Procurement Cost & Supplier Performance Analysis – Project Report

1. Project Overview

This project simulates procurement analysis for a construction company. It covers supplier performance tracking, spend analysis, bid comparison, and material cost forecasting. The goal was to derive actionable insights from mock datasets and apply core procurement analytics skills using Excel.

2. Step-by-Step Analysis

2.1 Purchase Order Review

We reviewed 20 purchase orders placed with 5 suppliers for 6 materials (Cement, Gravel, Steel, Bricks, Pipes, Sand). The dataset included order quantities, unit prices, expected and actual delivery dates. A delay flag and day difference were calculated to track delivery performance.

What was done:

- Calculated delay in days by comparing Expected_Delivery and Actual_Delivery.
- Marked orders as **On-Time** or **Delayed** using a binary flag.
- Analyzed order distribution by material and supplier.

What we found:

- 48% of orders were delivered on time (10 out of 21).
- SUP01 had 100% on-time delivery across 4 orders.
- SUP05, the top-spend supplier, had multiple delays, including one for Cement and one for Bricks.
- Cement had the highest number of total orders (7 orders), confirming its priority in procurement.
- Average delay for late deliveries ranged between 1–2 days, indicating minor but frequent slippage.

Key Insights:

- Suppliers SUP03 and SUP05 showed inconsistent delivery performance.
- While SUP01 offered low cement prices and zero delays, they fulfilled fewer orders.

Recommendations:

- Increase order allocation to SUP01 for critical materials like Cement, due to reliable delivery and competitive pricing.
- Engage with SUP05 and SUP03 to understand recurring delays and enforce stricter delivery SLAs.
- Track and report supplier OTIF (On-Time-In-Full) monthly to drive accountability.

2.2 Spend Summary

We calculated total procurement spend per material and per supplier. Cement accounted for the highest overall spend, followed by Steel. We also benchmarked unit prices paid against market averages to identify overpayments.

Findings:

- Cement had the highest total spend at €29,207.25.
- SUP05 was the top supplier by spend, totaling €26,389.31.
- SUP01 consistently offered Cement below market rate, with unit prices as low as €2.88.
- SUP05 charged €5.38/unit for Cement, about 9% above the market average (€4.95).
- Steel and Pipes had the highest average over-market rates at 7.51% and 6.66%, respectively.

Recommendation:

- Consolidate high-volume Cement orders with low-cost suppliers like SUP01.
- Re-evaluate SUP05's Cement pricing before next contract cycle.
- For high-spend items like Steel, explore alternate vendors to reduce over-market costs.

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2.3 Supplier KPI Dashboard

We developed a dashboard to evaluate supplier performance using these KPIs:

- % On-Time Delivery
- Average Delay (days)
- Total Spend
- Cost Per Order
- Risk Rating (based on delivery and delay metrics)

Findings:

- SUP05 had the highest spend but the lowest on-time rate (25%).
- SUP03 had both high delay and poor on-time performance (33.3%).
- SUP01 was the most reliable supplier, with 75% on-time and no delays.
- Risk levels varied. SUP03 and SUP05 were flagged as **high-risk** despite their large order volumes.

Recommendation:

- Reassess use of **SUP03** and **SUP05** in future orders unless performance improves. Favor SUP01 or other medium-risk suppliers **(like SUP02)** With better delivery reliability.

2.4 Bid Comparison

Three quotes for steel were evaluated across (price, lead time, warranty, and compliance). A weighted scoring matrix was used to assess the offers.

Findings:

- SUP05 offered the lowest price (€2.85) and acceptable lead time (4 days), but lacked compliance documentation and had the lowest score (4).
- SUP03 scored highest overall (7) due to long warranty (12 months), but had the longest lead time (8 days) and no compliance documents.
- **SUP02** was the only compliant supplier and had a balanced offering with mid-level price and score.

Recommendation:

- Selection of SUP05 should be reviewed. If compliance is a critical requirement, consider SUP02 as the more balanced and compliant option. Reassess the weighting of price vs. compliance in scoring criteria for future RFQs.

2.5 Forecasting Material Costs

To anticipate future material costs, historical monthly prices were used to project short-term trends for Cement, Steel, and Gravel using the **FORECAST.ETS** function in Excel. This supports early decision-making in contract pricing and budget planning.

Method Used:

- Input: 7 days of historical prices for each material.
- Formula: =FORECAST.ETS(target_date, known_values, known_times) applied for 5 future periods.
- Output: 5-day forward price forecast for each material.

Results:

Cement

- Forecast shows a steady decline from €4.95 to €4.41 per unit.
- Indicates a stable market with mild deflation.

Steel

- Fluctuating forecast, peaking at €6.91 and dipping to €4.84 before rising again.
- Signals volatility and pricing pressure.

Gravel

- Forecast rises from €4.42 to €4.88 across five days.
- Consistent upward trend with moderate slope.

Recommendations:

- **Cement:** Lock in contract prices early while the trend is favourable.
- **Steel:** Monitor prices weekly. Delay high-volume purchases unless price stabilizes.

2.6 Documentation & SOP Checklist

A standardized checklist was created to track required documents across each procurement phase. Folder naming conventions and compliance indicators were added to support process audits.

Recommendation:

- Apply this SOP across internal workflows to ensure consistency, traceability, and audit readiness.

3. Key Insights

- Cement accounts for the highest spend and shows price fluctuation risk.
- -Supplier delivery performance is inconsistent across vendors.
- Using a bid scoring matrix improves selection objectivity.
- Forecasting tools enhance proactive procurement planning.

4. Recommendations

- Renegotiate material prices that exceed market average.
- Reduce dependency on high-risk or low-performing suppliers.
- Use bid scoring sheets for all upcoming supplier evaluations.
- Leverage forecast trends to plan cost-effective purchases.
- Enforce documentation standards through SOP adoption.

5. Next Steps

- Extend the analysis to more materials and historical PO data.
- Develop a real-time KPI dashboard using Power BI or Google Data Studio.
- Automate the Excel tracker using Power Query or basic VBA scripts.