Digital Transformation of Central Tax Administration and Compliance Dynamics: A Systematic Literature Review and Conceptual Framework for Post-Pandemic Fiscal Governance

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Abstract

The transformation of central tax administration has accelerated significantly following the global expansion of the digital economy and the COVID-19 pandemic. Governments are increasingly adopting digital tools such as e-invoicing, artificial intelligence–based audits, and integrated tax platforms to improve compliance and administrative efficiency. This study aims to systematically review recent international literature (2020–2025) on central tax digitalization and taxpayer compliance. Using a Systematic Literature Review (SLR) guided by the PRISMA framework, this paper synthesizes key findings from high-impact journals and policy reports. The novelty of this study lies in the development of a Digital Compliance Alignment Framework (DCAF), which integrates technological capacity, behavioral compliance, and institutional governance. The findings indicate that digital tax systems improve compliance not only through enforcement mechanisms but also by enhancing trust, transparency, and administrative simplicity. This study contributes to international tax literature by offering a conceptual model that can guide future empirical research and policy design, particularly in developing economies.

Keywords: Central Taxation, Digital Tax Administration, Tax Compliance, Systematic Literature Review, Fiscal Governance

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Introduction

Central taxation plays a critical role in ensuring fiscal sustainability and maintaining macroeconomic stability across nations. Governments rely extensively on central taxes such as value-added tax (VAT), corporate income tax, and personal income tax to finance public expenditures, support social welfare programs, and stabilize economic cycles. However, traditional tax administration systems increasingly struggle to cope with the complexities of globalization, digital business models, cross-border transactions, and rising taxpayer mobility. These challenges have widened tax gaps and weakened the effectiveness of conventional enforcement mechanisms.

In recent years, digital transformation has emerged as a strategic reform agenda within central tax administrations worldwide. Tax authorities are progressively adopting electronic filing and payment systems, real-time transaction reporting, automated risk assessment, and data-driven audit tools. These innovations aim not only to enhance administrative efficiency but also to improve transparency and reduce compliance costs. The COVID-19 pandemic further accelerated this transformation, as lockdowns and remote working arrangements forced tax administrations to depend heavily on digital infrastructure to maintain operational continuity and revenue collection. Beyond operational efficiency, digital tax systems have reshaped the interaction between tax authorities and taxpayers. Digital platforms reduce information asymmetry, provide clearer guidance, and offer faster feedback mechanisms. As a result, compliance is no longer driven solely by deterrence and audit probability but increasingly influenced by behavioral factors such as trust, perceived fairness, and ease of compliance. This shift reflects a broader transformation from enforcement-oriented tax administration toward a service-oriented and cooperative compliance approach.

The relevance of digital tax transformation is particularly pronounced in developing countries, including Indonesia and other ASEAN economies. These countries face persistent challenges such as large informal sectors, limited administrative capacity, uneven digital literacy, and fragmented government databases. At the same time, rapid digital adoption through ecommerce growth, mobile payment systems, and digital identification initiatives creates both risks and opportunities for central tax administrations. In Indonesia, for example, the implementation of e-invoicing for VAT and the expansion of digital tax services reflect ongoing efforts to modernize tax administration and improve compliance. Similar reforms are observed across ASEAN, although with varying degrees of institutional readiness and technological maturity.

Despite the growing body of literature on digital taxation, existing studies remain fragmented. Many focus primarily on technological aspects such as system design, artificial intelligence (AI), and data analytics while others examine taxpayer behavior from a psychological or economic perspective. Limited research integrates these dimensions into a unified analytical framework, particularly in the context of developing economies where institutional constraints and behavioral responses differ significantly from those in advanced countries. Moreover, empirical evidence from Indonesia and ASEAN remains relatively underrepresented in the global tax literature.

This study is novel because it integrates technological, behavioral, and institutional perspectives into a single conceptual framework, called the Digital Compliance Alignment Framework (DCAF)**.** Unlike prior research that examines digitalization and compliance behavior separately, this framework provides a holistic, context-sensitive model that captures the interplay between digital tax infrastructure, taxpayer behavior, and institutional capacity. The framework is particularly relevant for developing countries, including Indonesia and other ASEAN economies,

where varying digital readiness and institutional constraints require tailored policy strategies. By combining systematic literature review findings with conceptual synthesis, the study contributes both theoretically to tax administration literature and practically to policy design for effective and sustainable digital tax reforms.

Literature Review 2.1 Central Tax Administration: Concepts and Evolution

Central tax administration refers to the institutional mechanisms responsible for collecting national-level revenues and enforcing tax laws, including value-added tax (VAT), corporate income tax, and personal income tax. Historically, tax administration systems relied heavily on manual reporting, paper-based documentation, and ex-post audits. These traditional approaches were often costly, time-consuming, and vulnerable to information asymmetry between taxpayers and tax authorities, resulting in limited enforcement capacity and higher levels of non-compliance. In the pre-digital era, tax authorities primarily depended on physical inspections and selective audits to detect non-compliance. This reactive model constrained the ability of tax administrations to monitor taxpayer behavior comprehensively, particularly in economies with large numbers of small businesses and informal economic activities. As economic transactions grew more complex and cross-border in nature, traditional tax administration models became increasingly inadequate. The evolution toward digital tax administration reflects broader public sector reforms emphasizing efficiency, transparency, and accountability. Governments began adopting electronic filing systems, centralized taxpayer databases, and automated payment platforms to modernize revenue collection. These reforms aimed to reduce administrative burdens, improve data accuracy, and enhance the timeliness of tax reporting and enforcement.

Countries with advanced digital tax systems report improved revenue performance and reduced compliance costs. Empirical studies show that digital administration strengthens institutional capacity by enabling data-driven decision-making and reducing discretionary power among tax officials. For developing countries, including Indonesia and other ASEAN economies, this evolution represents a strategic pathway to strengthen fiscal capacity while addressing longstanding structural weaknesses in tax administration.

2.2 Digital Transformation in Tax Systems

Digital transformation in taxation involves the application of information and communication technologies to automate tax processes, integrate data sources, and enhance enforcement mechanisms. This transformation encompasses e-registration, e-filing, e-payment, electronic invoicing, and real-time transaction reporting. Such technologies allow tax authorities to capture transactional data more accurately and consistently across economic sectors.

Recent global developments include the mandatory adoption of e-invoicing, AI-based risk profiling, blockchain applications for transaction traceability, and cloud-based tax platforms. These innovations enable tax authorities to manage large volumes of data efficiently and reduce opportunities for tax evasion and fraud. In particular, AI-driven analytics support risk-based audits by identifying abnormal patterns and high-risk taxpayers.

The literature indicates that digital tools allow tax authorities to shift from reactive audits to proactive compliance monitoring. Rather than relying solely on post-reporting inspections, tax administrations can now conduct continuous oversight through real-time data access. This shift significantly enhances the probability of detection and alters taxpayer behavior by increasing perceived audit risks.

For developing economies, digital transformation also offers cost-effective solutions to modernize legacy systems. Cloud computing and mobile-based tax applications reduce infrastructure costs and expand access for taxpayers with limited technological resources.
However, the literature also notes challenges such as data security, interoperability, and uneven digital readiness across regions, particularly within ASEAN countries.

2.3 Tax Compliance Behavior

Tax compliance behavior refers to the extent to which taxpayers fulfill their tax obligations in accordance with legal requirements. Traditional economic models emphasize enforcement intensity, audit probability, and penalty severity as primary determinants of compliance. However, these deterrence-based approaches alone have proven insufficient to explain variations in taxpayer behavior across different contexts.

Behavioral theories suggest that compliance is also shaped by psychological and social factors, including trust in government, perceived fairness of the tax system, moral norms, and social influence. When taxpayers perceive tax authorities as legitimate and procedures as fair, they are more likely to comply voluntarily, even in the absence of strict enforcement.
Digital tax systems influence these behavioral factors by reducing uncertainty, increasing transparency, and improving service quality. Features such as pre-filled tax returns, real-time error notifications, and online assistance tools simplify compliance processes and lower cognitive and administrative burdens. These improvements are particularly important for small and medium enterprises (SMEs), which often lack professional tax expertise.

Empirical studies show that user-friendly digital platforms enhance voluntary compliance by improving taxpayer experience and trust. At the same time, automated monitoring systems increase perceived detection probability, reinforcing deterrence effects. This dual mechanism service enhancement and enforcement visibility positions digital tax systems as a key instrument for shaping modern compliance behavior.

2.4 Research Gap

While digital tax systems and tax compliance behavior have been widely studied, existing research tends to treat these domains separately. Technological studies often focus on system efficiency, data analytics, and enforcement capacity, whereas behavioral studies emphasize psychological and social determinants of compliance. As a result, there is limited integration of technological and behavioral perspectives within a single analytical framework.

Moreover, much of the existing literature concentrates on short-term implementation outcomes, such as initial revenue gains or system adoption rates. Long-term compliance dynamics, including sustained behavioral change, institutional learning, and adaptation to digital enforcement, remain underexplored. This limitation is particularly evident in studies of developing countries, where institutional constraints may influence reform outcomes differently than in advanced economies.

Another gap relates to contextual diversity. Evidence from Indonesia and ASEAN countries is still underrepresented in global tax literature, despite these regions facing unique challenges such as large informal sectors, rapid digitalization, and varying levels of administrative capacity. Consequently, policy recommendations derived from advanced economies may not be fully applicable to developing contexts.

This study addresses these gaps by synthesizing recent international literature and proposing an integrative conceptual model that links digital transformation, behavioral compliance, and institutional capacity. By adopting a holistic perspective, this research contributes to a deeper understanding of how digital tax reforms influence compliance dynamics, particularly in developing and emerging economies.

Research Methodology

This study adopts a Systematic Literature Review (SLR) approach following the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines. The SLR method is widely used in international conference proceedings to ensure a transparent, structured, and reproducible review of existing studies. This approach is appropriate for synthesizing recent research on digital transformation in central tax administration and its implications for taxpayer compliance.

3.1 Data Sources and Search Strategy

Relevant literature was collected from three major academic databases: Scopus, Web of Science, and Google Scholar. These databases were selected due to their extensive coverage of peer-reviewed international journals and conference proceedings. The search was conducted using combinations of keywords such as *central tax administration*, *digital taxation*, *tax compliance behavior*, *e-invoicing*, and *AI-based tax audit*. The search period was limited to publications from 2020 to 2025 to capture recent developments in digital tax reforms.

3.2 Inclusion and Selection Criteria

The inclusion criteria consisted of peer-reviewed journal articles and conference papers focusing on national or central tax systems, digital tax technologies, and taxpayer compliance. Studies not written in English, publications prior to 2020, and articles lacking methodological clarity were excluded. Following the PRISMA screening process identification, screening, and eligibility assessment a total of 52 articles were selected for final review.

3.3 Data Analysis

The selected articles were analyzed using thematic analysis. Key themes were identified and grouped into four main categories: (1) digital infrastructure and tax technology, (2) tax compliance behavior, (3) enforcement and audit mechanisms, and (4) institutional capacity. A narrative synthesis was then employed to integrate findings across studies and identify recurring patterns, research gaps, and emerging trends.

3.4 Development of Conceptual Framework

Based on the thematic synthesis, this study develops an integrative conceptual framework linking digital transformation and taxpayer compliance. The framework emphasizes the interaction between technological capability, behavioral compliance drivers, and institutional governance. This conceptualization represents the main novelty of the study and provides a foundation for future empirical research.

Results

The systematic literature review identified four dominant themes in the digital transformation of central tax administration.

Digital Infrastructure and Technology Adoption: E-filing, e-invoicing, AI-based risk assessment, and cloud platforms were found to improve administrative efficiency and reduce processing errors. Advanced systems enable tax authorities to monitor compliance in real time, transitioning from reactive audits to proactive oversight.

Taxpayer Compliance Behavior: Behavioral factors such as trust in authorities, perceived fairness of the system, and ease of compliance strongly influence voluntary compliance. Digital platforms enhance service quality, reduce uncertainty, and foster positive perceptions, particularly among SMEs in developing countries.

Enforcement Mechanisms and Institutional Capacity: AI-driven audits and automated risk profiling improve audit targeting and detection probability, reducing opportunities for tax evasion while maintaining fairness. Effective digital reforms also require strong institutional readiness, trained personnel, and data integration across agencies. ASEAN countries, including Indonesia, display varying capacities, indicating that context-specific implementation strategies are essential.

Discussion

The findings suggest that the effectiveness of digital tax systems depends on the alignment of technological, behavioral, and institutional dimensions. Technological adoption alone is insufficient; taxpayer compliance behavior and institutional capacity must also be addressed to maximize the benefits of digital reforms.

Behavioral insights highlight that digital platforms not only simplify compliance but also foster trust and transparency, which are critical for voluntary compliance, especially in developing economies. Similarly, robust institutional support ensures that digital tools are properly implemented, maintained, and integrated across governmental units.

In summary, the integration of technology, behavior, and governance provides a holistic perspective on central tax administration. This reinforces the need for comprehensive strategies that combine digital tools with capacity building and taxpayer engagement to achieve sustainable improvements in compliance and revenue collection.

Digital transformation has reshaped central tax administration by enhancing efficiency, transparency, and service quality. Beyond technical improvements, digital systems influence taxpayer behavior by increasing trust, reducing compliance uncertainty, and fostering voluntary compliance. The findings from this review indicate that digital tax reforms are most effective when technological capability, taxpayer compliance behavior, and institutional readiness are aligned.

Conclusion

Digital transformation has reshaped central tax administration by enhancing efficiency, transparency, and service quality. Beyond technical improvements, digital systems influence taxpayer behavior by increasing trust, reducing compliance uncertainty, and fostering voluntary compliance. The findings from this review indicate that digital tax reforms are most effective when technological capability, taxpayer compliance behavior, and institutional readiness are aligned.

Policy Implications:

Governments in developing countries should invest in integrated digital platforms while ensuring accessibility and user-friendly services for all taxpayers.

Capacity building is critical: tax authorities need trained personnel and inter-agency data integration to implement digital reforms effectively.

Behavioral and social factors such as perceived fairness, trust, and procedural simplicity must be incorporated into digital tax system design to enhance voluntary compliance.

ASEAN countries, including Indonesia, should tailor reforms to local institutional and technological conditions, acknowledging diverse administrative capacities and levels of digital literacy.

Overall, this study provides a conceptual framework and evidence-based guidance for both researchers and policymakers. It offers a foundation for future empirical studies and supports policy decisions that promote sustainable, efficient, and citizen-friendly digital tax administration.

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