# Digital Transformation in Tax Administration and Revenue Performance: Comparative Evidence from ASEAN Using ISORA Data

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**Abstract**

**Purpose**: This study examines the level of digital transformation in tax administration across ASEAN countries and evaluates its relationship with taxpayer compliance and revenue performance.

**Design/methodology/approach**: The study employs a descriptive-comparative approach using panel data from the International Survey on Revenue Administration (ISORA) version 4.0. The analysis covers eight ASEAN countries and compares indicators of e-payment adoption, ICT expenditure, on-time filing rates, audit activities, and tax-to-GDP ratios across two observation periods.

**Findings**: The results reveal substantial disparities in tax administration digitalisation across ASEAN. Indonesia and Singapore lead in e-payment adoption, while Singapore and Thailand demonstrate superior filing compliance. The findings also indicate a positive association between sustained ICT investment and administrative performance, although Indonesia presents an exception with declining ICT expenditure accompanied by stable compliance indicators. Furthermore, countries with stronger digital ecosystems tend to achieve better revenue performance and institutional efficiency.

**Practical implications**: The findings suggest that digital transformation should be accompanied by sustained ICT investment, risk-based enforcement strategies, and integrated digital ecosystems to improve taxpayer compliance and broaden the tax base.

**Originality/value**: This study contributes to the limited comparative literature on digital tax administration in ASEAN by providing empirical evidence based on ISORA data and offering policy lessons for strengthening digital taxation strategies in emerging economies.

**Paper type**: Empirical paper.

**Keywords**: Digital tax administration; ASEAN; ISORA; tax compliance; revenue performance

## 1. Introduction

The rapid expansion of the digital economy has fundamentally transformed business activities across ASEAN countries. Digital platforms, cross-border electronic commerce, and online services have created new forms of economic transactions that frequently transcend conventional tax jurisdictions. This transformation has generated significant challenges for tax authorities in identifying, measuring, and effectively taxing digital business activities that often operate without a physical presence in the source jurisdiction (Etinosa Igbinenikaro & Adewusi, 2024). The absence of physical nexus and the anonymity of online transactions complicate the ability of tax administrations to trace income streams and enforce tax compliance, thereby increasing the risk of base erosion and revenue losses (Malik & Saputra, 2023; Wijaya et al., 2025).

In response to these challenges, international organisations such as the Organisation for Economic Co-operation and Development (OECD), the International Monetary Fund (IMF), and the Asian Development Bank (ADB) have consistently encouraged countries to modernise their tax administrations through digital transformation initiatives. These initiatives include the implementation of electronic filing systems, electronic payment platforms, integrated taxpayer databases, and data analytics technologies to improve compliance management and revenue mobilisation. Previous studies have shown that digital transformation can reduce compliance costs, improve administrative efficiency, and strengthen voluntary tax compliance when supported by adequate institutional capacity and technological infrastructure (Junquera-Varela et al., 2022; Okunogbe & Santoro, 2023).

The pace and extent of digital tax administration reforms, however, vary considerably across ASEAN countries. Singapore and Malaysia have established highly integrated digital tax ecosystems characterised by advanced information technology infrastructure and strong taxpayer service systems. Conversely, several developing economies in the region continue to face challenges related to digital infrastructure, cybersecurity, and administrative capacity (Shakil & Tasnia, 2022; Adelakun et al., 2024). These disparities suggest that digital transformation in tax administration is not merely a technological issue but also an institutional and governance challenge.

Indonesia, as the largest economy in Southeast Asia, has undertaken substantial reforms to modernise its tax administration. The government has introduced several initiatives, including the implementation of Value Added Tax on Electronic Commerce (VAT on PMSE), the expansion of electronic filing and billing systems, and the ongoing development of the Coretax Administration System. These reforms aim to improve taxpayer compliance, broaden the tax base, and enhance the efficiency of tax administration (Rossy Ananda, 2025a). Despite these initiatives, Indonesia's tax ratio remains relatively low compared with several ASEAN peers, raising questions regarding the effectiveness of digital transformation in translating administrative improvements into better compliance and revenue performance (Hidayat & Defitri, 2024a; Risti & Putra, 2022).

The increasing importance of digital taxation also necessitates greater regional coordination. Differences in digital tax regulations and tax rates among ASEAN countries create risks of tax arbitrage, double taxation, and profit shifting by multinational digital enterprises. The implementation of the OECD's global tax initiatives under Pillar One and Pillar Two is expected to significantly influence the design of digital tax policies across the region, particularly for countries seeking to preserve their tax bases while maintaining investment competitiveness (Chongvilaivan & Chooi, 2021; Oguttu, 2022). Consequently, understanding the relative position of each country in terms of digital tax administration capacity has become increasingly important for designing effective and coordinated tax policies.

To address these issues, this study utilises the International Survey on Revenue Administration (ISORA) version 4.0, the most comprehensive global database on tax administration jointly managed by the IMF, OECD, ADB, CIAT, and IOTA. The ISORA database covers more than 180 jurisdictions and provides standardised indicators on digitalisation, compliance management, audit activities, human resources, and revenue performance (IMF, 2025). The availability of harmonised cross-country data offers a valuable opportunity to compare the performance of tax administrations across ASEAN countries using consistent indicators and definitions.

Despite the growing literature on digital taxation and tax administration reform, empirical comparative studies examining digital tax administration across ASEAN remain limited. Existing studies generally focus on individual countries, specific digital tax instruments, or conceptual discussions of tax digitalisation, with little attention given to cross-country administrative performance using harmonised international datasets (Chongvilaivan & Chooi, 2021; Okunogbe & Santoro, 2023). This study addresses this gap by employing the latest ISORA v4.0 dataset to provide a comparative assessment of digital tax administration, taxpayer compliance, and revenue performance across eight ASEAN countries. Furthermore, this study offers policy insights for Indonesia by positioning its digital tax administration performance relative to regional peers, thereby contributing empirical evidence to the emerging literature on digital taxation in developing economies. To the best of the authors' knowledge, this study is among the first to utilise ISORA v4.0 data to examine the nexus between digital tax administration, taxpayer compliance, and revenue performance in the ASEAN context.

Accordingly, this study has three objectives. First, it maps the level of digital tax administration across eight ASEAN countries by comparing indicators of e-payment adoption and ICT investment. Second, it examines differences in taxpayer compliance and revenue performance among ASEAN tax administrations. Third, it identifies policy implications and strategic lessons for Indonesia's ongoing digital tax reform, particularly in relation to the implementation of the Coretax Administration System and the taxation of the digital economy.

## 2. Literature Review and Hypotheses Development

### Digital Transformation in Tax Administration

Digital transformation in tax administration refers to the integration of information and communication technologies (ICT) into core tax administration functions, including taxpayer registration, filing, payment, audit, and compliance management (Adelakun et al., 2024). Contemporary literature distinguishes between simple digitalisation, which merely converts manual procedures into electronic processes, and digital transformation, which fundamentally redesigns administrative processes through data integration and advanced analytics (Tambun et al., 2020).

The emergence of digital technologies has significantly altered the relationship between taxpayers and tax authorities. Electronic filing systems, digital payment platforms, and integrated databases have enabled tax administrations to improve efficiency, reduce compliance costs, and strengthen voluntary compliance. Junquera-Varela et al. (2022) argue that the success of digital transformation depends not only on technology adoption but also on sustained investment in digital infrastructure, organisational readiness, and institutional reforms. Similarly, Okunogbe and Santoro (2023) find that information technology can substantially improve tax mobilisation, although its effectiveness varies according to institutional contexts and implementation capacity.

In developing countries, digital transformation is increasingly viewed as a strategic instrument for broadening the tax base and improving administrative efficiency. Nevertheless, challenges related to cybersecurity, digital literacy, and unequal access to technology remain significant obstacles to achieving inclusive and sustainable digital tax administration (Akram et al., 2019; Barri & Hidayat, 2025).

### Digital Tax Administration and Taxpayer Compliance

Taxpayer compliance represents one of the primary objectives of digital tax administration reform. Previous studies consistently demonstrate that electronic services simplify tax procedures, reduce compliance costs, and improve taxpayers' willingness to comply voluntarily (Darmayasa et al., 2020). According to the Technology Acceptance Model, the perceived usefulness and ease of use of digital systems significantly influence taxpayers' behavioural intentions and compliance decisions (Tambun et al., 2020)

However, the relationship between digitalisation and compliance is not always straightforward. Hidayat and Defitri (2024) argue that digital systems alone cannot guarantee higher compliance if taxpayers lack trust in public institutions or perceive the tax system as unfair. Moreover, tax administrations with advanced digital systems may still experience low compliance levels if enforcement mechanisms and risk management frameworks remain weak (Prianto Budi Saptono & Khozen, 2021). Consequently, digital transformation should be viewed as part of a broader institutional reform agenda rather than a purely technological intervention.

**Digitalisation and Revenue Performance**

The ultimate goal of tax administration reform is to improve revenue performance and strengthen fiscal capacity. A growing body of literature suggests that digital technologies can increase revenue collection by reducing tax evasion, improving risk detection, and expanding the taxable population (Basri et al., 2021; Adan, 2023). Digitalisation also facilitates the integration of taxpayer information from multiple sources, enabling more effective compliance monitoring and audit selection.

Nevertheless, empirical evidence indicates that higher levels of digitalisation do not automatically lead to higher tax revenue. Countries with relatively modest administrative resources may achieve better revenue performance if supported by strong institutional quality and efficient tax administration practices (Febiri et al., 2024). Conversely, countries with extensive administrative infrastructures may continue to experience low tax ratios due to structural weaknesses and persistent tax gaps (Gunadi, 2022). Therefore, revenue performance is likely to depend on the interaction between technological capabilities, institutional arrangements, and policy implementation.

**Taxation of the Digital Economy in ASEAN**

The digital economy has introduced new challenges to international taxation, particularly concerning nexus, profit allocation, and cross-border transactions. ASEAN countries have adopted diverse approaches to taxing digital businesses. Singapore imposes Goods and Services Tax (GST) on imported digital services, Malaysia has introduced a Digital Service Tax (DST), while Indonesia has implemented Value Added Tax on Electronic Commerce (VAT on PMSE) and continues to develop its digital tax ecosystem through the Coretax Administration System (Chongvilaivan & Chooi, 2021; Rossy Ananda, 2025a).

This diversity of policy approaches creates risks of double taxation, regulatory arbitrage, and tax competition among ASEAN countries. The OECD's Pillar One and Pillar Two initiatives have intensified discussions on the need for greater international coordination and policy harmonisation (Oguttu, 2022). In this context, understanding the comparative performance of tax administrations in ASEAN is essential for designing effective and sustainable digital taxation policies.

**Hypotheses Development**

The literature suggests that digital transformation can improve tax administration performance through enhanced efficiency, better compliance management, and stronger revenue mobilisation. Countries with higher levels of digitalisation and sustained ICT investment tend to exhibit better administrative outcomes and stronger taxpayer compliance (Junquera-Varela et al., 2022; Okunogbe & Santoro, 2023). However, the effectiveness of digital transformation depends on institutional quality and the ability of tax administrations to integrate technological innovation into broader reform strategies.

Given the descriptive-comparative nature of this study and the absence of inferential statistical testing, this research does not formulate formal hypotheses. Instead, the literature review is employed to establish the conceptual foundations and analytical framework for comparing the digital tax administration performance of ASEAN countries.

## 3. Research Method

**Research Design**

This study employs a descriptive-comparative research design to examine the level of digital tax administration and its relationship with taxpayer compliance and revenue performance across ASEAN countries. A descriptive-comparative approach is appropriate because the study aims to map, compare, and interpret differences in tax administration indicators rather than to test causal relationships among variables. The research adopts a cross-country perspective to identify patterns, similarities, and disparities in digital tax administration performance within the ASEAN region.

**Data and Sample**

The study relies exclusively on secondary data obtained from the International Survey on Revenue Administration (ISORA) version 4.0 published by the International Monetary Fund (IMF, 2025). ISORA is a globally recognised database jointly administered by the IMF, OECD, Asian Development Bank (ADB), Inter-American Center of Tax Administrations (CIAT), and the Intra-European Organisation of Tax Administrations (IOTA). The database provides harmonised and internationally comparable information on tax administration performance, digitalisation, compliance management, human resources, and revenue mobilisation. The sample consists of eight ASEAN countries that provide sufficiently complete data for the selected indicators, namely Indonesia, Singapore, Malaysia, Thailand, the Philippines, Vietnam, Cambodia, and Lao PDR. Brunei Darussalam and Myanmar are excluded from the analysis due to limited data availability and incomplete reporting in several ISORA indicators.

**Variables and Indicators**

This study focuses on three dimensions of tax administration performance: digitalisation, taxpayer compliance, and revenue performance. Digitalisation is represented by indicators of electronic payment adoption and information and communication technology (ICT) expenditure. Taxpayer compliance is measured through on-time filing rates and audit coverage. Revenue performance is represented by tax-to-GDP ratios and administrative capacity indicators, including the number of tax administration personnel. The selection of these indicators is based on previous studies that identify digital infrastructure, compliance management, and institutional capacity as important determinants of tax administration effectiveness (Junquera-Varela et al., 2022; Okunogbe & Santoro, 2023).

To facilitate systematic comparison across ASEAN countries, this study organises the selected indicators into three analytical dimensions: digitalisation, taxpayer compliance, and revenue performance. The operational definitions of the variables and indicators used in the study are presented in Table 1.

**Table 1. Research Variables and Indicators**

| Dimension | Variable | Indicator | Data Source |
|---|---|---|---|
| Digitalisation | Electronic Payment | Percentage of tax payments made electronically | ISORA v4.0 |
| Digitalisation | ICT Investment | ICT expenditure as percentage of operating expenditure | ISORA v4.0 |
| Compliance | Filing Compliance | On-time filing rate | ISORA v4.0 |
| Compliance | Audit Activity | Percentage of taxpayers audited | ISORA v4.0 |
| Revenue Performance | Revenue Mobilisation | Tax-to-GDP ratio | ISORA v4.0 |
| Institutional Capacity | Human Resources | Number of tax administration staff | ISORA v4.0 |

Source: authors' elaboration based on IMF (2025).

The selected indicators represent the core functions of modern tax administration and provide a comprehensive framework for assessing the readiness and effectiveness of digital tax administration in ASEAN. The use of harmonised indicators from ISORA enables meaningful cross-country comparisons and strengthens the reliability of the study's findings.

**Data Analysis Technique**

The study applies descriptive and comparative analytical techniques. First, descriptive statistics are used to summarise the characteristics of digital tax administration across ASEAN countries. Second, cross-country comparisons are conducted to identify differences in digitalisation, compliance performance, and revenue outcomes. Third, comparative interpretation is employed to identify policy implications and derive lessons for Indonesia's ongoing digital tax reforms.

The analysis does not employ inferential statistical tests or econometric modelling because the objective of the study is exploratory and comparative rather than explanatory. Instead, the study emphasises pattern identification and policy interpretation based on internationally comparable indicators obtained from the ISORA database.

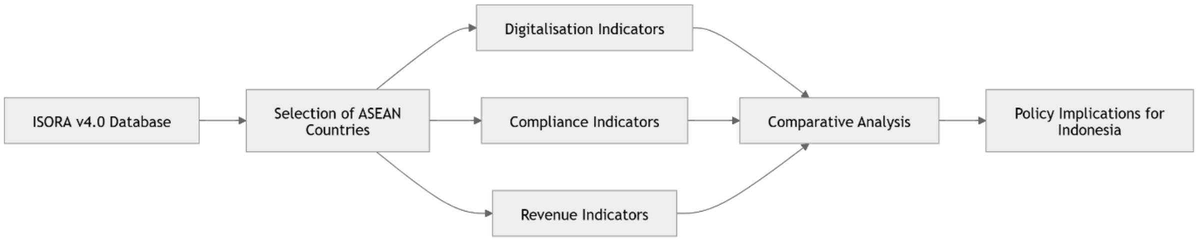


**Figure 1. Research Framework and Analytical Procedure**
Source: authors' elaboration based on IMF (2025).

## 4. Result and Discussion

### Digitalisation of Tax Administration in ASEAN

Digital transformation has become one of the most important priorities in tax administration reform worldwide. In response to the expansion of the digital economy and the increasing complexity of tax administration, ASEAN countries have accelerated the adoption of digital technologies to improve efficiency, enhance taxpayer services, and strengthen revenue mobilisation. The implementation of electronic filing systems, digital payment platforms, and integrated information systems is expected to reduce administrative costs and improve the quality of tax administration (Junquera-Varela et al., 2022; OECD, 2024).

To assess the level of digitalisation in ASEAN tax administrations, this study focuses on two key indicators derived from the ISORA v4.0 database: the proportion of tax payments made electronically and the level of information and communication technology (ICT) expenditure. These indicators reflect both the extent of digital service adoption and the commitment of tax administrations to investing in digital infrastructure.

**Table 2. Digitalisation Indicators of ASEAN Tax Administrations**

| Negara | E-Payment (%) | ICT Cost (% OpEx) | Tax-to-GDP (%) |
|---|---|---|---|
| Indonesia | 100.0 → 100.0 | 1.66 → 0.45 | 8.85 → 8.42 |
| Malaysia | 43.7 → 55.95 | 6.99 → 6.52 | 8.98 → 8.97 |
| Thailand | 56.99 → 61.21 | 5.33 → 5.14 | 11.70 → 11.89 |
| Singapore | 83.5 → 86.1 | 26.72 → 26.36 | 9.90 → 10.26 |
| Vietnam | 47.0 → 55.0 | 4.72 → 6.28 | 22.17 → 22.00 |
| Philippines | 14.68 → 17.15 | 2.22 → 2.64 | N/A |
| Myanmar | 0.24 → 5.02 | 0.73 → 1.18 | 6.18 → 8.88 |
| Cambodia | N/A | 2.06 → 9.14 | 7.87 → 9.12 |

Source: authors' elaboration based on IMF (2025).

Table 2 reveals substantial differences in the degree of digitalisation across ASEAN tax administrations. Indonesia records the highest proportion of electronic tax payments among the selected countries, indicating remarkable progress in promoting digital taxpayer services and encouraging the use of electronic payment channels. This achievement reflects the government's continuous efforts to expand digital tax services, including electronic billing systems, online payment facilities, and the ongoing implementation of the Coretax Administration System.Singapore and Malaysia also demonstrate relatively advanced levels of digitalisation. Their strong performance is supported by s

ustained investments in information technology and highly integrated digital ecosystems that facilitate interactions between taxpayers and tax authorities. The experience of these countries suggests that successful digital transformation requires long-term investment strategies and institutional readiness rather than merely adopting digital technologies.

Conversely, several lower-middle-income economies in ASEAN continue to experience limitations in digital infrastructure and technological capacity. Lower levels of electronic payment adoption may reflect inadequate digital connectivity, insufficient investment in information systems, and challenges in promoting digital literacy among taxpayers. These findings indicate that significant digital disparities remain within ASEAN despite the region's increasing commitment to tax administration reform.

An interesting finding emerges from Indonesia's relatively low ICT expenditure compared with several neighbouring countries despite its exceptionally high level of electronic payment adoption. This situation may indicate that previous investments in digital infrastructure have generated efficiency gains and enabled broader utilisation of electronic services with relatively lower operational expenditures. Another possible explanation is that Indonesia's digital transformation has increasingly relied on system integration and process reengineering rather than solely on additional technology spending.

Nevertheless, maintaining the momentum of digital transformation requires continuous investment in digital infrastructure and institutional capacity. The implementation of the Coretax Administration System, which aims to integrate taxpayer data and modernise administrative processes, demands substantial technological resources and organisational readiness. Without sustained investment, the benefits generated by digitalisation may not be fully translated into improvements in compliance and revenue performance.

These findings are broadly consistent with previous studies that emphasise the importance of digital transformation in improving tax administration performance. Junquera-Varela et al. (2022) argue that digital transformation is most effective when accompanied by organisational reforms and long-term investment strategies. Similarly, Okunogbe and Santoro (2023) find that information technology can significantly improve tax mobilisation, although the magnitude of its impact depends on institutional quality and implementation capacity.

Overall, the comparative evidence suggests that ASEAN countries are progressing toward more digitalised tax administrations, but considerable disparities remain in terms of technological investment and digital readiness. Indonesia has demonstrated significant achievements in expanding electronic tax services; however, ensuring the sustainability of digital transformation will require continued investment, stronger institutional capacity, and deeper integration of digital technologies into core tax administration functions.

**Taxpayer Compliance and Enforcement Effectiveness**

Taxpayer compliance represents one of the primary objectives of tax administration reform. The adoption of digital technologies is expected to simplify tax procedures, reduce compliance costs, and improve interactions between taxpayers and tax authorities. At the same time, digitalisation provides tax administrations with better access to taxpayer information, enabling more effective compliance risk management and enforcement activities. Consequently, examining filing compliance and audit activities provides important insights into whether digital transformation has translated into improved administrative performance.

To evaluate taxpayer compliance and enforcement effectiveness, this study uses two indicators derived from the ISORA v4.0 database: the on-time filing rate and the proportion of taxpayers subjected to audit activities. The on-time filing rate reflects taxpayers' willingness and ability to comply with filing obligations, while audit coverage indicates the extent of enforcement efforts undertaken by tax administrations to ensure compliance.

**Table 3. Taxpayer Compliance and Enforcement Indicators in ASEAN**

| **Negara** | **On-time Filing CIT (%)** | **Audit Selesai** | **Cost of Collection (%)** |
|---|---|---|---|
| Indonesia | 52.99 → 53.21 | 160.247 → 158.042 | 0.47 → 0.49 |
| Malaysia | 76.97 → 67.93 | 540.649 → 764.496 | 1.74 → 1.74 |
| Thailand | 91.60 → 92.63 | 27.794 → 30.894 | 0.48 → 0.48 |
| Singapore | 96.53 → 96.99 | N/A | 0.84 → 0.80 |
| Vietnam | 70.71 → 72.51 | 96.462 → 100.227 | 0.65 → 0.61 |
| Philippines | 100.43 → 89.50 | 0 | N/A |
| Myanmar | N/A → 93.99 | 59 → 76 | 0.34 → 0.27 |
| Cambodia | N/A | 906 → 1.970 | 2.44 → 1.82 |

Source: authors' elaboration based on IMF (2025).

Table 3 demonstrates considerable variation in taxpayer compliance and enforcement performance across ASEAN countries. Singapore and Thailand record relatively high on-time filing rates, indicating effective taxpayer service systems and strong administrative capabilities. Their performance suggests that digitalisation has been successfully integrated with broader compliance management strategies, enabling taxpayers to fulfil their obligations more efficiently.

By contrast, Indonesia's filing compliance rate remains below several regional peers despite its impressive achievements in electronic payment adoption. This finding suggests that the availability of digital services alone does not automatically lead to higher levels of taxpayer compliance. While taxpayers may increasingly adopt digital payment systems, compliance behaviour is also influenced by factors such as tax morale, institutional trust, regulatory complexity, and the perceived fairness of the tax system.

The evidence further indicates substantial differences in audit activities among ASEAN countries. Some tax administrations maintain relatively high audit coverage as part of their enforcement strategies, whereas others rely more heavily on voluntary compliance mechanisms and risk-based approaches. Differences in audit intensity may also reflect variations in administrative resources, technological capabilities, and compliance risk management frameworks.

The Indonesian case illustrates the complexity of the relationship between digitalisation and compliance performance. Despite the extensive adoption of digital tax services, compliance outcomes remain relatively moderate. This condition suggests that digital transformation should be complemented by more sophisticated compliance strategies, including data analytics, integrated taxpayer information systems, and risk-based enforcement mechanisms. The ongoing implementation of the Coretax Administration System may provide opportunities to improve compliance management by enabling more effective identification of non-compliant taxpayers and enhancing the quality of taxpayer services.

These findings are consistent with previous studies emphasising that digital technologies alone cannot guarantee higher taxpayer compliance. Hidayat and Defitri (2024) argue that the effectiveness of digital tax administration depends significantly on institutional trust and taxpayers' perceptions of fairness. Similarly, Prianto Budi Saptono and Khozen (2021) find that effective compliance risk management requires the integration of technological innovation with behavioural and institutional approaches to tax administration reform.

Moreover, the experiences of Singapore and Thailand indicate that successful digital transformation involves more than the adoption of electronic services. High-performing tax administrations typically combine digital technologies with effective taxpayer education, risk-based compliance management, and integrated data systems. These institutional arrangements enable tax authorities to balance service-oriented approaches with appropriate enforcement mechanisms.

Overall, the comparative evidence suggests that ASEAN countries exhibit substantial differences in taxpayer compliance and enforcement effectiveness. Although digitalisation has improved administrative capabilities across the region, its impact on compliance outcomes depends on the ability of tax administrations to integrate technological innovation with broader institutional reforms and effective compliance management strategies. For Indonesia, strengthening taxpayer compliance requires not only continued digitalisation but also greater emphasis on risk-based administration, taxpayer engagement, and institutional capacity building.

**Human Resource Capacity and Revenue Performance**

The ultimate objective of tax administration reform is to strengthen revenue mobilisation and improve the overall effectiveness of fiscal administration. Although digital transformation has become a major driver of administrative modernisation, its success ultimately depends on the capacity of tax administrations to translate technological advancements into improved organisational performance and higher tax revenues. Therefore, examining human resource capacity and revenue performance provides important insights into the effectiveness of tax administration systems across ASEAN countries.

To assess these dimensions, this study employs two indicators derived from the ISORA v4.0 database: the number of tax administration personnel and the tax-to-GDP ratio. The number of personnel reflects the administrative capacity available to manage tax operations, whereas the tax-to-

GDP ratio serves as a widely accepted indicator of a country's ability to mobilise domestic revenue and finance public expenditure.

**Table 4. Human Resource Capacity and Revenue Performance in ASEAN**

| Negara | Total FTE | % Staf Audit | CIT Active Taxpayers |
|---|---|---|---|
| Indonesia | 45.341 → 46.517 | 15.50 → 16.88 | 1.888.973 → 1.859.585 |
| Malaysia | 12.889 → 13.211 | 29.72 → 29.02 | 804.049 → 838.245 |
| Thailand | 22.093 → 21.726 | 24.72 → 25.19 | 577.802 → 608.374 |
| Singapore | 1.911 → 1.898 | 20.25 → 20.55 | 325.256 → 344.658 |
| Vietnam | N/A | N/A | 797.242 → 862.337 |
| Philippines | 11.385 → 12.030 | N/A | 498.980 → 509.931 |
| Myanmar | 4.644 → 5.207 | 36.02 → 38.01 | 33.042 → 41.248 |
| Cambodia | 1.958 → 2.513 | 28.04 → 29.53 | 3.609 → 4.090 |

Source: authors' elaboration based on IMF (2025).

Table 4 reveals substantial differences in administrative capacity and revenue performance among ASEAN tax administrations. Indonesia possesses the largest tax administration workforce among the selected countries, reflecting the scale and complexity of managing tax administration in one of the world's most populous countries. However, despite its considerable administrative resources, Indonesia's tax-to-GDP ratio remains relatively modest compared with several ASEAN peers.

In contrast, Singapore and Thailand achieve comparatively stronger revenue performance despite operating with significantly smaller tax administration workforces. This finding suggests that larger organisational size does not necessarily lead to higher revenue mobilisation. Rather, institutional efficiency, technological integration, and the effectiveness of compliance management appear to play more important roles in determining tax administration performance.

The evidence also indicates that countries with more integrated digital ecosystems tend to demonstrate better revenue outcomes and stronger administrative effectiveness. Digital technologies enable tax administrations to improve data management, enhance compliance monitoring, and implement risk-based enforcement strategies more efficiently. Consequently, countries that successfully integrate technological innovation with institutional reforms are better positioned to achieve sustainable improvements in revenue performance.

The Indonesian case provides an important policy lesson. The country's relatively low tax-to-GDP ratio despite having the largest administrative workforce suggests that challenges remain in terms of organisational efficiency and the effective utilisation of available resources. This finding may also indicate the existence of significant tax gaps, limited compliance effectiveness, and the need for greater integration of taxpayer information systems. Therefore, the success of Indonesia's ongoing Coretax implementation should not be measured solely by the adoption of new technologies but also by its ability to improve institutional effectiveness and strengthen revenue mobilisation.

These findings are broadly consistent with previous studies arguing that revenue performance is influenced by the interaction between technological capabilities, institutional quality, and policy implementation. Basri et al. (2021) emphasise that digital transformation can improve tax administration performance when accompanied by effective organisational reforms and strong governance mechanisms. Similarly, Febiri et al. (2024) find that institutional efficiency and administrative quality often matter more than organisational size in determining tax revenue performance.

Another important implication of the findings is that human resource development remains a critical component of digital tax administration reform. The adoption of advanced technologies, data analytics, and integrated information systems requires tax administrations to continuously enhance the digital competencies of their personnel. Consequently, investments in technology should be accompanied by investments in human capital development, organisational learning, and institutional capacity building.

Overall, the comparative evidence demonstrates that the effectiveness of tax administration in ASEAN cannot be explained solely by the size of administrative resources. Revenue performance depends on the ability of tax administrations to combine technological innovation, institutional efficiency, and effective governance. For Indonesia, strengthening organisational effectiveness and improving the utilisation of digital technologies will be essential for transforming administrative modernisation into sustainable improvements in tax revenue performance.

**Indonesia's Relative Position in ASEAN Tax Administration Digitalisation**

To better understand Indonesia's strategic position within ASEAN, it is important to synthesise the key indicators of digital tax administration and revenue performance. Although the previous sections demonstrate considerable variation in digitalisation, compliance, and revenue mobilisation across ASEAN countries, a comparative assessment of Indonesia's relative position provides a clearer understanding of the country's strengths and persistent challenges.

The experiences of ASEAN countries suggest that successful digital transformation depends not only on the adoption of electronic services but also on sustained investment in digital infrastructure, institutional capacity, and effective compliance management (Junquera-Varela et al., 2022; Okunogbe & Santoro, 2023). Therefore, positioning Indonesia against regional peers offers valuable insights into the country's future reform priorities and the strategic direction of digital tax administration.

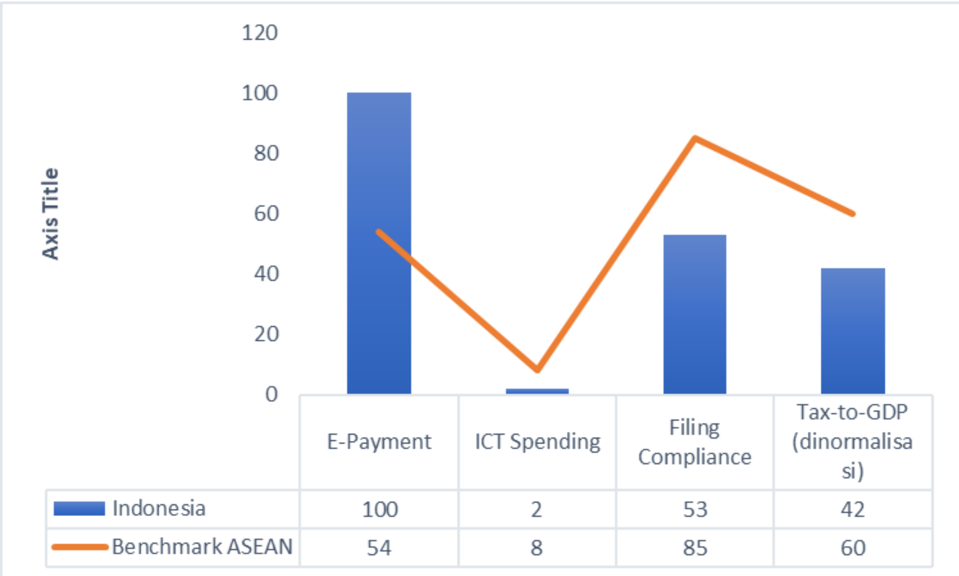


**Figure 2. Indonesia's Relative Position in ASEAN Tax Administration**

Source: authors' elaboration based on IMF (2025).

Figure 2 presents a synthesis of Indonesia's performance relative to selected ASEAN benchmarks using four key indicators: electronic payment adoption, ICT expenditure, filing compliance, and revenue performance. The evidence reveals a paradox within Indonesia's digital tax administration.

Indonesia records the highest level of electronic payment adoption among the selected ASEAN countries, indicating substantial progress in expanding digital taxpayer services and promoting the use of electronic channels for tax payments. This achievement reflects the government's long-term efforts to modernise tax administration through electronic billing systems, online payment platforms, and integrated digital services.

However, this strong performance in digital service adoption is not accompanied by comparable outcomes in other dimensions of tax administration performance. Indonesia's ICT expenditure remains relatively modest compared with several regional peers, suggesting that the sustainability of digital transformation may be constrained by limited investment in technological infrastructure and system development. Although previous digital investments may have generated significant efficiency gains, continuous investment remains necessary to support technological innovation and organisational adaptation.

The comparative evidence also indicates that Indonesia's filing compliance rate remains below that of several high-performing ASEAN countries, particularly Singapore and Thailand. This finding suggests that digitalisation alone is insufficient to improve taxpayer compliance. The effectiveness of digital transformation ultimately depends on the ability of tax administrations to integrate digital technologies with behavioural approaches, risk-based compliance management, and taxpayer engagement strategies.

Similarly, Indonesia's tax-to-GDP ratio remains relatively modest despite possessing the largest tax administration workforce among the selected countries. This finding reinforces the argument that administrative size alone does not guarantee stronger revenue performance. Instead, institutional efficiency, data integration, and effective governance appear to play more important roles in determining the effectiveness of tax administration.

The Indonesian experience therefore illustrates both the opportunities and limitations of digital transformation. On the one hand, the country has successfully expanded the adoption of digital tax services and established a strong foundation for future reforms. On the other hand, important challenges remain in translating digitalisation into higher levels of compliance and improved revenue mobilisation.

These findings are consistent with previous studies arguing that the effectiveness of digital tax administration depends not only on technological adoption but also on institutional quality and organisational readiness (Basri et al., 2021; Junquera-Varela et al., 2022). Countries that combine digital technologies with strong governance mechanisms and integrated compliance strategies generally achieve better administrative outcomes and stronger fiscal performance.

The comparative assessment demonstrates that Indonesia occupies an intermediate position in ASEAN's digital tax administration landscape. The country has emerged as one of the regional leaders in digital service adoption, yet significant opportunities remain to strengthen institutional effectiveness, improve taxpayer compliance, and enhance revenue performance. These findings provide important lessons for the future direction of Indonesia's digital tax reforms and highlight the need to move beyond technological adoption towards the development of a more integrated and sustainable digital tax ecosystem.

**Implications for Digital Taxation in Indonesia**

The comparative evidence presented in the previous sections provides several important lessons for Indonesia's ongoing digital tax reforms. Although Indonesia has achieved substantial progress in expanding electronic tax services and records one of the highest levels of electronic payment adoption in ASEAN, significant challenges remain in transforming digitalisation into stronger taxpayer compliance and improved revenue performance. Consequently, digital transformation should not be viewed merely as a technological initiative but as a comprehensive institutional reform process.

First, Indonesia needs to maintain sustained investment in digital infrastructure and information systems. The relatively low level of ICT expenditure observed in this study raises concerns regarding the long-term sustainability of digital transformation initiatives. The implementation of the Coretax Administration System requires substantial technological resources, reliable digital infrastructure, and continuous system maintenance. Therefore, future investments should focus not only on technological development but also on system integration, cybersecurity, and data governance to ensure the effectiveness and resilience of digital tax administration.

Second, the findings indicate that digitalisation alone is insufficient to improve taxpayer compliance. Despite significant progress in digital service adoption, Indonesia's filing compliance performance remains below that of several ASEAN peers. This finding suggests the need for more sophisticated compliance management strategies that integrate digital technologies with behavioural approaches and risk-based administration. Advanced data analytics, taxpayer segmentation, and automated risk assessment systems could improve the ability of tax authorities to identify non-compliant taxpayers and implement more targeted compliance interventions.

Third, strengthening institutional coordination and data integration should become a strategic priority in Indonesia's digital tax reforms. One of the major challenges in taxing the digital economy is the fragmented nature of taxpayer information across government institutions and digital platforms. Effective digital taxation requires seamless information exchange between tax authorities, financial institutions, customs administrations, and other relevant agencies. Greater inter-agency coordination would enhance the quality of taxpayer data, improve compliance monitoring, and reduce opportunities for tax avoidance and evasion.

Fourth, human resource development remains an essential component of successful digital transformation. The adoption of advanced technologies and integrated information systems requires tax administrations to develop new competencies in data analytics, information technology, digital auditing, and compliance risk management. Consequently, investments in technological infrastructure should be accompanied by continuous investments in organisational learning and human capital development. The experiences of high-performing ASEAN countries suggest that technological innovation can only generate sustainable improvements in tax administration when supported by capable and adaptable institutions.

The findings of this study also have important implications for the taxation of the digital economy. The rapid expansion of digital business activities has created new challenges regarding nexus, profit allocation, and cross-border transactions. As digital business models continue to evolve, Indonesia must ensure that its digital tax policies remain responsive to international developments, including the implementation of the OECD's Pillar One and Pillar Two initiatives. A modern and integrated digital tax administration system will be essential for effectively administering taxes on digital activities while maintaining investment competitiveness and legal certainty.

The experiences of Singapore and other high-performing ASEAN countries demonstrate that successful digital tax administration requires a comprehensive approach that combines technological innovation, institutional reform, and effective governance. Therefore, Indonesia's future digital tax strategy should move beyond the simple adoption of electronic systems and focus on developing an integrated digital tax ecosystem capable of supporting sustainable revenue mobilisation, improving taxpayer compliance, and enhancing the effectiveness of digital economy taxation.

The comparative evidence suggests that Indonesia has established a strong foundation for digital tax administration but still faces considerable challenges in converting digital transformation into stronger fiscal outcomes. The country's future reform agenda should therefore prioritise institutional effectiveness, technological sustainability, and integrated compliance management in order to maximise the benefits of digital transformation and strengthen long-term revenue performance.

## 5. Conclusion

This study examines the performance of digital tax administration across ASEAN countries using comparative evidence from the International Survey on Revenue Administration (ISORA) version 4.0. The analysis focuses on three dimensions of tax administration performance, namely digitalisation, taxpayer compliance, and revenue mobilisation, with particular attention given to the relative position of Indonesia within the ASEAN context.

The findings reveal substantial disparities in the level of digital tax administration among ASEAN countries. Indonesia records one of the highest levels of electronic payment adoption, indicating significant progress in expanding digital taxpayer services and promoting the use of electronic channels. However, this achievement is not accompanied by comparable performance in other dimensions of tax administration. Indonesia's ICT expenditure remains relatively modest, its filing compliance rate is below several regional peers, and its tax-to-GDP ratio remains comparatively low despite possessing the largest tax administration workforce among the selected countries.

The comparative evidence further demonstrates that digitalisation alone does not automatically improve taxpayer compliance and revenue performance. Countries with stronger digital ecosystems and better revenue outcomes generally combine technological innovation with institutional effectiveness, integrated compliance management, and sustained investment in information systems. These findings suggest that the success of digital transformation depends not only on the adoption of digital technologies but also on the ability of tax administrations to integrate technological innovation into broader organisational and governance reforms.

This study contributes to the emerging literature on digital taxation in three ways. First, it provides one of the first comparative assessments of digital tax administration across ASEAN countries using the latest ISORA v4.0 dataset. Second, it demonstrates the importance of examining digital transformation from a multidimensional perspective that incorporates digitalisation, compliance performance, and revenue mobilisation. Third, it offers empirical evidence and policy lessons for Indonesia's ongoing digital tax reforms and the implementation of the Coretax Administration System.

From a policy perspective, the findings suggest that Indonesia should prioritise sustained investment in digital infrastructure, strengthen data integration and inter-agency coordination, and adopt more sophisticated risk-based compliance strategies. Furthermore, investments in digital technologies should be accompanied by continuous efforts to improve organisational capacity and human resource competencies. Developing an integrated digital tax ecosystem will be essential for improving taxpayer compliance, strengthening revenue mobilisation, and effectively administering taxes in the rapidly expanding digital economy.

This study is subject to several limitations. First, the analysis relies exclusively on secondary data from ISORA and therefore cannot capture country-specific institutional and political factors that may influence tax administration performance. Second, the study adopts a descriptive-comparative approach and does not employ econometric techniques to investigate causal relationships among variables. Future research may extend this study by incorporating panel econometric analysis, additional indicators of digital taxation, and qualitative evidence from individual country experiences to provide a deeper understanding of the determinants of successful digital tax administration reforms.

The findings indicate that digital transformation has become an indispensable component of modern tax administration in ASEAN. Nevertheless, the effectiveness of digitalisation ultimately depends on institutional quality, organisational readiness, and the capacity of tax administrations to transform technological innovation into sustainable improvements in compliance and revenue performance. The Indonesian experience illustrates both the opportunities and challenges of digital transformation and provides valuable lessons for future tax policy development in ASEAN and other developing economies.

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