

# Improving Demand Forecasting Accuracy

## Overview

This analysis evaluated demand forecasting accuracy by comparing forecasted demand with actual sales across products, categories, and time. The results indicate a moderate forecast accuracy (16% MAPE) with a low forecast bias (3%), suggesting forecasts are slightly overestimated. However, 26% of products exhibit high forecast errors, contributing disproportionately to inventory imbalance risks.

## Key Findings

- Forecast accuracy is consistent across categories, indicating no single category is driving inaccuracies.
- Forecast errors remain stable throughout the year, suggesting errors are systematic rather than seasonal.
- A subset of products accounts for most forecasting inaccuracies, highlighting the need for targeted intervention.

## Recommendations

### 1. Focus on High-Error Products

Products with low forecast accuracy should be prioritized for review. Analyzing demand volatility, pricing changes, and promotional effects at the product level will help refine forecasts where they matter most.

### 2. Reduce Forecast Bias Through Regular Calibration

The slight over-forecasting bias indicates the need for periodic forecast recalibration. Incorporating rolling forecast reviews using recent sales data will help align forecasts more closely with actual demand.

### 3. Segment Products by Forecast Accuracy

Classifying products into high, moderate, and low accuracy groups will enable differentiated forecasting strategies. Stable products can maintain current methods, while volatile products should be reviewed more frequently.

### 4. Establish Ongoing Forecast Performance Monitoring

MAPE and forecast bias should be tracked monthly as standard performance metrics. Continuous monitoring will allow early detection of forecast issues before they lead to excess stock or stockouts.

## Expected Business Impact

Implementing these recommendations will improve forecast reliability, reduce excess inventory, minimize stockout risk, and enhance inventory efficiency. A targeted approach to forecast improvement will support better decision-making and improved profitability.