, particularly in terms of time, monetary, and psychological costs.

Table 6. The Impact of Coretax on Compliance Costs in the Article 21 Income Tax Business Process

Coretax Feature	Description	Impact on Article 21 Income Tax Compliance Costs
XML Import	Employee and income data can be imported in bulk.	Time cost decreases
NIK Validation System (Automatic Rule)	The system automatically validates taxpayer identification information.	Time cost and psychological cost decrease
Article 21 Income Tax Calculator	Article 21 Income Tax is calculated automatically based on the TER rules.	Time cost and psychological cost decrease
Deposit Account	A facility for storing tax funds that can be directly used for tax payments.	Time cost and psychological cost decrease
Payment and Reporting Integration	Tax payments are automatically linked to Tax Return filing without requiring NTPN to be re-entered.	Time cost and psychological cost decrease
Centralized Reporting Using NITKU	Reporting can be conducted centrally, while branches only need to issue withholding tax certificates.	Time cost and money cost decrease

However, the implementation of Coretax still faces several challenges. Although NIK and NPWP data validation improves accuracy, it may also prolong administrative processes when the data are not synchronized, thereby increasing *time cost*. In addition, the integration of Coretax with other systems is not yet fully

optimized, requiring taxpayers to process data using external applications before importing it into Coretax. From a human resources perspective, limited training and user understanding increase *psychological cost* during the transition period. Technical issues, such as system errors, limitations in bulk data processing, and the unavailability of a feature for collectively downloading withholding tax certificates, also hinder tax administration. Nevertheless, these challenges are considered part of the transition process toward a more integrated and modern tax administration system.

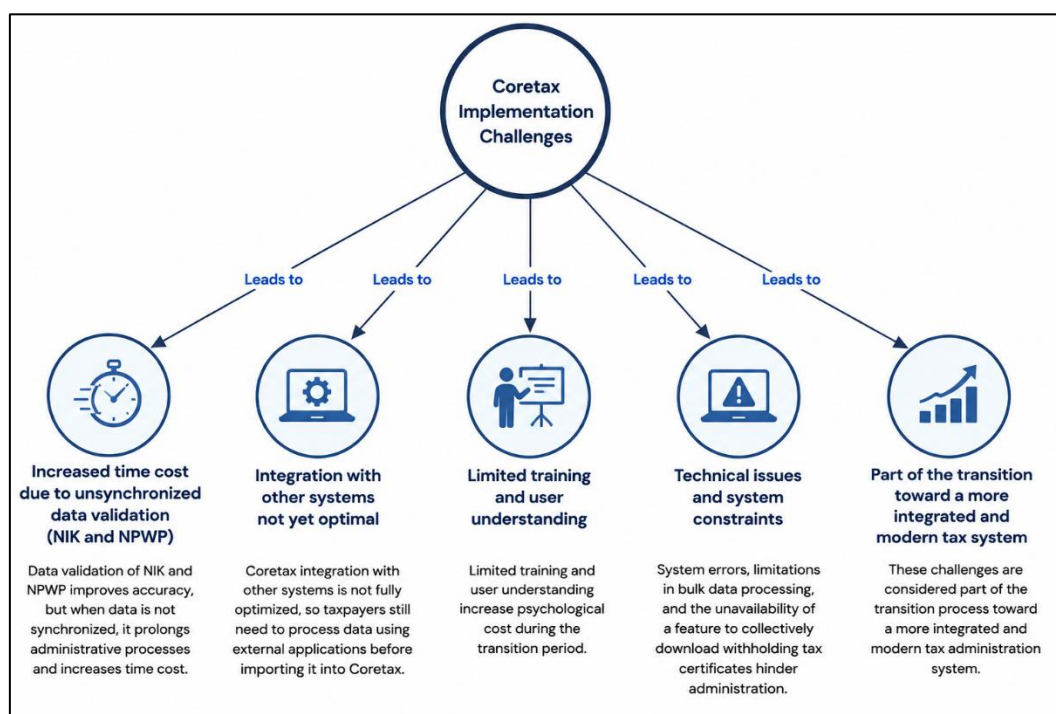


Figure 5. Challenges in Implementing Coretax in the Article 21 Income Tax Business Process

However, the DGT is committed to conducting evaluations and preparing for further development. One such initiative is strengthening integration with government systems, such as SAKTI, as well as third-party payroll applications, to ensure end-to-end connectivity in tax business processes. Integration with the Dukcapil database is also necessary to improve data validity and reduce administrative errors resulting from discrepancies between NIK and NPWP numbers. In addition, improving system capacity and stability is crucial to

overcoming technical challenges during the reporting period. Expanding outreach and training is expected to accelerate user adaptation and reduce the psychological cost.

Table 7. Evaluation and Development in Response to the Coretax Challenge

Aspect	Challenges	Evaluation and Development
System Integration	Not yet fully integrated with third-party payroll systems	Integrate Coretax with SAKTI and/or third-party payroll systems
NIK Validation System	NIK validation process is administratively burdensome	Integrate population data between the Civil Registration Agency (Dukcapil) and the Directorate General of Taxes (DJP)
Infrastructure Strengthening	Frequent technical disruptions and application errors	Increase bandwidth capacity to improve system performance
Bulk Processing Features	Does not support bulk calculation, downloading, and electronic signing	Develop bulk download and electronic signing features
User Capacity Building	Limited training on Coretax usage	Expand Coretax training and user outreach

The Best Scheme to Address Challenges in the Accuracy of Article 21 Income Tax Calculation

Theory of Change Framework

Based on the ToC framework, the long-term objective of formulating an optimal Article 21 Income Tax calculation scheme is to improve tax compliance. Informant 6, referring to Government Regulation (PP) No. 58 of 2023, stated that tax compliance encompasses formal, material, and behavioral aspects. Coretax is expected to improve process efficiency and integration; however, simplification through the TER scheme does not yet fully ensure that taxpayers' annual tax liabilities are accurately determined.

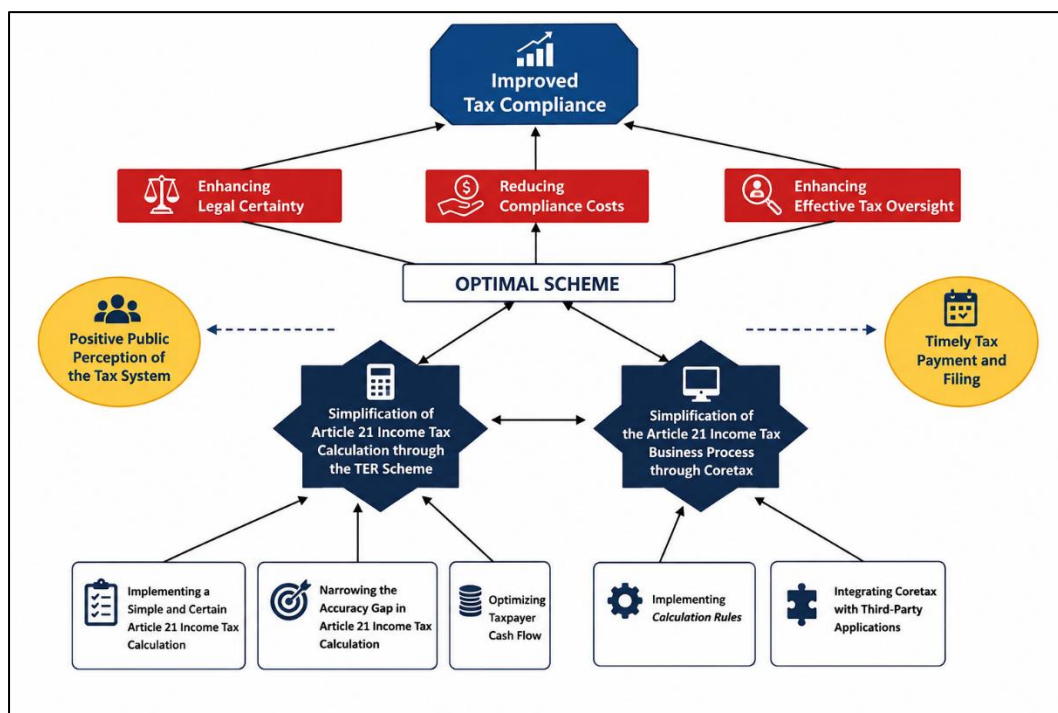


Figure 6. Evaluation and Development of a Concept Map for the Best Method of Calculating Income Tax Under Article 21 Based on the ToC Framework in Response to the Coretax Challenge

Based on the analysis of six informants, the main prerequisites include legal certainty, reduced *compliance costs*, and more effective tax oversight. There are three key prerequisites for an effective tax system. First, legal certainty is necessary to prevent differences in interpretation, particularly in classifying regular and irregular income, which affects the calculation of Article 21 Income Tax. Second, reducing *compliance costs* is essential to minimize time burdens and potential errors arising from lengthy administrative processes. Third, effective tax oversight is needed to facilitate data tracing by both tax authorities and taxpayers. Prior to the implementation of the TER scheme, the complexity of tax calculations made *tracing back* more difficult for Account Representatives and Tax Auditors.

Based on the interviews, the main assumptions include the availability of adequate and reliable technological infrastructure. System effectiveness depends heavily on technological readiness, including system stability and data-processing capacity. Another assumption is that taxpayers have sufficient capacity to adapt to

digital systems. Informants 2 and 3 indicated that users experienced difficulties in adapting to the new system during the initial implementation period, resulting in increased *psychological costs*. Another assumption is that the data used in the system are accurate and integrated, particularly through synchronization with population databases.

The main indicators identified include the timeliness of tax filing and payment, as well as positive public perceptions of the tax system. The first indicator is the timely filing and payment of Article 21 Income Tax. The second is positive public perception of the tax system. Informant 6 emphasized that perceptions of the tax system, particularly regarding Article 21 Income Tax, are subjective and may be influenced by users' initial experiences in adapting to the system. Therefore, these indicators should be evaluated continuously to ensure that positive perceptions can be sustained over the long term.

Best Article 21 Income Tax Calculation Scheme

Based on the Theory of Change framework, the TER scheme is considered the optimal alternative for simplifying Article 21 Income Tax calculation through a more practical mechanism, namely by multiplying the effective rate by gross income. Informants considered this scheme to improve simplicity, legal certainty, and consistency in tax calculations compared with the previous method, which was more complex and prone to administrative errors. However, the implementation of TER still faces accuracy challenges because the rates are based on historical simulations that do not fully accommodate variations in irregular income, potentially resulting in tax overpayments or underpayments. Therefore, further refinement of the TER scheme is necessary to narrow the accuracy gap.

One potential improvement is to expand the TER rate categories based on variations in non-taxable income thresholds (PTKP) and taxpayer characteristics. By introducing more detailed rate classifications, the system can generate withholding estimates that more closely reflect taxpayers' actual circumstances. Table 12 presents the proposed monthly TER rates with expanded TER categories

Table 8. Proposed Monthly TER Scheme with Expanded Rate Categories

Monthly TER Category	PTKP Status	Monthly Gross Income	Existing TER rate	Recommendation of new TER rate
A	TK/0	Rp10.000.000	2,25%	2,40%
B	K/0, TK/1	Rp10.000.000	2,25%	2,20%
C	K/1, TK/2	Rp10.000.000	1,50%	2,00%
D	K/2, TK/3	Rp10.000.000	1,50%	1,83%
E	K/3	Rp10.000.000	1,50%	1,65%

The simplification of the Article 21 Income Tax business process through Coretax is one of the key interventions within the ToC framework to reduce *compliance costs* and improve tax compliance. Based on the interviews, this simplification is primarily achieved through two main aspects: the implementation of *calculation rules* within the system and the integration of Coretax with third-party systems. Informants explained that *calculation rules* directly reduce the potential for *human error*, improve calculation consistency, and provide assurance that tax calculations comply with applicable regulations. From the taxpayers' perspective, this feature also improves time efficiency in the calculation process. However, simplification through *calculation rules* is not yet fully optimal, particularly when dealing with large volumes of data.

In addition to calculation automation, business process simplification is achieved through the integration of Coretax with various related systems, both within the Directorate General of Taxes (DJP) and with third-party systems. This integration aims to reduce the fragmentation of business processes that were previously distributed across multiple applications. It directly reduces *administrative costs* and accelerates the fulfillment of tax obligations. Furthermore, integration also involves the utilization of external data, such as population data (NIK), as well as the development of integration with other systems, including *payroll* applications and SAKTI. However, the interviews indicate that this integration is not yet fully optimized. In practice, taxpayers still need to process

data through their internal systems or convert data formats before uploading them to Coretax

CONCLUSION

Summary

The quantitative findings indicate that simplification through the TER scheme significantly improves tax compliance and reduces compliance costs, although compliance costs neither directly affect tax compliance significantly nor mediate this relationship. The qualitative findings complement these results by showing that Coretax supports administrative efficiency through automated calculations and integrated payment and reporting processes, despite persistent challenges in system integration, data validation, and technical reliability. These findings suggest that optimizing the TER scheme and strengthening Coretax are complementary measures to improve tax compliance and administrative efficiency.

Recommendation

For future research, it is recommended to incorporate additional variables, such as *perceived ease of use* and the quality of tax administration services, and to expand the geographical and respondent coverage to improve the generalizability of the findings. Future studies may also explore *psychological cost* and compare different taxpayer sectors.

The Directorate General of Taxes (DGT) should evaluate the accuracy of TER rate categories, strengthen Coretax integration and system reliability, and improve taxpayer training and assistance. Meanwhile, tax withholding agents should enhance employee data validation, regularly reconcile tax calculations, and optimize the use of Coretax and integrated payroll systems to minimize administrative errors and compliance costs.

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