

# Retail Inventory & Sales Analysis Report

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## 1. Inventory Snapshot

### Key Findings:

- On **2022-01-01**, Store S001 stocked **189** units of Product P0016, sold **127**, and ordered **125**.
- Same day, Product P0031 had only **75** in stock, sold **48**, and ordered **39**.

### Insight:

High-demand items occasionally lack sufficient reorder quantities, risking future stockouts and lost revenue.

### Recommendations:

- Implement **dynamic reorder thresholds** driven by moving averages of daily sales.
- Set minimum safety stock levels adjusted seasonally.

## 2. Inventory Status Alerts

### 2.1 Static Threshold

- **34 SKUs** flagged as “Below Threshold” (~3.4% of total SKUs).

### 2.2 Dynamic 7-Day Trigger

- **54,654 SKUs** (≈50%) are in “Reorder Now” status.

### Insight:

Overreliance on manual or static triggers leads to widespread replenishment delays.

**Recommendations:**

- Automate reorder triggers using a **7-day rolling average** of sales.
- Monitor supplier lead times and adjust reorder points accordingly.

3. Inventory Turnover Analysis

3.1 Top Performing SKUs

**Product Turnover Ratio**

|       |        |
|-------|--------|
| P0046 | 2,500+ |
| P0133 | 2,500+ |
| P0057 | 2,500+ |

3.2 Category & Regional Performance

**Region Category Turnover**

|       |             |         |
|-------|-------------|---------|
| South | Clothing    | 16,428  |
| South | Electronics | 11,000+ |
| West  | Electronics | 11,000+ |

**Insight:**

South region stores, particularly in Clothing and Electronics, excel in inventory efficiency.

**Recommendations:**

- Reallocate inventory toward **high-turnover regions**.
- Expand product assortment in top-performing categories.

4. Underperformance & Overstocking

4.1 Chronic Understocking

**Store Product Days Below Forecast**

|      |       |     |
|------|-------|-----|
| S001 | P0046 | 136 |
| S002 | P0125 | 136 |
| S004 | P0069 | 135 |
| S003 | P0057 | 131 |
| S004 | P0178 | 131 |

## 4.2 Aging Inventory

### Store Product Days High Stock

|      |       |     |
|------|-------|-----|
| S005 | P0069 | 160 |
| S003 | P0125 | 159 |
| S004 | P0061 | 148 |
| S001 | P0125 | 147 |
| S002 | P0016 | 146 |

### Insight:

The same SKUs may suffer stockouts in one location while accumulating excess in another, indicating poor inter-store balancing.

### Recommendations:

- Establish **inter-store transfer** protocols to redistribute inventory.
- Liquidate aged stock via targeted promotions or markdowns.

## 5. Top vs. Bottom Sellers

TOP 5:-

| ProductID | TotalSold |
|-----------|-----------|
| ProductID | 387209    |
| ProductID | 386805    |
| ProductID | 385843    |
| ProductID | 385583    |
| ProductID | 385137    |

### Bottom 5:-

| ProductID | TotalSold |
|-----------|-----------|
| P0068     | 317668    |
| P0070     | 320229    |
| P0085     | 320272    |
| P0175     | 322461    |
| P0159     | 322605    |

### Insight:

A ~20% gap between top and bottom performers highlights opportunities to optimize less popular SKUs without compromising core revenue drivers.

### Recommendations:

- Deploy **bundle offers** and back-end promotions for underperformers.
- Evaluate phased discontinuation for consistently low-performing products.

## 6. External Influences on Sales

### 6.1 Weather Condition Impact

#### Observation:

- **Sunny/Mild** weather correlates with **2–3×** higher average units sold compared to **Rainy/Snowy/Stormy** conditions.

### 6.2 Holiday Promotions Impact

#### Observation:

- **Holiday promotions** drive **30%+** uplift in average sales versus non-promotional periods.

### Insights:

- Weather and promotional calendars are powerful short-term demand levers.

### Recommendations:

- Integrate **weather forecasts** into staffing and replenishment planning.
- Implement **minimum stock levels** for promotional SKUs and monitor ROI per promotion.

## 7. Seasonality & Category Trends

| Season  | Top Categories          |
|---------|-------------------------|
| Winter  | Apparel, Hot Beverages  |
| Summer  | Cold Drinks, Skincare   |
| Festive | Gifting, Packaged Foods |

**Insight:**  
Season-specific peaks demand nimble stocking strategies; core SKUs maintain stable demand year-round.

- Recommendations:**
- Employ **just-in-time restocking** for seasonal lines.
  - Develop **seasonal demand curves** and align marketing campaigns accordingly.

## 8. Supply vs. Demand Gap Analysis

| ProductID | AvgForecast | AvgSupply | AvgSupplyGap |
|-----------|-------------|-----------|--------------|
| SKU123    | 105         | 65        | +40          |
| SKU987    | 80          | 110       | -30          |

- Insight:**
- **Gap > +30:** risk of lost sales due to under-supply.
  - **Gap < -30:** risk of inventory holding costs and obsolescence.

- Recommendations:**
- Establish **automated alerts** for  $\pm 30$  unit gaps.
  - Fast-track procurement for under-supplied SKUs; use markdowns or bundling for over-supplied stock.

## 9. Executive Summary

- This analysis reveals that inventory health depends on both operational rigor and external demand signals:
- **Replenishment Efficiency:** Half of all SKUs require urgent restocking, signaling a shift from reactive to **predictive** replenishment is critical.
  - **Regional Strengths:** South region's Clothing and Electronics categories lead in turnover, justifying strategic stock realignment.
  - **Inventory Imbalances:** The juxtaposition of stockouts and overstock across locations underscores the need for dynamic **inter-store transfers** and centralized visibility.

- **Demand Drivers:** Weather variations (2–3× sales swings) and holiday promotions (30%+ uplift) demand integration of external data streams into planning.
- **Forecast Accuracy:** Implementing  $\pm 30$  unit gap alerts will proactively address supply-demand mismatches.

#### **Strategic Next Steps:**

1. Deploy **advanced analytics** for weather and seasonal demand forecasting.
2. Automate **real-time alerting systems** for demand-supply gaps.
3. Optimize **promotional planning** to balance volume growth with margin preservation.
4. Strengthen **inter-store logistics** to eliminate regional imbalances.