

Retail Sales and Inventory Analysis Report

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Introduction

This report provides an overview of retail sales and inventory performance using Tableau visualizations and Python analysis. The dataset consists of retail transaction and inventory data, focusing on sales, profit, and inventory days across various categories, regions, and products.

Tools Used

- Python (Pandas for data merging and correlation analysis)
- Tableau Public for interactive dashboard and visualization

Steps Involved

1. Loaded two CSV files: one containing inventory details and another for transaction records.
2. Merged the datasets on Product_ID to create a unified view.
3. Calculated correlation between Inventory Days and Profit.
4. Created Tableau dashboard with charts for Category vs Total Sales, Region vs Profit, and a treemap of product-wise performance.
5. Analyzed seasonal trends using line graphs.

Key Insights

- West region shows the highest profit among all regions.
- Clothing category leads in both total sales and inventory days.
- A negative correlation of approximately -0.1394 was observed between Inventory Days and Profit, suggesting higher inventory days may slightly reduce profitability.
- Product-wise performance varies significantly, as visualized in the treemap.

Conclusion

The Tableau dashboard and Python analysis provide a detailed overview of inventory efficiency and regional/category sales trends. This can help stakeholders optimize stock levels, improve profitability, and tailor sales strategies based on data-driven insights.