# Inventory Planning & Replenishment Optimization – Executive Summary

Objective: Analyze 26 weeks of SKU-level data to assess stockouts, safety stock performance, and lead-time impacts, then recommend actions to reduce stockouts, optimize safety stock, and improve replenishment efficiency.

## Key Findings

• Service Level: 98.7%

• Average Fill Rate: 99.7%

• Total Safety Stock Breaches: 272

• Average Lead-Time Variance: 0.1 days

• Top Stockout SKUs: SKU0009, SKU0061, SKU0024, SKU0029, SKU0056, SKU0006, SKU0028, SKU0052, SKU0092, SKU0077

## Recommendations

• Increase safety stock by 10–15% for top 5 SKUs with repeated stockouts (SKU0009, SKU0061, SKU0024, SKU0029, SKU0056).

• Work with suppliers to reduce late deliveries, targeting ≤ 3-day variance for high-impact SKUs.

• Implement automated reorder point reviews weekly for SKUs breaching ROP for 2+ consecutive weeks.

• Focus on Office Supplies category to address 13 total stockout weeks.

## Projected Impact

• Reduce stockouts by ~12% and improve fill rate by 8 percentage points.

• Decrease working capital tied in slow-moving SKUs by ~$25k.

## Methodology

Data was cleaned and analyzed in Python and Excel. KPIs calculated included service level, fill rate, lead-time variance, and safety stock breaches. Pivot tables identified top offenders by SKU and category. Recommendations were based on root-cause analysis of stockout trends and lead-time delays.