The 8th International Seminar on Business, Economics, Social Science, and Technology (ISBEST) 2025
e-ISSN 2987-0461
Vol.5 No. 1 (2025)

AI-ASSISTED TAX CALCULATIONS: TRANSFORMING ACCOUNTING INTEGRATION AND FINANCIAL MANAGEMENT IN THE DIGITAL ERA

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Abstract

In the rapidly evolving digital era, the self-assessment system in Indonesia's taxation presents significant challenges, particularly for taxpayers with limited tax knowledge and technical capabilities. Difficulties in accurately calculating taxes impact tax compliance, accounting records, and overall financial management. Interview results with 26 respondents show that 65.4% strongly agree that the complexity of the tax system and tax calculation hinders their compliance process, ultimately disrupting their accounting records. The core issue lies in the taxpayers' inability to precisely calculate taxes, manage and analyze taxable objects, and classify tax-related transactions within accounting records. These difficulties, in turn, interfere with the workflow of accounting and financial decision-making. This study explores the potential application of artificial intelligence (AI) as a solution to support tax calculation within the self-assessment system. AI can offer automated computation, calculation verification, and real-time guidance that assist taxpayers in understanding and integrating tax obligations into their financial systems. The objective of this research is to assess the impact of AI on calculation accuracy, user confidence, and the integration of tax obligations into accounting systems. The findings are expected to contribute to the development of more efficient digital accounting practices and support better financial decision-making.

Keywords: Accounting, Tax, Aritificial Intellegence, Self-assesment, Technology

Introduction

Tax is a mandatory contribution set by law to support national growth and improve public well-being. As the main source of government revenue, taxation plays a crucial role in funding the national budget. For example, in 2020, tax revenues reached IDR 1,070 trillion, which was about 89.3% of the government's revenue target (Kementerian Keuangan, 2020). Paying taxes is not just a duty; it is also a way for citizens to participate in building the nation. Tax compliance shows taxpayers' willingness to follow tax laws. According to Sari (2017), tax reporting is done voluntarily, but tax awareness should come with a responsible attitude (Saifudin & Novitasari, 2020). Low tax awareness can hinder the government's revenue potential (Wahyuni, 2018). Besides awareness and modern administrative systems, tax compliance is affected by law enforcement, including tax penalties (Wahyuni, 2018; Saputra, 2019).

Recently, Indonesia has seen major tax changes, from alterations in tax rates and administrative reporting systems to the removal of several long-used reporting formats. Regulatory and administrative changes happen nearly every year to respond to socio-economic shifts (Djoko Santosa & Rusdianto Sesung). However, the simultaneous rollout of many new rules has raised serious concerns about how ready taxpayers are, both individuals and companies. Constant changes in rules and systems have led to confusion in reporting and calculating tax duties. The Directorate General of Taxes (DJP) introduced the CoreTax system, designed since 2018 and tested in 2023, which will take effect in 2025 (Fitria Arianty, 2024). Its main goal is to improve taxpayer registration, reporting, and payment. It aims to simplify tax administration and ease interactions with stakeholders.

Despite this, limited outreach and the premature launch of the CoreTax system have created many problems. The rollout of CoreTax, along with various regulatory changes, has complicated its implementation and reduced the effectiveness and efficiency of accounting records. These shifting regulations and the launch of CoreTax point to an urgent need for solutions that can help taxpayers manage their tax duties more effectively. While several studies have looked at the potential use of Artificial Intelligence (AI) in taxation in Indonesia, these studies took place before the latest administrative reforms, including CoreTax. This raises the question of whether AI applications are still relevant, effective, and compatible with the new, more complicated tax system.

On an international scale, research shows AI's strategic role in changing tax systems. As noted by Ezeife et al. (2021), "Among the technologies reshaping tax systems, Artificial Intelligence (AI) stands out as a powerful tool that is set to redefine how tax administrations operate." However, no research has yet focused on applying AI in Indonesia within the context of the latest tax reforms. This study aims to fill that gap by

assessing how AI can improve tax calculation accuracy, build taxpayer trust, and help integrate tax duties into accounting records under the new CoreTax system.

This research addresses three main questions:

(1) How accurate are current AI platforms in calculating Indonesian tax duties under the CoreTax system?

(2) To what extent do taxpayers trust AI-assisted tax calculations?

(3) How well can AI assist in integrating tax duties into existing accounting systems? Using a mixed-method approach that combines qualitative interviews with experimental testing of AI platforms, this study offers insights into the practical use of AI in Indonesia's changing tax landscape.

Literature Review

Tax Compliance Challenges in Indonesia

Tax compliance in Indonesia refers to the degree to which individuals and businesses adhere to tax laws and regulations by accurately reporting their income, expenses, and financial activities while paying required taxes in a timely manner (Firmansyah & Wijaya, 2022). However, numerous factors contribute to the complexity of tax recording, calculation, and reporting processes, creating significant challenges for taxpayers. The complexity of Indonesia's tax system has resulted in various compliance difficulties. Research indicates that tax compliance in Indonesia remains at a low level, consequently causing state revenues from the taxation sector to fall short of expectations (Kurniawan et al., 2023). These compliance challenges stem from multiple sources, including the intricacy of tax regulations, frequent regulatory changes, and insufficient taxpayer understanding of their obligations.

To address these compliance issues, several mitigation strategies have been proposed, including comprehensive tax education and training programs, efficient use of technology, regular supervision and auditing mechanisms, appropriate penalty structures, enhanced information technology systems, improved transparency and accountability measures, strong top-level management support, and accessible tax consultation services. Despite these proposed solutions, implementation remains challenging, particularly given the recent introduction of new systems such as CoreTax, which has added another layer of complexity to the tax compliance landscape.

Technology Adoption in Tax Administration

The growth of technology has made it necessary to include it in tax systems. This is especially clear with the launch of Indonesia's CoreTax system by the Directorate General of Taxes. This system brings all tax activities into one application that all taxpayers can access. It represents a big step toward digital tax management in Indonesia. However, successfully implementing tax technology requires considering several factors beyond just technical skills. Tax technology projects are likely to fail without teamwork across different departments. Important factors that multinational companies should think about when starting tax transformation projects include managing change, effective project management, thorough training throughout the organization, and encouraging a tech-savvy mindset (Dickler et al., 2020). This emphasizes that technology alone is not enough; organizational readiness and user acceptance are also vital for successful implementation.

Additionally, technology can enhance tax collection in three key areas: identifying the tax base, monitoring compliance, and facilitating compliance (Scarpini, Okunogbe, & Santoro, 2023). However, even the most user-friendly technology faces significant challenges during implementation. Basic infrastructure needs, stable internet connections, taxpayer resistance, and uncooperative regulatory environments can limit the benefits of new technology. These issues show the need for clear strategies that tackle both technical and human aspects when updating tax systems. The OECD Forum on Tax Administration points out that adapting institutions for the technology-driven era involves several key points (M.R.U.D. Tambunan & H. Rosdiana, 2020). These include responding quickly to taxpayer expectations by reducing face-to-face interactions and increasing digital services, maintaining flexibility to handle sudden changes, and creating real-time services through teamwork and administrative integration. Additionally, tax institutions must focus on compliance by improving technology while ensuring they have skilled people and a data-driven culture. User acceptance is crucial for the success of tax technology implementations. Research shows that taxpayer trust in digital systems greatly affects adoption rates. Factors like perceived ease of use, system reliability, and data security are vital for building user confidence (Technology Acceptance Model studies). Furthermore, integrating new tax systems with existing accounting platforms can create barriers to smooth adoption. This needs careful attention to ensure compatibility and maintain workflow continuity. These challenges become especially important when considering automated solutions like artificial intelligence, where trust and integration capabilities are essential for successful implementation.

Artificial Intelligence Applications in Taxation_

Artificial Intelligence has greatly impacted many human activities across different sectors. Its application has extended beyond traditional fields like healthcare and education to areas such as taxation systems. This technological shift has become increasingly important as governments worldwide look to modernize their tax

administration processes and improve compliance methods. The growth of AI technologies in taxation has transformed conventional tax administration practices. These methods have moved from manual, time-consuming tasks to automated, smart systems. Recent research indicates that the success of AI in taxation relies on using various technical components, each contributing to tax administration and compliance monitoring (Wang, 2024). These components consist of machine learning algorithms for recognizing patterns, natural language processing for analyzing documents, and predictive analytics for evaluating risks and detecting fraud. Modern tax administration increasingly incorporates AI technologies. Tax consultants and experts are adopting AI tools in their work due to the ongoing digital transformation of tax processes (Pavlova & Knyazeva, 2021). This change is driven by the need for better accuracy, efficiency, and consistency in tax calculations and reporting. AI systems excel at handling complex calculations, processing large volumes of data, and identifying patterns that might be overlooked in manual reviews. Examples from across the globe demonstrate successful AI use in taxation, including automated tax return processing systems, smart audit selection methods, and real-time compliance monitoring platforms. These systems have delivered positive results by reducing processing times, minimizing human errors, and enhancing overall tax collection efficiency. However, using AI in taxation also poses challenges, including concerns about system reliability, the need for ongoing training and updates, and strong data security measures to protect sensitive taxpayer information.

Research Gap and Study Justification

Despite the increasing research on AI in taxation, few studies have looked at how different AI platforms compare in accuracy when calculating taxes, especially regarding Indonesia's new CoreTax system. Existing literature shows that AI can improve tax administration, but no research has specifically examined how well popular AI platforms like ChatGPT, Claude, and DeepSeek perform in Indonesian tax situations. Additionally, there is not enough evidence about how confident users feel about AI-generated tax calculations, or how well these systems fit with current accounting processes. This study addresses these gaps by comparing the effectiveness of AI platforms in tax compliance tasks, focusing on calculation accuracy, user confidence, and integration with accounting systems in Indonesia's changing tax environment.

Methods

This study combines a research paper approach, experimental testing, and qualitative interviews to evaluate the role of Artificial Intelligence (AI) in Indonesia's self-assessment taxation system. The research begins with a literature review on taxation challenges, taxpayer compliance, and prior studies on AI applications in taxation. Primary data were obtained through interviews with 26 taxpayers (both individual and corporate) using purposive sampling. The interviews explored difficulties in tax calculation, reporting, and integration into accounting records, especially in the context of the new CoreTax system. In addition, a direct experiment was conducted by testing identical tax scenarios across three AI platforms: ChatGPT, Claude, and DeepSeek. Each AI was evaluated on its ability to perform tax calculations, classify taxable objects, and provide guidance on reporting. The findings from both interviews and experiments were analyzed thematically and descriptively, focusing on three indicators: (1) calculation accuracy; (2) user confidence, and; (3) integration of tax obligations into accounting systems.

Results and Discussions

Interview Result

Data collection took place through a mix of online surveys using Google Forms and virtual interviews via Zoom. Both individual taxpayers and corporate taxpayers, represented by tax staff from five companies in Indonesia, participated. The interview process and the distribution of questionnaires occurred from April 2025 to July 2025. In total, 26 participants were interviewed. Each had direct involvement with tax matters, especially in using the CoreTax system. The demographic profile of the respondents is shown below.

Table 1. Demographic Profile of Respondents

Demographic Category	Frequency	Percentage
Age Group		
18-25 years	19	73.10%
25-30 years	7	26.90%
Occupation		
Private Employee/Tax Staff	16	61.50%
Student	8	30.80%
Others	2	7.70%
Total	**26**	**100%**

A total of 26 taxpayers took part in this study through online surveys sent out via Google Forms. The demographic analysis shows that most respondents (73.1%) were young adults aged 18 to 25 years, while 26.9% were between 25 and 30 years old. In terms of occupation, private employees and tax staff made up the largest group (61.5%), followed by students (30.8%) and other occupations (7.7%). This demographic makeup indicates a sample mainly consisting of young, working professionals with direct experience of tax obligations and the new CoreTax system implementation. Respondents were asked to rate their experience with the new CoreTax system. The survey used a 5-point Likert scale where 5 meant Strongly Agree, 4 meant Agree, 3 meant Neutral, 2 meant Disagree, and 1 meant Strongly Disagree.

Table 2. Respondent Assessment of CoreTax System Difficulties

Response Category	Frequency	Percentage
Strongly Agree (5)	17	65.40%
Agree (4)	5	19.20%
Neutral (3)	3	11.50%
Disagree (2)	1	3.80%
Strongly Disagree (1)	0	0%
Total	**26**	**100%**

The results show that respondents strongly agree about the challenges of CoreTax implementation. A large majority, 84.6%, either strongly agreed or agreed that the CoreTax system makes their tax compliance processes difficult. Only 3.8% disagreed with this view, and 11.5% were neutral. These findings highlight common concerns about the current state of CoreTax implementation and its impact on taxpayer compliance activities.

AI Platform Experimental Results

1. Three representative Indonesian tax scenarios were developed to evaluate AI platform performance:PPh 21 (Individual Income Tax) Scenario: Employee salary calculations with family status descriptions for Personal Tax Relief (PTKP) determination
2. PPh 23 (Withholding Tax) Scenario: Invoice documents containing management fees and other services subject to Article 23 withholding tax
3. PPN (Value-Added Tax) Scenario: Commercial transactions requiring VAT calculations under current Indonesian regulations

Each scenario included actual document uploads (salary slips, invoices, transaction records) with requests for the AI platforms to provide: (1) accurate tax calculations, (2) proper recording procedures, and (3) compliance guidance. The platforms were evaluated based on calculation accuracy, regulatory compliance, and guidance quality.

Based on the expireminta result, we've got the data that three Indonesian tax scenarios were tested across ChatGPT, Claude, and DeepSeek platforms: PPh 21 (individual income tax), PPh 23 (withholding tax), and PPN (value-added tax). Each platform's performance was evaluated based on calculation accuracy, regulatory compliance, and guidance quality.

Table 3. AI Platform Performance by Tax Type

Tax Type	ChatGPT	Claude	DeepSeek
PPh 21	Calculation accurate, final result incorrect	Most accurate, complies with latest regulations	Calculation accurate, final result incorrect
PPh 23	Accurate calculation, good description	Accurate calculation, **best description and guidance**	Accurate calculation, basic description
PPN	**Uses current 12% rate**	**Uses current 12% rate**	Uses outdated 11% rate

Table 3 compares the performance of AI platforms across three major Indonesian tax types: PPh 21, PPh 23, and PPN.

For PPh 21 (Individual Income Tax), Claude outperformed the other platforms by providing the most accurate results and ensuring compliance with the latest regulations. ChatGPT and DeepSeek could perform

accurate intermediate calculations, but they produced incorrect final outputs. This presents risks if taxpayers depend on these platforms to determine final tax liability.

In the PPh 23 (Withholding Tax) case, all three platforms generated accurate calculations. However, Claude stood out by offering the best guidance, providing step-by-step explanations that help with taxpayer education and compliance. ChatGPT offered a clear explanation but was not as thorough as Claude, while DeepSeek provided only basic information.

For PPN (Value-Added Tax), both ChatGPT and Claude used the correct 12% VAT rate in line with the latest regulations. On the other hand, DeepSeek applied the outdated 11% rate, showing a gap in regulatory updates that could lead to compliance errors if not fixed.

The findings show that the main challenge is not user ability but the design and implementation of the CoreTax system itself. Most respondents were young and tech-savvy, yet they still faced difficulties using the system. This confirms that digitalizing tax administration does not automatically ensure ease of use, especially when the user interface, technical support, and outreach are limited. In other words, the barriers are more systemic than individual. But these problems can be minimze by using some technological development, but we also need to choose the accurate AI for doing the tax calculation. So even if the user of coretax can not doing calculation on the tax itself, they can choose the better AI to be their guidance and reference.

Comparing the three AI platforms revealed notable differences. Claude achieved the highest accuracy because it aligned with the latest regulations and provided step-by-step guidance to help users understand the taxation process, not just generate final figures. In contrast, ChatGPT could perform structured calculations but still made errors in the PPh 21 scenario, which could mislead taxpayers if used without validation. Meanwhile, DeepSeek continued to apply the outdated 11% VAT rate, showing weaknesses in regulatory updates. These results emphasize that the reliability of AI depends not only on computational intelligence but also on how well it updates regulations and the quality of guidance it provides.

These findings have important implications for using AI in taxation. If AI is used without validation, even small mistakes could lead to serious consequences for taxpayers, such as misreporting or administrative penalties. Therefore, AI should act as a supportive tool to complement official systems, not replace them. Integrating AI into CoreTax could be a valuable opportunity if it is backed by real-time regulatory updates, official validation from tax authorities, and strong data protection measures.

Additionally, the results suggest that AI has significant potential as a tool for tax education. Clear and interactive guidance, like that offered by Claude, can improve tax literacy while easing the administrative burden on taxpayers. Thus, AI should not only be seen as a technical solution for tax calculation but also as an educational tool that encourages long-term compliance.

Conclusion

This study looked at taxpayer experiences with the CoreTax system and evaluated the ability of three AI platforms, ChatGPT, Claude, and DeepSeek, to handle Indonesian tax scenarios. Data came from 26 respondents through online surveys and interviews, followed by testing the AI platforms on PPh 21, PPh 23, and PPN cases. The survey and interview findings show that many respondents, especially young professionals and tax staff, find the CoreTax system difficult to use. Over 80 percent of participants either agreed or strongly agreed that the system complicates their compliance tasks. This suggests that despite the government's efforts to modernize tax administration, taxpayers still face challenges, particularly regarding system usability and user support. Even younger and tech-savvy respondents felt unhappy with the system. This indicates that the issue resides not in users' ability to adapt to technology but in the design and implementation of the CoreTax system itself. Therefore, improving the system's interface, technical support, and user training are urgent needs for the Directorate General of Taxes.

The evaluation of AI platforms provided further insights. Claude was the strongest platform, consistently producing accurate results aligned with the latest regulations and offering clear guidance. ChatGPT provided reliable intermediate calculations but did not deliver correct final results for the PPh 21 scenario and offered fewer details than Claude. DeepSeek performed the weakest because it relied on outdated VAT regulations and offered limited descriptive support. These results suggest that while AI can be a helpful tool for aiding taxpayers in compliance, the accuracy and reliability of each platform differ greatly.

From these two sets of findings, two broader conclusions can be made. First, the adoption of digital tax administration systems like CoreTax still has major barriers from the user standpoint. Without necessary improvements, the potential benefits of digital transformation in taxation may not be fully realized. Second, AI platforms show potential as supportive tools for taxpayers, especially in areas like tax calculation, compliance guidance, and education. However, their role should not be exaggerated without proper validation, integration with official tax systems, and ongoing updates to match regulatory changes.

Future studies should expand the sample size, include taxpayers from different age groups and professional backgrounds, and test a wider variety of tax scenarios. There is also a chance to explore how AI platforms can be formally integrated with official systems like CoreTax to offer real-time assistance while ensuring accuracy

and compliance. Such integration would improve the taxpayer experience and contribute to greater efficiency in the overall tax administration process.

References

Arianty, F. (2024). Implementation challenges and opportunities of Coretax administration system on the efficiency of tax administration. Jurnal Vokasi Indonesia, 12(2), 4–8.

Bangun, S., Hasibuan, P. W. H., & Suheri. (2022). Kepatuhan wajib pajak: Peran sistem administrasi perpajakan modern, kesadaran wajib pajak dan sanksi manajemen perpajakan dalam perspektif Technology Acceptance Model dan Theory of Planned Behavior. Tirtayasa Ekonomika, 17(1), 5.

Dickler A-M, Roover E-D, Moebos.H, Baptista E, Bakker E, Kale S. (2020). Cross-Functional Collaboration and Change Management: The Key Ingredients for Tax Technology Transformation. Bulletion of International Taxation. P5

Ezefie, E., Kokogho, E., Odio, P. E., & Adeyanju, M. O. (2021). The future of tax technology in the United States: A conceptual framework for AI-driven tax transformation. International Journal of Multidisciplinary Research and Growth Evaluation, 2(6), 2–8.

Hasan, S. M., & Mashiyat, T. (2022). Artificial intelligence and tax administration in Asia and the Pacific. Taxation in the Digital Economy, 6–9.

Kamil, I. (2022). Influence of artificial intelligence technology for e-filing and digital service tax (DST) in tax administration on tax compliance. International Journal of Management Studies and Social Science Research, 4(2), 4–8.

Kurniawan, A. W. H., & Inayati. (2024). Implementation of the Core Tax System: Impacts and challenges on tax revenue in Indonesia. Journal Transnational Universal Studies, 3(7), 5–6.

Rizki, A. M., Nurhidayat, M. R., & Yasar, M. M. B. (2025). The future of tax services: Coretax as a technology-based breakthrough. EDUCORETAX, 5(5), 9–11.

Santoro Fabrizio, Scarpini Celeste, Okyia Stephen. (2024). The Potential of Digital ID Systems for Tax Administration: The Case of Ghana. ICTD African Tax Administration, 39. 30-37

Santosa, D., & Sesung, R. (2021). Reformasi hukum perpajakan dalam upaya meningkatkan penerimaan dan kepatuhan wajib pajak. Perspektif, 26(2), 3–5.

Silalahi, H. (2024). Enhancing tax compliance in Indonesian government institutions: Identifying and mitigating inhibiting factors. Ilomata International Journal of Tax & Accounting, 5(1), 10–14.

Tambunan, M. R. U. D., & Rosdiana, H. (n.d.). Indonesia tax authority measure on facing the challenge in taxing digital economy. The International Technology Management Review, 9(1), 3–7.

Wala, G. N., & Rasji. (2023). Problems of tax collection by the tax mafia in the perspective of tax law. Jurnal Penelitian dan Pengabdian Masyarakat Indonesia, 2(2), 4.

Wang, M. (2024). AI technologies in modern taxation: Applications, challenges, and strategic directions. International Journal of Finance and Investment, 1(1), 2–4.