

# Superstore Sales & Profitability Analysis

## A Data-Driven Business Insights & Recommendations Report

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**Organization/Portfolio:**

Independent Project

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**Tools & Techniques Used**

- SQL
- Python (Pandas, Seaborn, Matplotlib)
- Jupyter Notebook

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## Introduction

This report presents an in-depth analysis of the Superstore dataset, combining Python (Pandas, Seaborn, Matplotlib) and SQL for data cleaning, exploratory data analysis (EDA), and visualization.

The objective of this project is to derive actionable insights into sales, profitability, customer behavior, regional performance, and discount policies. The findings aim to support strategic decision-making around pricing, marketing, operations and logistics.

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## Executive Summary

- Technology category drives the highest profit margins.
- Furniture (tables, bookcases) generates high sales but suffers from negative profit.
- Four sub-categories (Chairs, Phones, Storage, Binders) contribute 54% of total revenue.
- Excessive discounts ( $\geq 30\%$ ) lead to consistent losses across categories.
- 20% of customers contribute ~87% of profit (Pareto principle).
- The West region is the most profitable, accounting for 34% of overall profit.
- South region shows inefficiencies in pricing, discounts, and logistics.
- Quarter 4 (Nov–Dec) shows high sales but margins shrink due to heavy discounting.
- Standard class shipping is most popular, but same-day/first-class drive higher profit margins.
- Several products (e.g., Tables, Bookcases) remain unprofitable despite strong demand.

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## Detailed Insights

### Category & Product Performance

- Technology = high profit.
- Furniture = high sales but negative profitability.
- Discount >30% = unprofitable in all categories.

### Customer Behavior

- 20% customers = 87% profit.
- Home Office segment = lowest profit contributor.

### Regional Trends

- West = highest profit (34% of total).
- South = least profitable → requires discount/logistics review.
- East = high sales, low margin.
- West Virginia = only state with negative profit margin.

### Seasonality

- Q4 (Oct–Dec) = highest sales, low margins due to discounts.
- Feb = off-season, but highest YoY growth.
- Sep = lowest YoY growth.

### Shipping Modes

- Standard Class = most used, but low margins.
  - Same-day & First-class = better profitability.
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## Recommendations

### 1. Revise Discount Policy

- Keep discounts  $\leq 20\%$  to reduce losses.
- For *Office Supplies* (Storage, Supplies), limit discounts  $< 15\%$ .
- Use targeted promotions in Technology.

### 2. Customer Strategy

- Launch loyalty programs for top 20% customers.
- Personalized offers to retain high-value customers.

### 3. Regional Strategy

- Expand operations in West region.
- Optimize logistics and pricing in South.
- Improve Home Office segment across all regions.

### 4. Shipping Optimization

- Reduce discounts in Standard Class.
- Encourage profitable same-day/first-class shipping.

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## Conclusion

This analysis identifies profitability gaps and growth opportunities within Superstore operations. By revising discount strategies, strengthening logistics, and focusing on top customers, the company can achieve higher profitability, customer retention, and operational efficiency.

The findings in this report provide a clear roadmap for decision-making, ensuring Superstore's growth remains sustainable and competitive.