

# Retail Business Performance & Profitability Analysis

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## Introduction

This project aims to analyze the performance and profitability of a retail business using the Global Superstore dataset. The focus is to uncover profit-draining product categories, identify regional sales trends, and improve inventory and sales strategies.

## Abstract

The dataset contains sales transactions, including product details, regions, order dates, profits, and shipping information. Using Python (via Google Colab), we performed data cleaning, exploratory analysis, and visualizations. The findings were further presented using a Tableau dashboard with interactive filters for Region, Category, and Year.

## Tools Used

- Python (Pandas, Matplotlib) — for data exploration
- Google Colab — as the development environment
- Tableau Public — for interactive dashboard
- GitHub — for final submission

## Steps Involved

### 1. Data Loading and Cleaning

- Imported the Global Superstore CSV into Google Colab
- Handled encoding issues using 'latin1'
- Checked for nulls, data types, and column distributions

### 2. Exploratory Analysis in Python

- Analyzed total sales and profits by region and category
- Created bar charts for visual interpretation
- Measured correlation between Quantity, Sales, and Profit

### 3. Dashboard Creation in Tableau

- Created visual sheets for:
  - Sales by Region
  - Profit by Category/Sub-Category
  - Monthly Sales Trend

- Added filters for Region, Category, and Order Year
- Exported dashboard as .png for inclusion in final report

## Conclusion

Key insights revealed that some sub-categories like “Tables” and “Bookcases” often yield negative profits despite high sales volumes. Central and West regions performed best in terms of total profit. These insights can help optimize pricing and inventory decisions. The interactive Tableau dashboard allows users to explore these trends with flexible filters.

## Future Improvements

- Integrate SQL-based profit margin calculations
- Add time-series forecasting for seasonal trends
- Incorporate customer segmentation for targeted strategies

## Submitted Files

- Retail\_Analysis\_Report.pdf
- Retail\_Analysis\_Notebook.ipynb
- Tableau\_Dashboard.png