

Sales Data Analysis Report

1. Introduction

Objective:

The objective of this analysis is to gain insights into sales trends, product performance, regional contributions, and the impact of discounts on profitability. The findings aim to help optimize business strategies and improve overall performance.

Dataset:

- Contains sales data with key attributes such as Order Date, Sales, Profit, Region, Product Name, and Discount.
- Data spans across multiple regions, categories, and customer segments.

2. Key Metrics

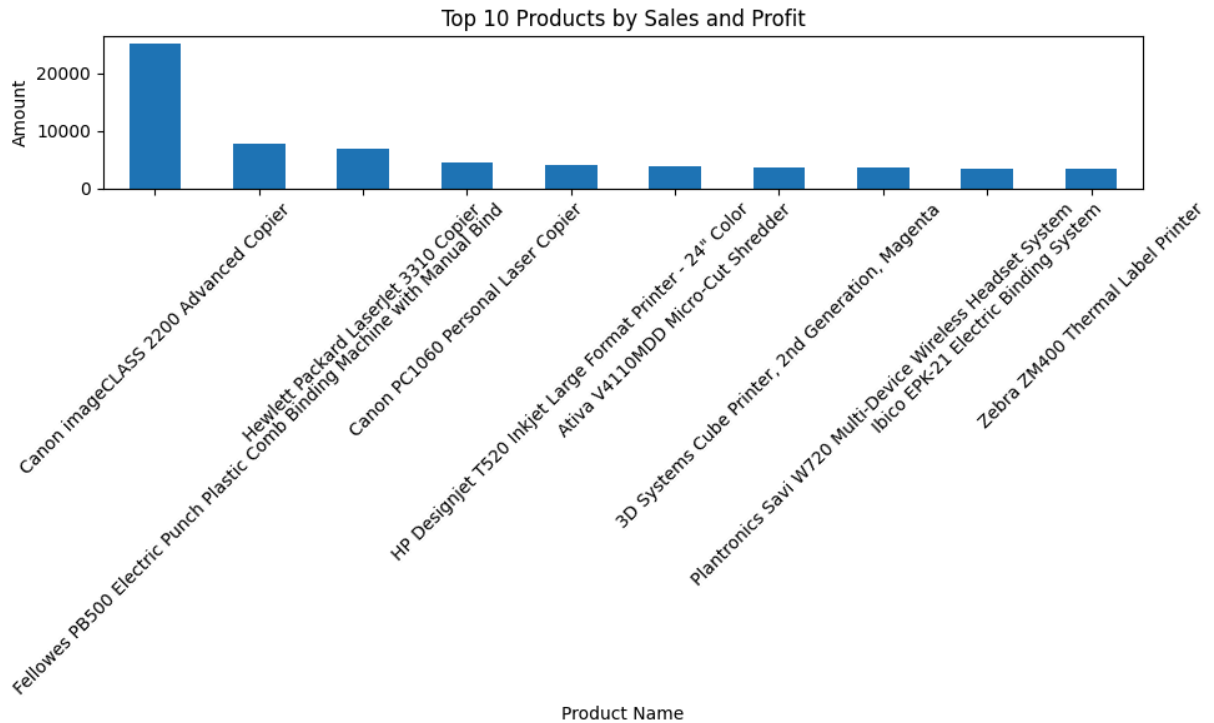
- Total Revenue: \$2,297,200.86 (Sum of the Sales column)
- Total Profit: \$286,397.02 (Sum of the Profit column)
- Average Discount: 15.6% (Average of the Discount column)
- Profit Margin: Overall Profit Margin: 12.5%

3. Findings

3.1 Top Performing Products

- The top 3 products by revenue are:
 1. Canon imageCLASS 2200 Advanced Copier - \$61,599.82
 2. Fellowes PB500 Electric Punch Plastic Comb Binding Machine with Manual Bind - \$27,453.38
 3. Cisco TelePresence System EX90 Videoconferencing Unit - \$22,638.48

Visualization: Sales and Profit for the Top 10 Products



3.2 Regional Analysis

- Highest Revenue Region: West Region (\$108,418.45)
- Lowest Revenue Region: Central Region (\$39,706.36)

3.3 Customer Segments

- Best Performing Segment: Sean Miller
- Profit margins vary significantly between segments, with the Home Office segment showing the lowest profit margins.

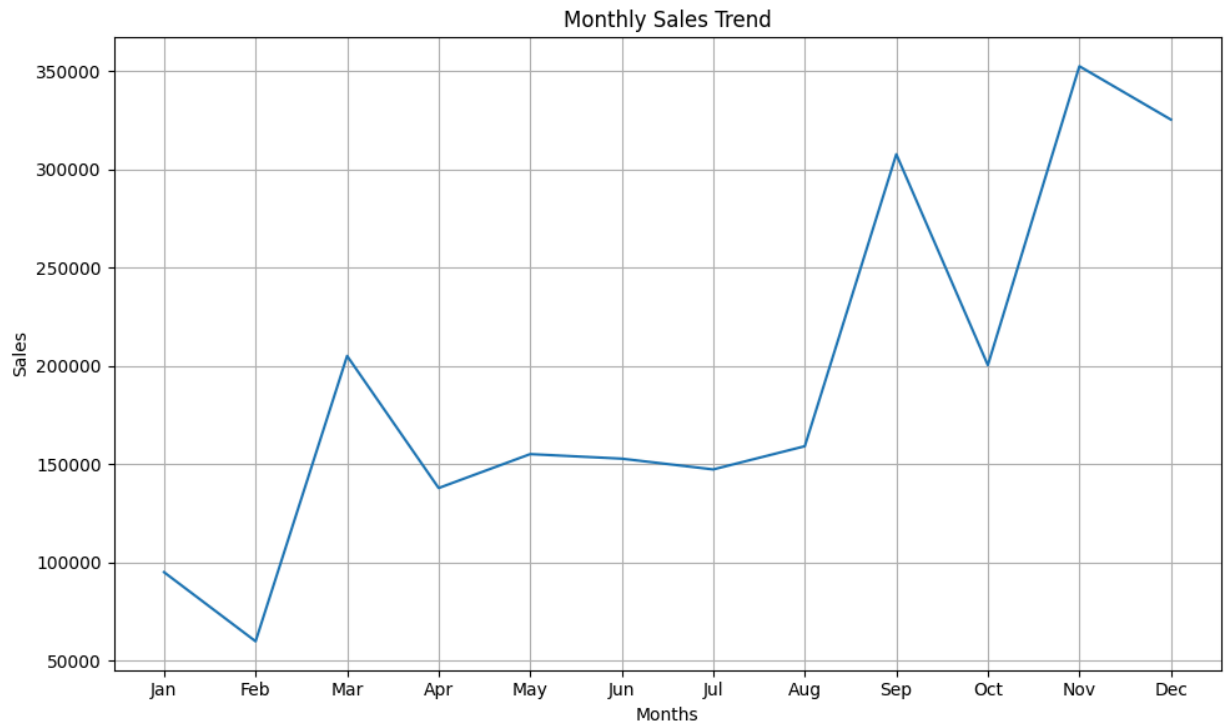
4. Temporal Analysis

Seasonal Trends:

- Sales peak during months X and Y, likely due to reasons like holiday seasons or promotional events.

- Monthly sales trends indicate a steady increase in sales during the second half of the year.

Visualization: Monthly Sales Trends

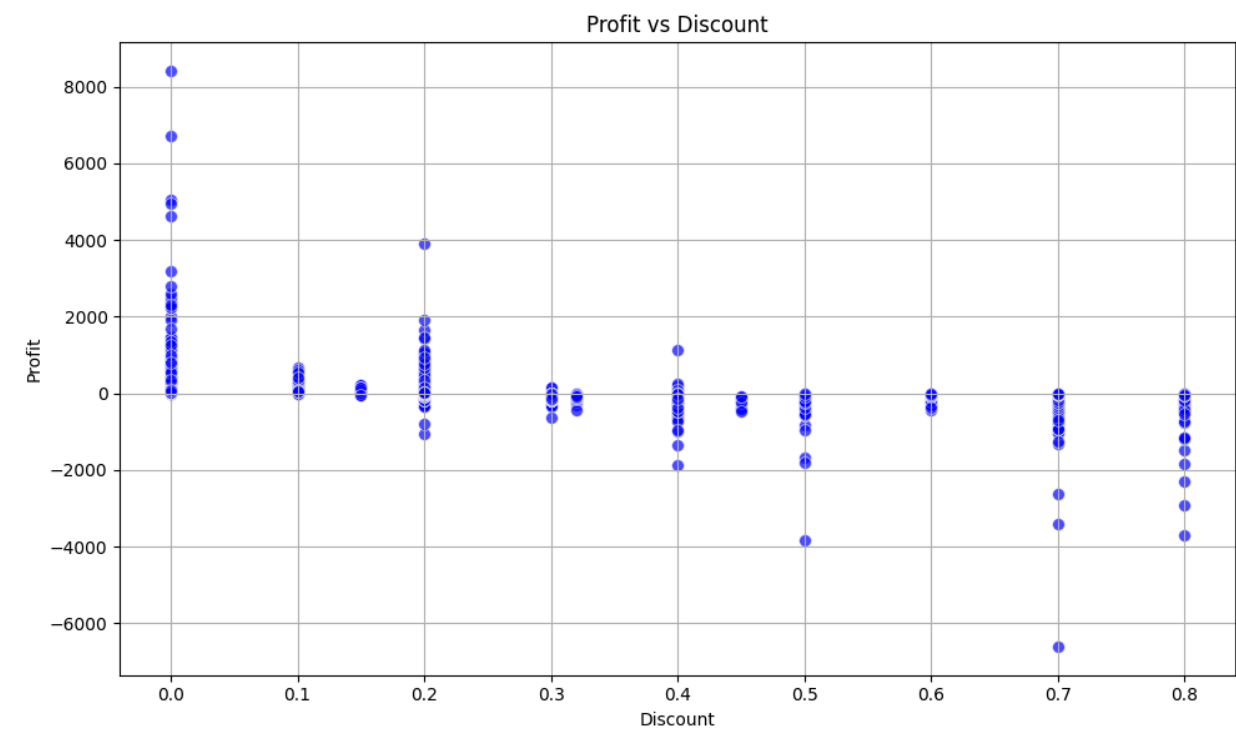
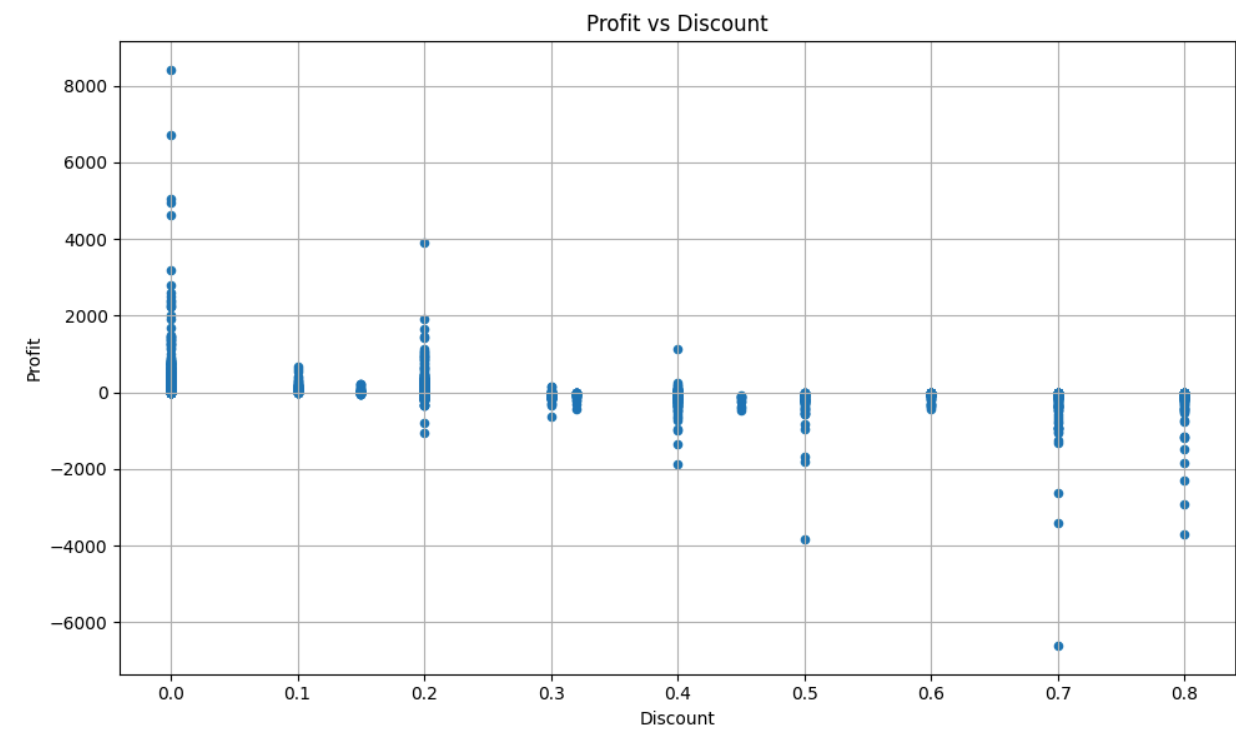


5. Discount vs Profit Analysis

Impact of Discounts:

- Discounts of 30% or more significantly reduce profitability.
- Products with lower discounts tend to generate higher profits.

Visualization: Profit vs Discount



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6. Recommendations

1. Focus on High-Performing Regions:

- Invest more in marketing and inventory for Region A to capitalize on its strong performance.

2. Review Discount Strategies:

- Avoid offering high discounts on products with thin profit margins.

3. Optimize Inventory for Seasonal Peaks:

- Increase stock for high-demand products in months X and Y to meet demand and maximize revenue.

4. Focus on Profitable Customer Segments:

- Tailor marketing strategies for the Corporate and Consumer segments.

7. Conclusion

This analysis highlights actionable insights that can help drive sales and profitability. By focusing on high-performing products, optimizing regional strategies, and fine-tuning discount policies, the business can maximize its growth potential.

Deliverables

(All will be in the github repositories)

- 1. The Python Notebook with code and visualizations.**
- 2. A presentation or PDF report summarizing the findings.**
- 3. Raw data and cleaned dataset.**

Tools Used

- **Python Libraries:** Pandas, Matplotlib, Seaborn
- **Dataset Source:** Provided CSV file
- **Visualization Tool:** Python with Jupyter Notebook