

**Government Expenditure Budget Efficiency Through the Implementation of the E-Procurement System at the Medan City LPSE**

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**Abstract**

*This study evaluates government expenditure efficiency through the Electronic Procurement System (SPSE) at LPSE Medan City. Using a quantitative descriptive method, it analyzes 639 tender packages from Fiscal Year (FY) 2024 and 286 packages from ongoing FY 2025 (as of June). Budget efficiency is measured by calculating the variance between the Total Owner's Estimate (HPS) and the final Contract Value. The empirical results show significant regional budget savings, achieving an efficiency rate of 9.23% (Rp 79.49 billion) in FY 2024 and 8.51% (Rp 37.63 billion) in FY 2025. While the platform has successfully enhanced transparency and vendor competition, achieving 100% timely budget realization is still hindered by technical and managerial bottlenecks, such as delayed tender submissions by regional agencies, retendering risks, and server slowdowns during peak seasons. This study offers practical insights for improving future cost-effective regional budgetary plans.*

**Keywords:** *E-procurement, budget efficiency, LPSE Medan City, SPSE, government expenditure.*

**INTRODUCTION**

Government procurement stands as a fundamental pillar within modern governance, primarily tasked with supporting public policy execution and driving infrastructure advancement (Asian Development Bank, 2020). Implementing electronic procurement (*e-procurement*) has emerged as a cornerstone national strategy aimed at fostering clean governance, strictly shielded from corruption, collusion, and nepotism (KKN) (Umar et al., 2021). In this digital era, technological breakthroughs have substantially overhauled public sector procurement systems. Various government bodies now strategically leverage information technology to streamline operational flows, trim operational expenses, and scale up institutional efficiency. Furthermore, this shifting landscape ensures that the procurement cycle operates with heightened transparency and accountability, fully aligned with prevailing statutory mandates. This web-based purchasing framework is conceptually recognized as *e-procurement* (Az-zahra et al., 2024).

As a sweeping nationwide transformation, the Government of Indonesia rolled out an *e-procurement* infrastructure driven by the Electronic Procurement System Application (SPSE), a mandate anchored in Presidential Regulation No. 16/2018 and its subsequent amendment, Presidential Regulation No. 12/2021 (Republik Indonesia, 2018). At the regional level, this structural refinement is systematically integrated via a specialized hub known as the Electronic Procurement Service (LPSE). The LPSE acts as the principal architect of the digital procurement ecosystem for all local government agencies and regional apparatuses (OPD) within its jurisdiction. In practice, the SPSE digital architecture is officially curated and monitored by the National Public Procurement Agency (LKPP) to enforce rigid procedural standardization, robust data security, and unwavering accountability across all national procurement channels (Lembaga Kebijakan Pengadaan Barang/Jasa Pemerintah, 2021; Lumintang et al., 2020).

## RESEARCH METHODS

This study employs a quantitative approach combined with a descriptive analytical method to evaluate and delineate the actual efficiency rate of government expenditures through the execution of the Electronic Procurement System (SPSE). The research was carried out at the Bureau of Procurement (BPBJ) under the Regional Secretariat of Medan City, which operates as the management unit for the Electronic Procurement Service (LPSE) of Medan City. The core focus of this investigation centers on the entire dataset of regional government procurement packages for goods and services published on the official LPSE Kota Medan portal. The sample selection was managed via a purposive sampling technique, establishing specific criteria requiring the procurement packages to utilize the *E-Tendering* (General Tender) mechanism and maintain a completed contract status during Fiscal Year 2024 and the ongoing Fiscal Year 2025 (calculated up to June 2025). Based on these parameters, the final research sample accumulated a total of 639 tender packages from fiscal year 2024 and 286 running tender packages from fiscal year 2025.

The data examined throughout this research consists entirely of quantitative secondary data structured in a historical panel format. These financial metrics were officially extracted from the log databases containing historical summaries of the Budget Ceiling, the Owner's Estimate (HPS), and the final locked Contract Value of winning bidders on the Medan City SPSE platform, alongside the Budget Realization Reports (LRA) published by the Regional Financial and Asset Management Agency (BKAD) of Medan City. Data collection was performed using a documentation method (*data mining*) by downloading electronic tender data sheets, complemented by a literature study analyzing active procurement regulations. The operational variables are divided into the implementation of the *e-procurement* system as the independent variable and government spending efficiency—gauged through the economic pillar of the *Value for Money* framework—as the dependent variable. Furthermore, the analytical procedure begins by categorizing the nominal value of procurement projects according to their respective types, followed by calculating the precise percentage of expenditure efficiency using the standard financial ratio formula:

$$\text{Efficiency Percentage} = \left( \frac{\text{Total Owner's Estimate} - \text{Total Contract Value}}{\text{Total Owner's Estimate}} \right) \times 100\%$$

The percentage calculation results are subsequently interpreted to analyze the trends in regional financial savings, the level of vendor competition, and to identify the technical bottlenecks in budget absorption encountered in the field.

## RESULTS AND DISCUSSION

This study presents procurement data for electronic goods and services (e-procurement) obtained from the official Electronic Procurement Service (LPSE) portal of the Medan City Government for the 2024 Fiscal Year, as well as ongoing data (Quarters I and II) for the 2025 Fiscal Year. The analyzed data focuses on the volume of tender packages, the total Budget

Ceiling Value (*Nilai Pagu Anggaran*), the Owner's Estimate value (*Harga Perkiraan Sendiri / HPS*), and the final Contract Value resulting from negotiations/tender winners to measure the efficiency level of regional expenditure budgets.

Based on the recapitulation of procurement data from the Goods and Services Procurement Division (*Bagian Pengadaan Barang dan Jasa / BPBJ*) of the Regional Secretariat of Medan City via the SPSE (*Sistem Pengadaan Secara Elektronik / Electronic Procurement System*) application, the volume and nominal details of the completed tender packages are presented in the tables below.

**Tabel 4.1. Summary of Medan City LPSE Tender Packages, FY 2024**

No	Type of Procurement	Number of Packages	Total Budget Allocation (Rp)	Total Estimated Cost (Rp)	Total Contract Value (Rp)
1	Procurement of Goods	142	185.450.250.000	183.120.400.000	168.450.150.000
2	Construction Work	318	542.800.180.000	538.950.000.000	485.120.340.000
3	Construction Services	85	42.150.600.000	41.800.250.000	38.950.400.000
4	Other Services	94	98.600.450.000	97.350.100.000	89.200.150.000
<b>TOTAL</b>		<b>639</b>	<b>869.001.480.000</b>	<b>861.220.750.000</b>	<b>781.721.040.000</b>

*Source: Data processed from the Official LPSE Portal of Medan City (2024 Physical Recapitulation).*

Table 4.1 shows that in the 2024 Fiscal Year, Construction Work packages heavily dominated procurement realization in Medan City, both in terms of quantity (318 packages) and budget allocation. This aligns with the Medan City Government's priority programs in accelerating urban infrastructure development, area revitalization, and flood control (drainage systems).

**Tabel 4.2. Summary of Ongoing Medan City LPSE Tender Packages, FY 2025 (As of June)**

No	Type of Procurement	Number of Packages	Total Budget Allocation (Rp)	Total Estimated Cost (Rp)	Total Contract Value (Rp)
1	Procurement of Goods	65	92.400.000.000	91.150.000.000	84.220.000.000
2	Construction Work	142	285.650.000.000	284.100.000.000	258.900.000.000
3	Construction Services	41	22.400.000.000	22.150.000.000	20.100.000.000
4	Other Services	38	45.120.000.000	44.800.000.000	41.350.000.000
<b>TOTAL</b>		<b>286</b>	<b>445.570.000.000</b>	<b>442.200.000.000</b>	<b>404.570.000.000</b>

*Source: Data processed from the Official LPSE Portal of Medan City (2025 SPSE Contract System).*

## Discussion

### 1. Analysis of Regional Expenditure Budget Efficiency

The regional expenditure budget in the procurement process of goods and services is measured quantitatively through the mathematical variance between the Owner's Estimate (*Harga Perkiraan Sendiri / HPS*) compiled by the Commitment-Making Officer (*Pejabat Pembuat Komitmen / PPK*) and the final Contract Value agreed upon with the winning tender provider. The budget efficiency percentage formula is expressed as follows:

$$\text{Efficiency Percentage} = \left( \frac{\text{Total Owner's Estimate} - \text{Total Contract Value}}{\text{Total Owner's Estimate}} \right) \times 100\%$$

Referring to the data recapitulation for the 2024 Fiscal Year (Table 4.1), the calculation of the expenditure budget savings rate is as follows:

- Efficiency Variance (Nominal):  
Rp 861,220,750,000 – Rp 781,721,040,000 = Rp 79,499,710,000.-
- 2024 Efficiency Percentage:

$$\text{Efficiency Percentage 2024} = \frac{\text{Rp 79,499,710,000}}{\text{Rp 861,220,750,000}} \times 100\% = 9.23\%$$

Meanwhile, for the ongoing data of the 2025 Fiscal Year (Table 4.2), the calculation of the expenditure savings rate is as follows:

- Efficiency Variance (Nominal):  
Rp 442,200,000,000 – Rp 404,570,000,000 = Rp 37,630,000,000.-
- 2025 Efficiency Percentage:

$$\text{Efficiency Percentage 2025} = \frac{\text{Rp 37,630,000,000}}{\text{Rp 442,200,000,000}} \times 100\% = 8.51\%$$

The efficiency percentage achievement of 9.23% in 2024 empirically proves that the implementation of e-procurement through the SPSE system at the Medan City LPSE is capable of minimizing potential regional budget waste early on during the vendor bidding phase. The accumulated expenditure budget savings of Rp 79.49 billion provide a positive contribution to suppressing the value of unproductive Unspent Budget Balance (*Sisa Lebih Pembiayaan Anggaran / SILPA*), while simultaneously creating broader fiscal space for the Medan City Government to reallocate the budget in the Revised Regional Budget (*Perubahan APBD*) for the benefit of social welfare programs.

### 2. System Transparency and Vendor Competition Level

The primary factor driving the high budget efficiency figures within this digital platform is the creation of a healthy and transparent competitive climate. Based on the system log analysis of LPSE Kota Medan, the average number of companies (vendors) downloading selection documents and actively submitting bidding files ranges from 4 to 7 entities for non-construction packages. This figure escalates significantly, reaching 10 to 14 companies for large-scale general construction work packages.

The principle of transparency implemented within the SPSE application directly mitigates the issue of asymmetric information between the Selection Working Group (*Pokja*) and the service providers. The entire sequence of procurement stages—spanning from tender announcements, clarification meetings (*anwijzing*), submission of bidding documents, administrative and technical evaluations, to winner announcements and the claims period—is

conducted entirely online. This openness of the digital audit trail narrows the opportunities for non-procedural negotiation practices, such as corruption, collusion, and nepotism (KKN).

### **3. Technical Bottlenecks in Achieving 100% Budget Realization**

Despite the implementation of *e-procurement* yielding significant efficiency impacts, the research findings identify several procurement execution barriers within the Medan City Government environment that affect the directive to achieve 100% physical and financial realization targets on time by the end of the fiscal year, including:

1. **Late Procurement Request:** Several Regional Apparatus Agencies (SKPD/OPD) are still slow in submitting tender readiness documents to the BPBJ Working Group (Pokja). Submissions that accumulate late in Quarter II or III imply a narrow remaining timeframe for executing physical contracts in the field before the fiscal year ends.
2. **Tender Failure (Retender):** Constraints such as mismatches in technical qualifications and incomplete compliance with administrative document thresholds by tender participants force several strategic packages to undergo a re-tendering process (*retender*). This process consumes an additional 14 to 21 working days, which hinders the commencement of expenditure absorption.
3. **Main SPSE Server Capacity:** During the peak period of bidding document submissions (*peak season* around March–May), technical issues in the form of slowed central server response times occasionally arise due to data traffic spikes, which potentially complicates vendors in uploading large-sized bidding files in a timely manner.

To mitigate the aforementioned constraints, the Procurement Bureau (BPBJ) of Medan City continuously encourages SKPDs to input procurement plans early through the SIRUP application (General Procurement Plan Information System) from the beginning of the year, enabling the tender stages to start earlier to guarantee smooth physical realization and regional expenditure absorption.

## **CONCLUSION**

Based on the research findings regarding government expenditure efficiency through the implementation of the *e-procurement* system at LPSE Kota Medan, it can be concluded that this digital transformation is empirically proven to generate significant regional budget savings. In Fiscal Year 2024, the achieved efficiency reached 9.23% (Rp 79,499,710,000.-), while the ongoing data as of June 2025 stood at 8.51% (Rp 37,630,000,000.-), both contributing positively to reducing unproductive SILPA values and expanding the regional fiscal space. Furthermore, the SPSE platform has successfully enhanced transparency and strengthened a healthy climate of vendor competition, with an average participation of up to 14 vendors in massive construction packages, thereby effectively reducing asymmetric information and minimizing opportunities for corruption, collusion, and nepotism (KKN) practices.

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