

American Journal of Economics and Business Management

Vol. 9 Issue 3| pp. 722-736| **ISSN:** 2576-5973
Available online @ https://www.globalresearchnetwork.us/index.php/ajebm

Article

Assessing Tax Administration Efficiency in Uzbekistan: A Multidimensional Performance Measurement Framework

Karimov Gayrat

1. Independent Researcher, Tashkent State University of Economics, Tashkent, Uzbekistan

Abstract: This study develops a multidimensional framework for assessing the efficiency of tax administration in Uzbekistan. The central argument is that revenue growth, although fiscally important, cannot by itself identify whether a tax administration is becoming more efficient. A modern evaluation system should simultaneously measure fiscal effectiveness, voluntary compliance, operational productivity, taxpayer service, digital maturity, and governance quality. The methodology synthesizes the Tax Administration Diagnostic Assessment Tool (TADAT), the International Survey on Revenue Administration (ISORA), OECD Tax Administration indicators, IMF research on revenue-administration reform, and official fiscal and digitalization evidence from Uzbekistan. State budget revenues increased from approximately UZS 164.8 trillion in 2021 to UZS 359.8 trillion in 2025, corresponding to a compound annual nominal growth rate of about 21.6 percent. At the same time, the Tax Committee has expanded electronic invoices, online cash registers, fiscal receipts, risk analysis, digital services and, in 2026, AI-supported taxpayer analytics. These developments provide a stronger information base but do not automatically prove efficiency gains. To convert administrative data into a decision tool, the article proposes a Tax Administration Efficiency Index (TAEI) with six weighted dimensions and a supporting KPI dashboard. The proposed framework combines outcome measures such as on-time filing, on-time payment and arrears with resource measures such as cost of collection and cases per full-time-equivalent employee, while also capturing service quality and digital integration. The study concludes that Uzbekistan should move from target-oriented revenue monitoring toward a transparent performance-management system in which fiscal results are interpreted jointly with compliance, cost, service and governance indicators.

Keywords: tax administration, efficiency, effectiveness, compliance, TADAT, ISORA, digitalization, cost of collection, performance indicators, Uzbekistan

Citation Gayrat, K. Assessing Tax Administration Efficiency in Uzbekistan: A Multidimensional Performance Measurement Framework. American Journal of Economics and Business Management 2026, 9(3), 722-736.

Received: 5th Jul 2026
Revised: 25th Jul 2026
Accepted: 10th Mar 2026
Published: 31st Mar 2026

Copyright: © 2026 by the authors. Submitted for open access publication under the terms and conditions of the Creative Commons Attribution (CC BY) license (https://creativecommons.org/licenses/by/4.0/)

1. Introduction

Tax administration is the institutional mechanism through which statutory tax rules are converted into actual public revenues. Its quality influences not only the amount and timing of revenue collection but also the predictability of the business environment, the cost of compliance, taxpayer trust, the scale of informality, and the credibility of fiscal policy. In modern public finance, therefore, the performance of a tax administration cannot be reduced to a single indicator such as the amount of tax collected. A revenue authority may collect more because nominal GDP, prices or statutory tax rates have increased, while its underlying operational productivity or

compliance outcomes remain unchanged. Conversely, an administration may improve voluntary compliance, reduce taxpayer burden, automate routine processes and close important information gaps even during a period in which tax receipts grow slowly because of macroeconomic or policy factors.[1]

This distinction between fiscal yield and administrative performance is especially important in countries undergoing rapid tax reform and digital transformation. OECD comparative work shows that tax administrations increasingly rely on electronic filing and payment, pre-filled information, application programming interfaces, data analytics and artificial intelligence, while the International Survey on Revenue Administration (ISORA) provides comparable indicators on resources, compliance, arrears, service channels and digital practices [2]. The TADAT framework complements these data by assessing nine performance outcome areas, including taxpayer registration, risk management, voluntary compliance, timely filing and payment, accurate reporting, dispute resolution, revenue management, accountability and transparency [3]. Together these frameworks imply that tax administration should be evaluated as a multidimensional production system: it transforms staff, technology, legal powers, data and organizational processes into compliance outcomes, taxpayer services and revenue.

The efficiency question is analytically different from the effectiveness question, although the two are closely connected. Effectiveness concerns whether the administration achieves its intended outcomes: a complete taxpayer register, correct declarations, timely payments, low arrears, appropriate enforcement, fair dispute resolution and reliable revenue accounting. Efficiency concerns the resources and processes used to achieve those outcomes: administrative expenditure, staff time, automation, case selection, processing speed and taxpayer compliance costs. An administration is not genuinely efficient if it reduces internal expenditure by shifting excessive cost to taxpayers, nor is it efficient if it collects more revenue only by increasing intrusive audits. A balanced assessment must therefore examine both the quantity and the quality of administrative outputs.

Uzbekistan is a useful case for developing such an approach. The country has undertaken a broad modernization of tax administration based on electronic reporting, electronic invoices, online cash registers, digital marking, risk analysis and integrated information systems. In 2024, the Tax Committee reported that the introduction of electronic document circulation, electronic signatures, online cash registers, risk-analysis systems and digital marking had improved administrative performance and taxpayer service [4]. By October 2024, marketplace databases were integrated with tax information systems and about 1.4 billion electronic fiscal receipts with a total reported value of UZS 66.2 trillion had been issued during the year [5]. A real-time risk evaluation mechanism for electronic invoices entered testing in late 2025, and in July 2026 the Tax Committee launched the AI SOLIQ platform to provide taxpayers with AI-supported analysis of tax information, invoice-risk explanations and other services [6]. These developments substantially increase the amount and granularity of information available for performance measurement.

At the fiscal level, official data show strong nominal revenue growth. State budget revenues rose from approximately UZS 164.8 trillion in 2021 to UZS 202.0 trillion in 2022, UZS 231.7 trillion in 2023, UZS 274.4 trillion in 2024 and UZS 359.8 trillion in 2025 [7]. This is an important achievement in revenue mobilization, but the trend cannot be interpreted as a direct measure of administrative efficiency because it also reflects economic growth, inflation, changes in tax policy, the tax base and the composition of revenues. OECD guidance similarly warns that even the widely used cost-of-collection ratio can be misleading in cross-country comparisons because tax policy changes, macroeconomic conditions and shifts in administrative responsibilities affect both its numerator and denominator [8].

The purpose of this article is to develop an applied framework for assessing tax administration efficiency in Uzbekistan. The study pursues five objectives: first, to distinguish the concepts of fiscal effectiveness, operational efficiency and taxpayer-centered performance; second, to synthesize the main international measurement approaches; third, to interpret recent fiscal and digital developments in Uzbekistan without attributing causality that the available data cannot support; fourth, to propose a Tax Administration Efficiency Index (TAEI) and a practical KPI dashboard; and fifth, to formulate an implementation roadmap for institutionalizing performance measurement at national and regional levels. The contribution is therefore methodological and policy-oriented rather than a claim to produce a definitive score from incomplete public data.

2. Materials and Methods

2.1 Conceptual basis: efficiency, effectiveness and compliance

The study applies a systems approach in which tax administration is treated as a public-sector production process. Inputs include budget resources, personnel, information technology, legal authority, third-party data and organizational capital. Intermediate processes include registration, return processing, payment accounting, risk management, audit, debt collection, taxpayer service and dispute resolution. Outputs include processed returns, completed audits, resolved cases and digital services, while outcomes include timely filing and payment, accurate reporting, lower arrears, reduced tax gaps, higher voluntary compliance, taxpayer trust and sustainable revenue collection. This distinction prevents a common analytical error: confusing activity with performance. A high number of audits, for example, is an output; it becomes evidence of effectiveness only when risk selection is accurate, additional liabilities are collectible, noncompliance is deterred, and compliant taxpayers are not unnecessarily burdened.

The framework also distinguishes administrative cost from social cost. The cost of collection, commonly defined as annual tax-administration operating expenditure divided by net revenue collected, measures internal resource intensity. Yet the full cost of a tax system also includes taxpayer time, accounting expenditure, software costs, uncertainty and delays. A reform that automates an internal task but requires taxpayers to submit duplicate information may improve the authority's internal metric while worsening system-wide efficiency. For this reason, the proposed framework assigns a separate dimension to taxpayer service and compliance cost.

Compliance is treated as a behavioral chain rather than a binary outcome. The chain begins with correct registration, continues through timely filing, accurate reporting and timely payment, and ends with manageable arrears and effective dispute resolution. The approach is consistent with TADAT and ISORA, which emphasize on-time filing, on-time payment, arrears, audit and verification, service and governance [9]. It is also consistent with empirical IMF research showing that stronger tax-administration practices are associated with better compliance and revenue outcomes, while digitalization, taxpayer services, governance and public trust are especially important correlates of performance [10].

2.2 International performance-measurement frameworks

Table 1. Four international frameworks are used as analytical anchors. TADAT provides a diagnostic view of institutional performance across nine outcome areas and is particularly useful for identifying weaknesses in core functions. ISORA supplies quantitative and qualitative data across a broad range of tax-administration practices and resources, enabling benchmarking and productivity analysis. The OECD Tax Administration series interprets these data and highlights operational measures such as e-filing, e-payment, service demand, workforce allocation, ICT expenditure and cost of

collection. IMF analytical work adds tax-gap, compliance and reform-yield perspectives, helping connect administrative practices with fiscal outcomes [11].

Table 1. International frameworks relevant to tax administration efficiency assessment

Framework	Primary purpose	Typical indicators	Main strength	Main limitation
TADAT	Outcome-oriented diagnostic across nine performance areas	Registration integrity; risk management; filing; payment; reporting accuracy; disputes; revenue management; accountability	Strong institutional diagnosis; common scoring logic	Not designed as a simple annual management score
ISORA	Comparative administrative data and practices	Active taxpayers; e-filing; e-payment; arrears; staffing; operating cost; audits; services	Large cross-country dataset; operational benchmarking	Data comparability depends on definitions and reporting quality
OECD Tax Administration Series	Interpretation of ISORA and technology trends	Cost of collection; channel use; digital services; workforce and ICT indicators	Management-oriented comparative evidence	Cross-country ratios require contextual interpretation
IMF RA-GAP and compliance analysis	Measurement of potential versus actual revenue	Tax gap; compliance gap; policy gap	Links administration to revenue potential	Requires detailed, high-quality tax-base data
Integrated national KPI system	Continuous domestic performance management	Fiscal, compliance, cost, service, digital and governance indicators	Can be tailored to national priorities and regional management	Needs stable definitions, automated data and transparent governance

Source: Author's synthesis based on OECD, IMF, ISORA and TADAT materials

2.3 Data sources and descriptive method

The empirical component uses publicly available official data rather than confidential taxpayer-level records. State budget revenue data for 2021-2025 are compiled from the Ministry of Economy and Finance and the Chamber of Accounts. The 2022 Ministry report states that revenues reached UZS 202 trillion, UZS 37.2 trillion more than in 2021, which implies approximately UZS 164.8 trillion in 2021 [12]. Annual revenue was UZS 231.7213 trillion in 2023 [13], UZS 274.423 trillion in 2024 [14], and UZS 359.8 trillion in 2025 according to the external audit assessment published by the Chamber of

Accounts [14]. These values are used only to illustrate fiscal scale and trend, not to estimate the causal effect of administrative reform.

Digitalization evidence is drawn from official Tax Committee communications on electronic services, online cash registers, fiscal receipts, risk analysis and AI-supported services [15]. The 2024 IMF Article IV report is used as an external institutional reference because it notes continued efforts to automate tax and customs administration and identifies further strengthening of tax administration as part of the revenue reform agenda [16]. The methodological stance is deliberately conservative: where public data do not disclose operating expenditure, full-time-equivalent staff, on-time filing, on-time payment, arrears composition or audit yield in a consistent annual series, the article proposes indicators and data requirements rather than inventing estimates.

2.4 Construction of the Tax Administration Efficiency Index

The proposed Tax Administration Efficiency Index (TAEI) is a composite annual score designed for internal management, regional comparison and public reporting. It is not intended to replace TADAT or ISORA. Instead, it translates their logic into a compact domestic monitoring tool. For year t, the index is defined as: TAEI_t = Sum(w_j x S_jt), where S_jt is the normalized score of dimension j on a 0-100 scale, w_j is the assigned weight, and the sum of weights equals one. Positive indicators are normalized so that higher performance produces a higher score; negative indicators such as the cost-of-collection ratio, arrears ratio or average processing time are reverse-scaled. Multi-year domestic benchmarks should be preferred to arbitrary international thresholds unless definitions are fully comparable.

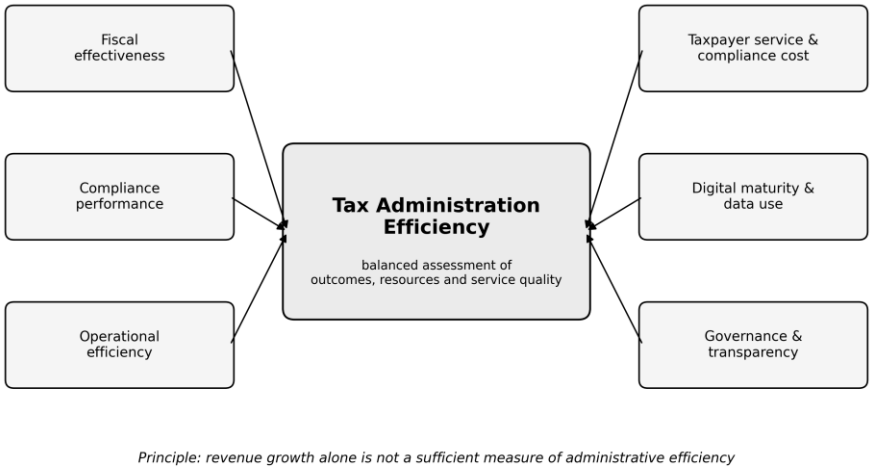
Six dimensions are proposed: fiscal effectiveness; compliance performance; operational efficiency; taxpayer service and compliance cost; digital maturity and data use; and governance and transparency. The weighting scheme gives the greatest combined importance to compliance and fiscal outcomes but reserves 40 percent of the index for operational, service, digital and governance quality. This prevents a revenue-only interpretation of performance. A tax authority could therefore improve its TAEI even when nominal revenue growth slows, provided that on-time compliance rises, arrears fall, automation improves and taxpayer burden decreases.

3. Results

3.1 A multidimensional interpretation of tax administration efficiency

The synthesis of international frameworks leads to a central result: the efficiency of tax administration should be assessed through a balanced set of outcomes rather than through a single fiscal ratio. Figure 1 summarizes the proposed structure. Fiscal effectiveness shows whether the administration supports sustainable revenue mobilization. Compliance performance shows whether taxpayers register, file, report and pay correctly. Operational efficiency measures the resource intensity and productivity of administrative processes. Taxpayer service captures the cost and quality of interaction with the authority. Digital maturity measures the extent to which data are reused, reconciled and analyzed automatically. Governance and transparency ensure that the performance system itself is reliable, explainable and accountable.

Figure 1. Multidimensional framework for assessing tax administration efficiency



Source: Author's conceptualization based on TADAT, ISORA and OECD Tax Administration frameworks

The framework is designed to prevent metric substitution. Revenue targets are often visible and politically salient, so they can crowd out less visible indicators such as filing timeliness, unresolved arrears, processing delays, taxpayer satisfaction or the false-positive rate of risk models. A multidimensional framework reduces this risk by requiring managers to report several linked dimensions simultaneously. It also makes trade-offs explicit. For example, additional audit revenue may improve fiscal yield but reduce efficiency if it requires excessive staff hours, has a low collection rate after assessment, or generates avoidable disputes.

3.2 Fiscal trend in Uzbekistan: strong growth, but not a complete efficiency measure

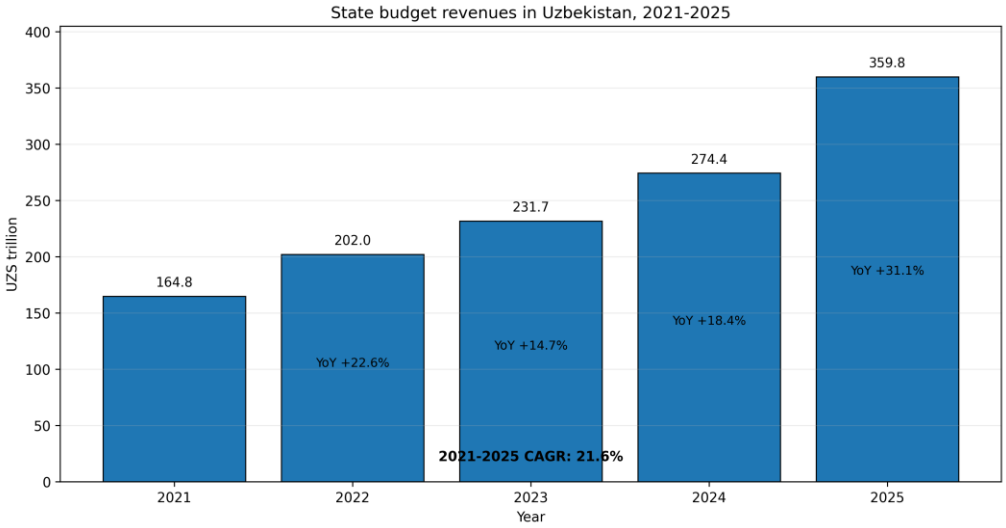
Table 2. Official data indicate that Uzbekistan's state budget revenues more than doubled in nominal terms between 2021 and 2025. The implied compound annual growth rate was about 21.6 percent. Annual growth was approximately 22.6 percent in 2022, 14.7 percent in 2023, 18.4 percent in 2024 and 31.1 percent in 2025. Figure 2. This trend demonstrates rising fiscal capacity, but it is not possible to isolate the administrative contribution from public aggregate data alone. Economic growth, inflation, changes in tax rates, changes in exemptions, formalization, improved administration and one-off revenue factors can all influence the same series.

Table 2. State budget revenue trend in Uzbekistan, 2021-2025

Year	State budget revenue, UZS tn	YoY growth, %	Source/interpretation
2021	164.8	-	Derived from the 2022 official statement that revenue increased by UZS 37.2 tn
2022	202.0	22.6	Official Ministry of Economy and Finance annual result
2023	231.7	14.7	Official annual state budget revenue table
2024	274.4	18.4	Official annual state budget execution data
2025	359.8	31.1	Annual state budget revenue reported in external audit assessment

Source: Author calculations from official Ministry of Economy and Finance and Chamber of Accounts data [12-15]. Values are nominal.

Figure 2. State budget revenues in Uzbekistan, 2021-2025



Source: Author's calculations based on official fiscal data

The analytical implication is that revenue should be decomposed before it is used for performance evaluation. At minimum, management should distinguish the policy effect, macroeconomic or base effect, compliance effect and collection effect. If a tax rate is increased, the additional revenue caused by the policy change should not be credited entirely to administrative efficiency. If inflation raises nominal turnover and tax receipts, the effect should likewise be separated. Conversely, if administrative reform broadens the registered base, reduces underreporting or accelerates payment, that contribution should be identified through compliance and tax-gap indicators rather than inferred mechanically from total revenue growth.

3.3 Digitalization expands the measurable performance frontier

Uzbekistan's digital tax infrastructure creates an opportunity to move from periodic, manually assembled performance reports to near-real-time management information. The Tax Committee has reported the use of electronic document circulation, electronic signatures, online cash registers, risk analysis and digital marking [17]. Fiscal receipts linked to product identifiers and marketplace integrations create transaction-level information that can support compliance monitoring and service analysis. The real-time electronic-invoice risk system introduced for testing in late 2025 goes further by assigning risk classifications at the time an invoice is created, while the AI SOLIQ platform launched in July 2026 allows taxpayers to obtain intelligent analysis and explanations related to invoice risk, tax ratings, incentives and reporting [18].

From an efficiency-measurement perspective, the value of these systems lies not only in control. They can generate time stamps, processing durations, error rates, automated validation rates, taxpayer correction rates and service-channel data. Such information enables direct measurement of process efficiency. For example, the authority can compare the average time required to resolve an electronic discrepancy with the time required for a traditional desk review; measure the share of invoices processed without manual intervention; estimate how many taxpayer contacts are avoided through pre-filled or self-service functions; and evaluate whether risk-selected audits produce a higher confirmed yield per staff hour than non-risk-selected cases.

Table 3. Digitalization also creates new measurement risks. High transaction volumes do not necessarily mean high-quality data. Incorrect product codes, duplicate identifiers, delayed updates and inconsistent taxpayer master data can produce false

alerts. Moreover, an opaque risk model may shift administrative burden to compliant firms. Therefore, digital maturity must include data-quality, explainability and exception-management indicators rather than simply counting the number of electronic services.

3.4 Proposed Tax Administration Efficiency Index (TAEI)

Table 3. Proposed dimensions and weights of the Tax Administration Efficiency Index (TAEI)

Dimension	Weight	Illustrative indicators	Interpretation
Fiscal effectiveness (FE)	0.20	Revenue realization against analytically adjusted baseline; tax-gap trend; collectible assessment ratio	Measures fiscal outcomes after separating policy and macro effects where possible
Compliance performance (CP)	0.20	On-time filing; on-time payment by value; registration accuracy; arrears ratio; repeat noncompliance	Measures voluntary and enforced compliance outcomes
Operational efficiency (OE)	0.15	Cost of collection; active taxpayers per FTE; returns processed per FTE; audit yield per staff hour	Measures use of administrative resources
Taxpayer service & compliance cost (TS)	0.15	Digital completion rate; average response time; refund timeliness; taxpayer satisfaction; estimated compliance time	Measures taxpayer-facing efficiency and burden
Digital maturity & data use (DM)	0.15	E-filing/e-payment; pre-filled data; API integration; automated matching; risk-model precision; data-quality rate	Measures automation and analytical capability
Governance & transparency (GT)	0.15	Published KPIs; audit trail; complaint resolution; internal control; data governance; independent review	Measures accountability and reliability of administration

TAEI_t = Sum(w_j x S_jt), with each dimension normalized to 0-100. Source: Author's development based on

A practical scoring rule can classify results into four management bands: 80-100, strong and sustainable performance; 65-79, advanced performance with targeted gaps; 50-64, developing performance requiring structured improvement; and below 50, priority reform area. These bands should initially be used for domestic trend analysis, not international ranking. The score should be calculated nationally and, where data quality permits, by region and major taxpayer segment. Regional results must be adjusted for structural factors outside the control of local tax offices, such as the concentration of large taxpayers, industrial structure and centrally administered taxes.

The Table 4. index should also contain safeguards against mechanical target behavior. At least one quality indicator should accompany each volume indicator. Audit

yield should be paired with the share of assessments sustained after objection or appeal and the collection rate of assessed liabilities. Debt recovery should be paired with the age structure of arrears and the write-off or insolvency status of uncollectible debt. Digital processing rates should be paired with system availability, correction rates and taxpayer satisfaction. This design reduces incentives to maximize a narrow indicator at the expense of broader performance.

3.5 Core KPI dashboard for annual and quarterly management

Table 4. Recommended core KPI dashboard for tax administration efficiency

Indicator	Formula / definition	Desired direction	Frequency	Primary dimension
On-time filing rate	Returns filed by statutory due date / returns expected	Higher	Monthly/quarterly	Compliance
On-time payment rate by value	Tax paid by due date / tax due	Higher	Monthly/quarterly	Compliance
Arrears ratio	Closing collectible arrears / annual net revenue	Lower	Quarterly	Compliance/fiscal
Cost of collection	Tax administration operating cost / net revenue collected x 100	Lower over time	Annual	Operational efficiency
Active taxpayers per FTE	Active taxpayer accounts / full-time-equivalent staff	Context-dependent; productivity trend	Annual	Operational efficiency
Risk-audit precision	Risk-selected audits with material confirmed adjustment / risk-selected audits completed	Higher	Quarterly	Risk management
Assessment collection rate	Cash collected from audit assessments / collectible audit assessments	Higher	Quarterly	Enforcement quality
Digital completion rate	Eligible taxpayer transactions completed	Higher	Monthly	Service/digital

	end-to-end digitally / eligible transactions			
Average resolution time	Median days to resolve selected service, discrepancy or appeal category	Lower	Monthly/quarterly	Service
Data-quality exception rate	Records failing key validation or matching rules / records processed	Lower	Monthly	Digital/governance
Taxpayer satisfaction	Standardized survey score for clarity, accessibility and fairness	Higher	Annual	Service/trust
KPI publication timeliness	Performance reports published on schedule / reports planned	Higher	Annual	Transparency

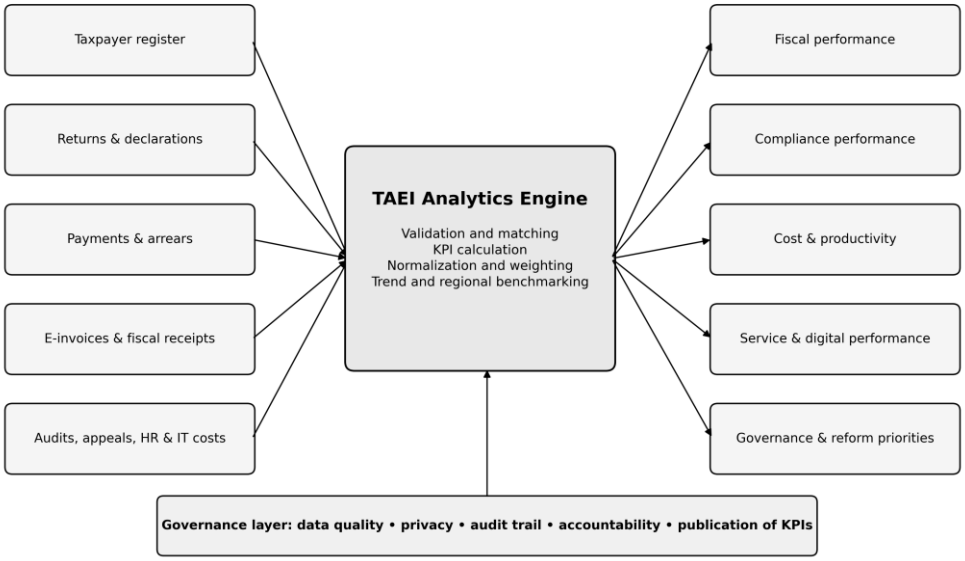
Source: Author's development drawing on TADAT, ISORA and OECD practice

The dashboard should be designed as a management chain rather than a collection of unrelated statistics. For example, a decline in on-time payment may increase arrears, which may then increase debt-collection workload and administrative cost. A rise in electronic service use may reduce in-person contacts and processing time. Better taxpayer-master-data quality may improve risk-model precision, which may in turn raise audit productivity while reducing unnecessary interventions. The value of the dashboard therefore lies in explaining relationships between indicators and helping management identify bottlenecks.

3.6 Proposed digital architecture for performance measurement

The Figure 3. TAEI requires consistent data definitions and automated extraction from operational systems. Figure 3 proposes a simple architecture. Source systems include the taxpayer register, declarations, payments and arrears, electronic invoices and fiscal receipts, audit and appeal systems, and internal HR and IT-cost records. A central analytics layer validates identifiers, calculates KPIs, standardizes scores, tracks trends and permits regional or segment benchmarking. Outputs are organized into the six performance dimensions and a reform-priority dashboard. A governance layer defines data ownership, access rights, audit trails, publication rules and quality controls.

Figure 3. Proposed architecture for a tax administration efficiency dashboard



Source: Author's development.

This architecture is compatible with the direction of Uzbekistan's current digital reforms. The objective is not to create another isolated information system. Instead, the dashboard should reuse data already generated by electronic filing, invoicing, fiscal receipts, payments and administrative workflows. Stable taxpayer identifiers and standardized time stamps are particularly important because they allow each process to be measured from initiation to completion. Where systems are administered by different agencies, API-based exchange and clear data-governance agreements should replace manual spreadsheet reconciliation.[19]

3.7 Implementation roadmap

Table 5. Roadmap for institutionalizing tax administration efficiency assessment in Uzbekistan

Phase	Main actions	Key output	Main risk
1. Diagnostic and KPI dictionary (0-6 months)	Map existing indicators, definitions, owners and data gaps; align with TADAT/ISORA concepts	Approved national KPI dictionary and baseline data-quality report	Too many indicators and inconsistent definitions
2. Automated data extraction (6-12 months)	Connect register, returns, payments, arrears, service, audit and cost data	Quarterly management dashboard with automated refresh	Manual adjustments undermine comparability
3. Pilot TAEI (12-18 months)	Calculate national and selected regional/segment scores; test weights and normalization	Pilot TAEI with documented methodology	Composite score hides underlying weaknesses

4. Performance contracts and reform analytics (18-30 months)	Link management goals to balanced KPIs rather than revenue alone; add causal diagnostics	Balanced management system and reform-monitoring reports	Target gaming or unfair regional comparisons
5. Public reporting and independent review (30+ months)	Publish core indicators, methodology and annual performance report; periodically validate definitions	Transparent performance report and stronger accountability	Publication without context may lead to misinterpretation

Source: Author's development.

4. Discussion

The results support a shift from revenue-target management toward performance management. Revenue remains the final fiscal output of the tax system, but it is jointly determined by tax policy, the economy and administration. Evaluating local offices or the national administration solely by nominal revenue can therefore create distorted incentives. A region with rapid economic growth may exceed a revenue forecast without improving compliance processes, while a region experiencing a temporary sectoral downturn may miss a revenue target despite strong registration, filing, payment and service performance. A balanced KPI system helps distinguish these cases.

The proposed approach is consistent with the international evolution of revenue administration. OECD and IMF evidence increasingly emphasizes digitalization, service orientation, risk management, public trust and data use alongside traditional enforcement [20]. The ISORA 2023 analysis reports positive associations between stronger administrative practices and indicators such as on-time filing, e-filing, e-payment and lower arrears, and it notes particularly strong relationships for digitalization, taxpayer services, governance and public trust [21]. This does not establish a simple causal mechanism for every country, but it reinforces the logic of measuring these dimensions explicitly.

For Uzbekistan, the main institutional advantage is that much of the required data infrastructure is already emerging. Electronic invoices and online fiscal receipts provide high-frequency transaction evidence; digital services record taxpayer interactions; risk systems generate case-selection data; and AI-supported services can make compliance explanations more accessible. The next step is to ensure that these systems produce standardized performance metadata. For instance, every service request should have a start time, completion time, outcome category and channel; every risk-selected case should record the rule or model that triggered selection, the final verified result and the staff resources used; every arrears case should record age, collectibility and resolution path. These fields transform operational systems into management-information systems.

The cost-of-collection ratio should be used carefully. OECD guidance states that it is useful as a domestic trend indicator but warns against simplistic cross-country comparisons because policy changes, economic conditions and changes in administrative responsibilities can alter the ratio independently of efficiency [22]. In Uzbekistan, the same caution applies across years. A major investment in data infrastructure or AI may

temporarily increase administrative expenditure while generating benefits only later. A short-run rise in the cost ratio may therefore be consistent with a long-run efficiency improvement. Performance evaluation should distinguish recurrent operating costs from strategic capital or transformation expenditure where accounting data permit.

Taxpayer service deserves equal attention because voluntary compliance is partly a function of administrative design. Complex forms, unclear guidance, repeated requests for information and long processing times increase the cost of compliance and can undermine trust. The digital transformation of tax administration should therefore be evaluated not only by the number of online systems but by end-to-end completion, error reduction, response time and user experience. The launch of AI SOLIQ is relevant in this respect because intelligent explanations can reduce information asymmetry, but its effectiveness should be measured by whether users actually resolve issues faster, submit fewer incorrect documents and report higher satisfaction.

Risk management is another area where output counts can be misleading. A high share of taxpayers classified as risky may indicate either better detection or a poorly calibrated model. The key performance measures are precision, materiality and downstream outcomes. A risk model is useful when selected cases have a higher confirmed noncompliance rate than randomly or traditionally selected cases, when assessed liabilities are collectible, and when false positives remain low. The electronic-invoice risk system introduced in Uzbekistan provides a suitable environment for such measurement because classifications are generated in real time and can be matched with later outcomes.

Regional benchmarking requires methodological safeguards. Tax offices operate in different economic environments. A region dominated by large extractive or industrial enterprises will have a different tax base, transaction structure and risk profile from a region dominated by small services or agriculture. Therefore, raw revenue per employee or audit yield should not be used to rank regions without normalization. The TAEI can be calculated by region, but fiscal indicators should be adjusted for assigned revenue bases and taxpayer structure, while process indicators such as filing timeliness, payment timeliness, service resolution and data quality can be compared more directly.

The framework also supports better reform evaluation. When a new digital tool is introduced, performance should be measured before and after implementation using a limited set of outcome and process indicators. For example, an automated pre-filing validation rule may be evaluated through changes in error rates, correction time, taxpayer contacts and subsequent audit findings. A new debt-management module may be evaluated through the share of arrears resolved within 30, 90 and 180 days. This moves the reform agenda from technology deployment toward evidence-based management.

Several limitations remain. First, this article does not have access to confidential microdata or a complete public series for operating expenditure, staff allocation, filing timeliness, payment timeliness, collectible arrears and audit outcomes. The TAEI is therefore proposed as a methodology rather than calculated as an official score. Second, the weights are normative and should be tested through expert consultation, sensitivity analysis and pilot implementation. Third, composite indices can hide important weaknesses, so the headline TAEI should always be published together with its component dimensions and underlying KPIs. Fourth, causal evaluation of reforms requires designs such as phased pilots, difference-in-differences, randomized communication experiments or other quasi-experimental methods where feasible.

5. Conclusion

Tax administration efficiency is a multidimensional concept that cannot be inferred from revenue growth alone. Uzbekistan's state budget revenues increased strongly from 2021 to 2025, and the country has simultaneously expanded digital tax infrastructure, electronic transactions, risk analysis and AI-supported services. These trends create favorable conditions for a more advanced performance-management system, but they also make measurement more important: technology and revenue should be evaluated by the outcomes they produce, the resources they consume and the burden they impose on compliant taxpayers.

This article proposes a Tax Administration Efficiency Index built around six dimensions: fiscal effectiveness, compliance performance, operational efficiency, taxpayer service and compliance cost, digital maturity and data use, and governance and transparency. The index is supported by a core KPI dashboard and a data architecture that reuses information from the taxpayer register, returns, payments, arrears, electronic invoices, fiscal receipts, audits, appeals and internal resource systems. The framework is designed for domestic trend analysis and reform management rather than simplistic cross-country ranking.

The main policy implication is practical. Uzbekistan should institutionalize performance measurement in stages: first define indicators and data ownership; then automate extraction; pilot the TAEI; integrate balanced indicators into management; and finally publish a transparent annual performance report. Such a system would make it possible to distinguish fiscal growth caused by policy and economic conditions from improvements attributable to administration, while also ensuring that digital transformation reduces compliance costs and supports voluntary compliance. In this way, tax administration can be evaluated not only by how much revenue it collects, but by how reliably, efficiently, fairly and transparently it converts the tax law into sustainable public revenue.

REFERENCES

[1] OECD, *Tax Administration 2024: Comparative Information on OECD and Other Advanced and Emerging Economies*. Paris, France: OECD Publishing, 2024. doi: 10.1787/2d5fba9c-en.

[2] OECD, *Tax Administration 2025: Comparative Information on OECD and Other Advanced and Emerging Economies*. Paris, France: OECD Publishing, 2025.

[3] OECD, *Tax Administration 3.0: The Digital Transformation of Tax Administration*. Paris, France: OECD Publishing, 2020.

[4] W. J. Crandall, E. Gavin, Z. Liu, A. R. Masters, and P. Navalgundkar, *ISORA 2023: Tax Administration: Performance and Practices*. Washington, DC, USA: International Monetary Fund, IMF Departmental Paper 2026/008, 2026. doi: 10.5089/9798229044790.087.

[5] TADAT Secretariat, *Tax Administration Diagnostic Assessment Tool (TADAT): Performance Measurement Framework and Field Guide*. Washington, DC, USA: TADAT Secretariat, 2022.

[6] International Monetary Fund, *Quantifying the Revenue Yields from Tax Administration Reforms*. Washington, DC, USA: International Monetary Fund, IMF Working Paper 2023/231, 2023.

[7] International Monetary Fund, *Closing the Gap: How Tax Administration Performance Shapes Compliance*. Washington, DC, USA: International Monetary Fund, IMF Working Paper 2025/209, 2025.

[8] International Monetary Fund, *Republic of Uzbekistan: 2024 Article IV Consultation—Press Release and Staff Report*. Washington, DC, USA: International Monetary Fund, IMF Country Report No. 24/210, 2024.

[9] J. Slemrod and C. Gillitzer, *Tax Systems*. Cambridge, MA, USA: MIT Press, 2014.

[10] J. Alm, "What motivates tax compliance?" *Journal of Economic Surveys*, vol. 33, no. 2, pp. 353–388, 2019.

[11] E. Kirchler, *The Economic Psychology of Tax Behaviour*. Cambridge, U.K.: Cambridge University Press, 2007.

[12] Ministry of Economy and Finance of the Republic of Uzbekistan, "Analysis of the activities of the Ministry of Economy and Finance for 2022 and priorities for 2023," Tashkent, Uzbekistan, 2023.

[13] Ministry of Economy and Finance of the Republic of Uzbekistan, "State budget revenues: 2023 annual execution," Tashkent, Uzbekistan, 2024.
[14] Ministry of Economy and Finance of the Republic of Uzbekistan, "Balance of the consolidated budget of the Republic of Uzbekistan and sources of deficit financing: 2024 annual execution," Tashkent, Uzbekistan, 2025.
[15] Chamber of Accounts of the Republic of Uzbekistan, "The report on the execution of the state budget and the budgets of state target funds of the Republic of Uzbekistan for 2025 has undergone external audit and assessment," Tashkent, Uzbekistan, Jun. 29, 2026.
[16] Tax Committee of the Republic of Uzbekistan, "Achievements and prospects of tax administration digitalization discussed at the International PLUS Forum," Tashkent, Uzbekistan, Jun. 12, 2024.
[17] Tax Committee of the Republic of Uzbekistan, "More than 1.4 billion electronic receipts issued to consumers since the beginning of the year," Tashkent, Uzbekistan, Oct. 18, 2024.
[18] Tax Committee of the Republic of Uzbekistan, "Use and selection of online cash registers and virtual cash registers," Tashkent, Uzbekistan, 2024.
[19] Tax Committee of the Republic of Uzbekistan, "A new information system aimed at improving tax administration is being introduced," Tashkent, Uzbekistan, Dec. 17, 2025.
[20] Tax Committee of the Republic of Uzbekistan, "AI SOLIQ—A new generation digital platform based on artificial intelligence," Tashkent, Uzbekistan, Jul. 30, 2026.
[21] Republic of Uzbekistan, *Tax Code of the Republic of Uzbekistan*, current ed. Tashkent, Uzbekistan: National Database of Legislation (LexUZ), 2019.
[22] Ministry of Economy and Finance of the Republic of Uzbekistan, "Resolution No. PQ-397 on measures to improve the procedure for forecasting state budget revenues," information note, Tashkent, Uzbekistan, Jan. 7, 2026.