Retail Sales & Inventory Analysis Report

# 1. Executive Summary

This report outlines the development and insights derived from a Power BI dashboard created for a retail business. It focuses on sales trends, product performance, and inventory optimization using CSV data sources and DAX-based KPIs. The analysis enables better decision-making regarding stock levels, product categorization, and store profitability.

# 2. Data Sources & Modeling

Three CSV files were used as the source:  
- products.csv: Contains product\_id, product\_name, category, price  
- sales.csv: Contains sale\_id, product\_id, quantity\_sold, sale\_date, store\_location  
- inventory.csv: Contains inventory\_id, product\_id, quantity\_in\_stock, last\_updated  
  
These were imported into Power BI and related via product\_id. Appropriate data types were set and cleaned using Power Query.

# 3. Dashboard Page 1: Sales Analysis

This page provides an overview of total revenue, units sold, store count, and category performance.  
Visuals include:  
- Line Chart: Monthly sales trend  
- Bar Chart: Top 10 products by revenue  
- Donut Chart: Revenue by category  
- Map/Column Chart: Store location performance  
  
DAX measures such as Total Revenue, Units Sold, and Average Order Value were used.

# 4. Dashboard Page 2: Total Revenue & AVg order value by day

Observations:

Highest Revenue: June 1 (₹10.4K), June 30 (₹9.7K)

Highest AOV: June 11 (₹342), June 22 (₹316)

Revenue & AOV both dipped on June 6 and June 20

### 🔹 Page 3: Inventory Dashboard

- Low Stock Alerts

- Inventory Turnover Ratio

- Turnover ratio is best in Grocery segment

# 5. DAX Measures Used

- Total Revenue = SUMX(Sales, Sales[quantity\_sold] \* RELATED(Products[price]))  
- Total Units Sold = SUM(Sales[quantity\_sold])  
- Average Inventory = AVERAGE(Inventory[quantity\_in\_stock])  
- Inventory Turnover = DIVIDE([Total Units Sold], [Average Inventory], 0)  
- Days Since Last Sale = DATEDIFF(MAX(Sales[sale\_date]), TODAY(), DAY)

# 6. Key Business Insights

- A few products grocery contribute to over 80% of revenue.  
- Certain products have not sold in the past 15 days and are running low on stock.  
- Some locations outperform others in total sales.  
- Inventory turnover varies widely; some products are underperforming.

# 7. Recommendations

- Restock high-selling grocery products regularly.  
- Reduce or replace slow-moving C-category products.  
- Monitor stockout risks closely to prevent lost sales.  
- Focus promotions on high-performing categories and locations.

# 8. Tools & Technologies

- Power BI: Visualization & dashboard  
- DAX: KPIs and calculated measures  
- Power Query: Data transformation  
- CSV files: Structured input data  
- SQL (initially considered): Used for logic planning