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A DATA-DRIVEN FRAMEWORK FOR EVALUATING PUBLIC PROCUREMENT PERFORMANCE

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Public procurement performance is often summarized through spending totals, tender counts or the difference between an estimated and awarded price. Such measures are convenient, but they can give an incomplete or misleading picture. A low award price may follow an unrealistic estimate, weak specifications or a contract that later fails. A more reliable assessment should connect administrative data across the procurement cycle and ask whether public needs were met competitively, lawfully, on time and at an acceptable whole-life cost. This thesis proposes a data-driven evaluation framework that combines outcome indicators with process diagnostics and risk signals [1].The framework begins with a unified data model. Each procurement should be traceable from planning and tender publication to award, contract amendment, delivery, acceptance and payment. The Open Contracting Data Standard provides a useful design reference because it describes structured information for each stage and connects related records through a unique open contracting identifier [2]. A national identifier can link the e-procurement platform with budget execution, supplier registries, complaints and contract-management records. Before indicators are calculated, data should be checked for completeness, duplicates, inconsistent dates, missing supplier identifiers, currency errors and implausible value changes. Publishing a dashboard without such validation may make poor data look authoritative.

Performance should be assessed through complementary dimensions rather than a single headline score. The competition dimension can include the average number of responsive bids, the share of single-bid procedures, the proportion of procedures cancelled after publication and the share of awards to small firms. The process dimension can measure elapsed time at each stage, late approvals and the frequency of repeated tenders. Contract performance can track delivery on time, accepted quantities, amendments, cost overruns, termination and payment delays. Value-for-money analysis should compare equivalent purchases by specification, quantity, delivery terms and market conditions, not simply compare the initial estimate with the final price. The European Union's procurement data space, for example, defines indicators such as the proportion of SME bids among all bids and uses award notices as a calculation base [3].

A further analytical layer uses risk indicators to identify cases for review. Patterns such as repeated awards to one supplier, very short submission periods, unusually low numbers of bids, recurring amendments, similar bid prices or concentration among related suppliers can signal the need for examination. The World Bank's Governance Risk Assessment System applies data analytics to identify possible fraud, corruption and collusion risks in government contracting [4]. Such indicators should be treated as screening signals, not as proof of misconduct. Each flag requires contextual assessment, access to underlying records and a documented decision by competent reviewers. This distinction protects legitimate suppliers from automated suspicion while allowing audit resources to focus on higher-risk transactions.

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The measurement method should make comparisons fair. Buyers need to be grouped by sector, purchase type, region, value band and procedure, because a hospital equipment tender is not directly comparable with routine office supplies. Time series should be interpreted alongside changes in inflation, market structure, legal rules and procurement thresholds. Price savings require a defensible counterfactual: the expected cost of an equivalent purchase under comparable conditions. Where possible, analysts can compare similar buyers or contracts and examine trends before and after a reform. World Bank guidance on procurement analytics emphasizes combining procurement data with other administrative information and matching analytical methods to operational questions [5].

The framework can be introduced in stages. First, define a limited core set of indicators with transparent formulas, data owners, reporting periods and disaggregation rules. Second, pilot the indicators in selected sectors and reconcile the results with contract files and audit findings. Third, publish dashboards that show both values and data-quality limitations. Finally, use the findings to revise specifications, improve planning, strengthen supplier access or target training. Indicator targets should be realistic and periodically reviewed; otherwise agencies may optimize the measured number instead of the public outcome. Performance reports should therefore pair quantitative trends with explanations of causes, corrective actions and follow-up dates.

For Uzbekistan, the practical contribution of this approach lies in turning electronic procurement records into a learning system. Linking tender data to contract delivery and payment would reveal where delays, cancellations or cost changes arise. Disaggregating participation by supplier size and region would show whether formal digital access translates into meaningful competition. Risk analytics could help audit institutions prioritize cases, while clear safeguards would ensure that automated alerts remain review prompts. A data-driven framework thus evaluates not only what was purchased, but how the market was engaged and whether the public received the contracted result. Its success depends on sound data governance, analytical capacity and the willingness to use evidence in procurement decisions.

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