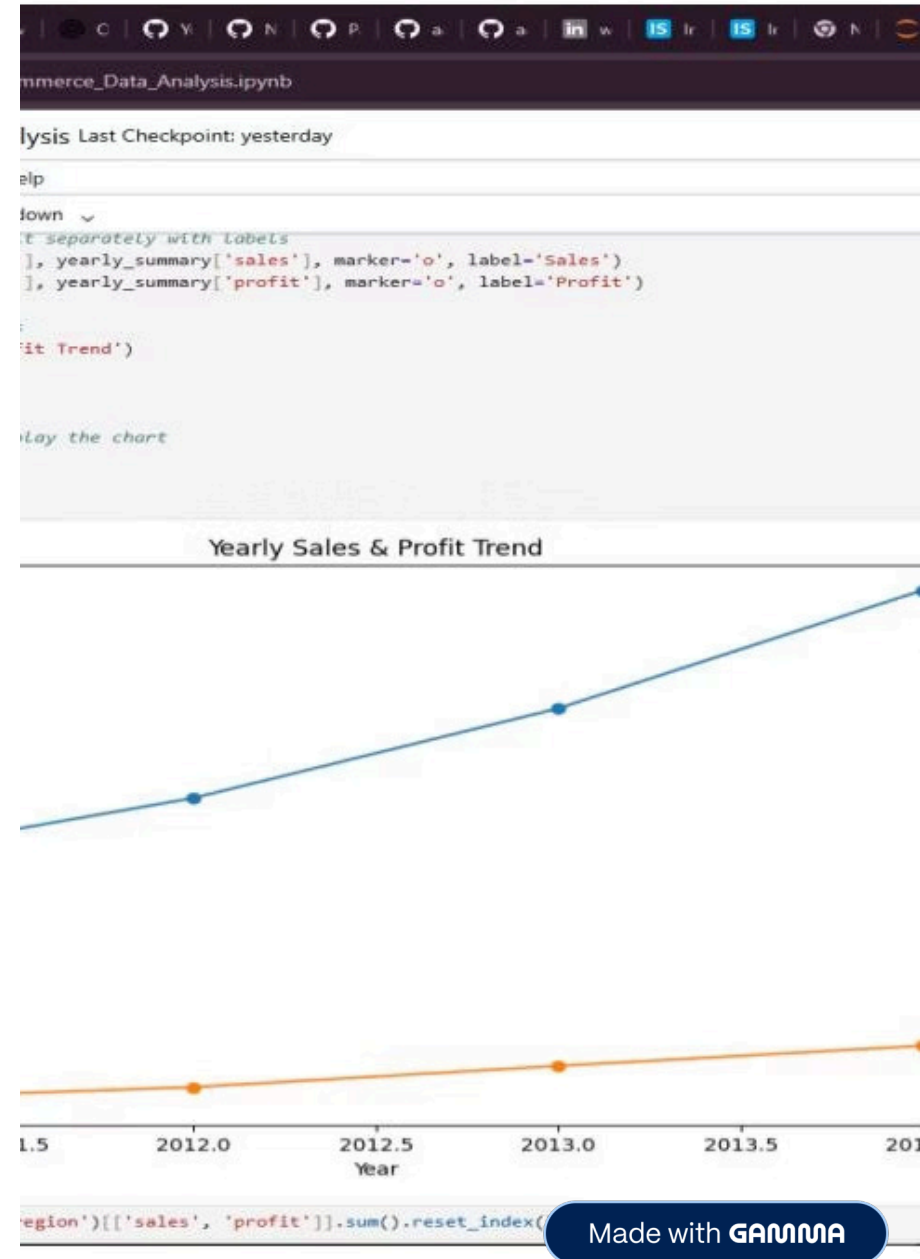# Ecommerce Data Analysis

Uncovering insights from sales performance, profitability, customer behavior, and regional trends to drive strategic business decisions.

Project Overview

Objective

Analyze e-commerce sales data to uncover actionable insights related to sales performance, profitability, customer behavior, and regional trends.

Tools Used

Python was leveraged for comprehensive data analysis, visualization, and statistical modeling to extract meaningful patterns.

Sales Performance by Segment

Customer segmentation reveals clear patterns in purchasing behavior and revenue generation across different market categories.
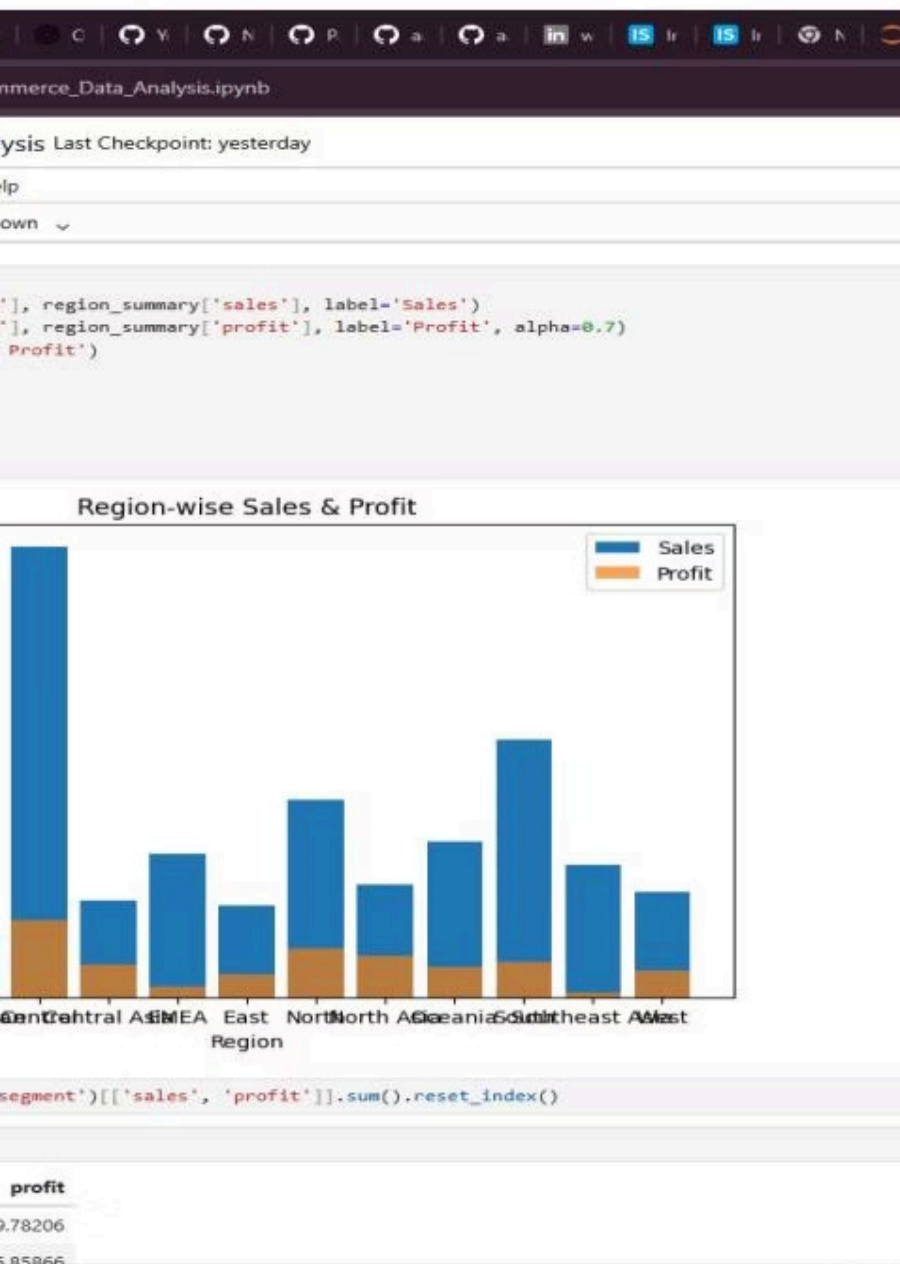
Consumer Segment

Highest sales recorded, representing the largest revenue driver for the business.

Corporate Segment

Second-highest contributor with consistent B2B purchasing patterns.

Home Office

Smallest segment but showing growth potential in remote work era.

Regional Profit Analysis

West Region

Contributed the most profit compared to all other regions, indicating strong market presence and customer engagement.

Other Regions

Opportunities exist to replicate West region strategies in underperforming areas to boost overall profitability.
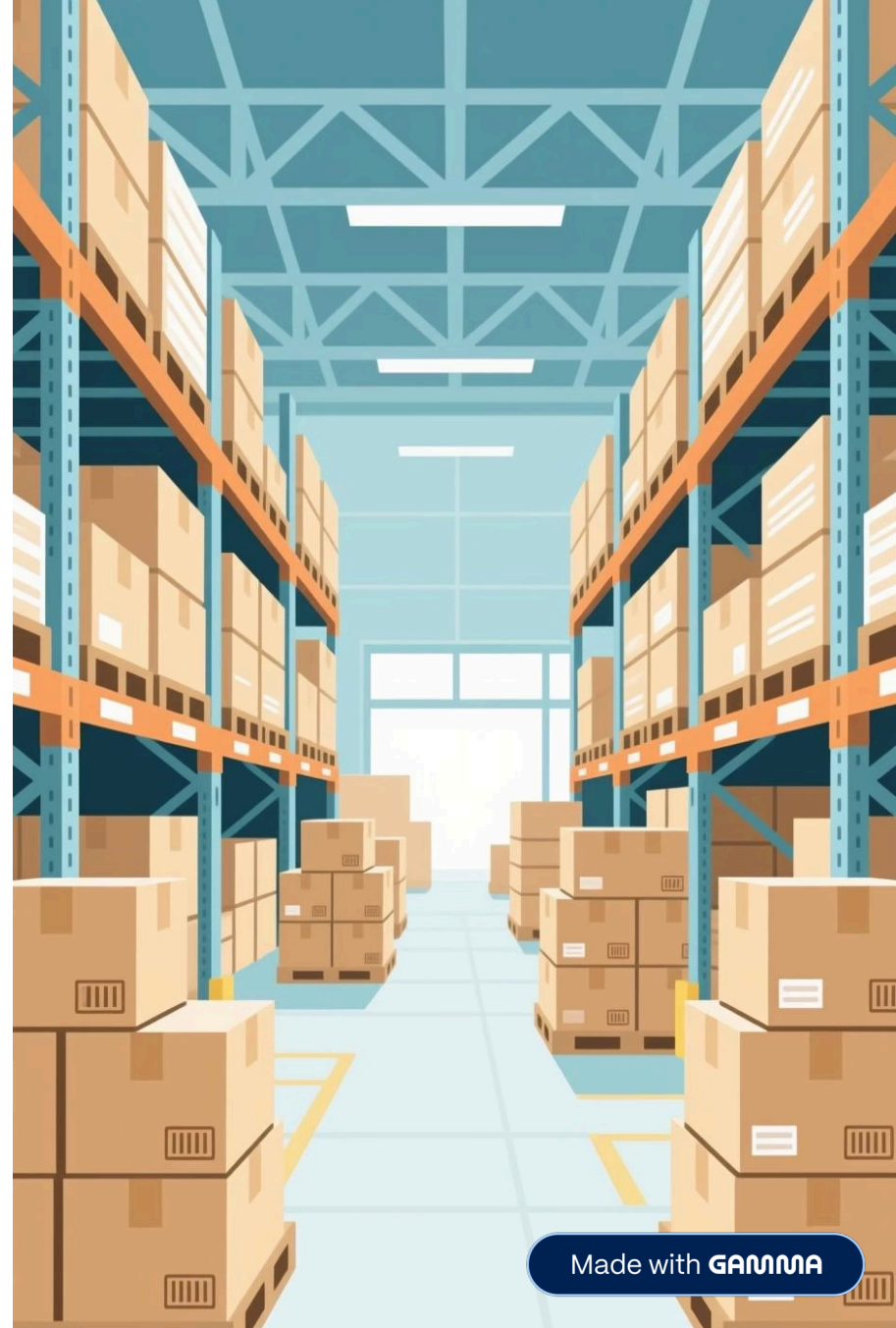
Shipping Cost & Profit Correlation

0.35

Correlation Coefficient

Positive relationship between shipping cost and profit

A positive correlation of **0.35** was found between shipping costs and profit margins. This suggests that higher shipping investments may correlate with premium products or faster delivery options that customers value.

Top Customer Revenue Drivers

The top 10 customers generated maximum revenue with consistent purchasing trends, demonstrating strong customer loyalty and repeat business patterns.

🏆 High–Value Customers

Elite group driving significant revenue through frequent, high-ticket purchases.

🔁 Consistent Patterns

Regular purchasing behavior indicates strong satisfaction and brand loyalty.

🎯 Strategic Focus

Retention strategies should prioritize these valuable customer relationships.
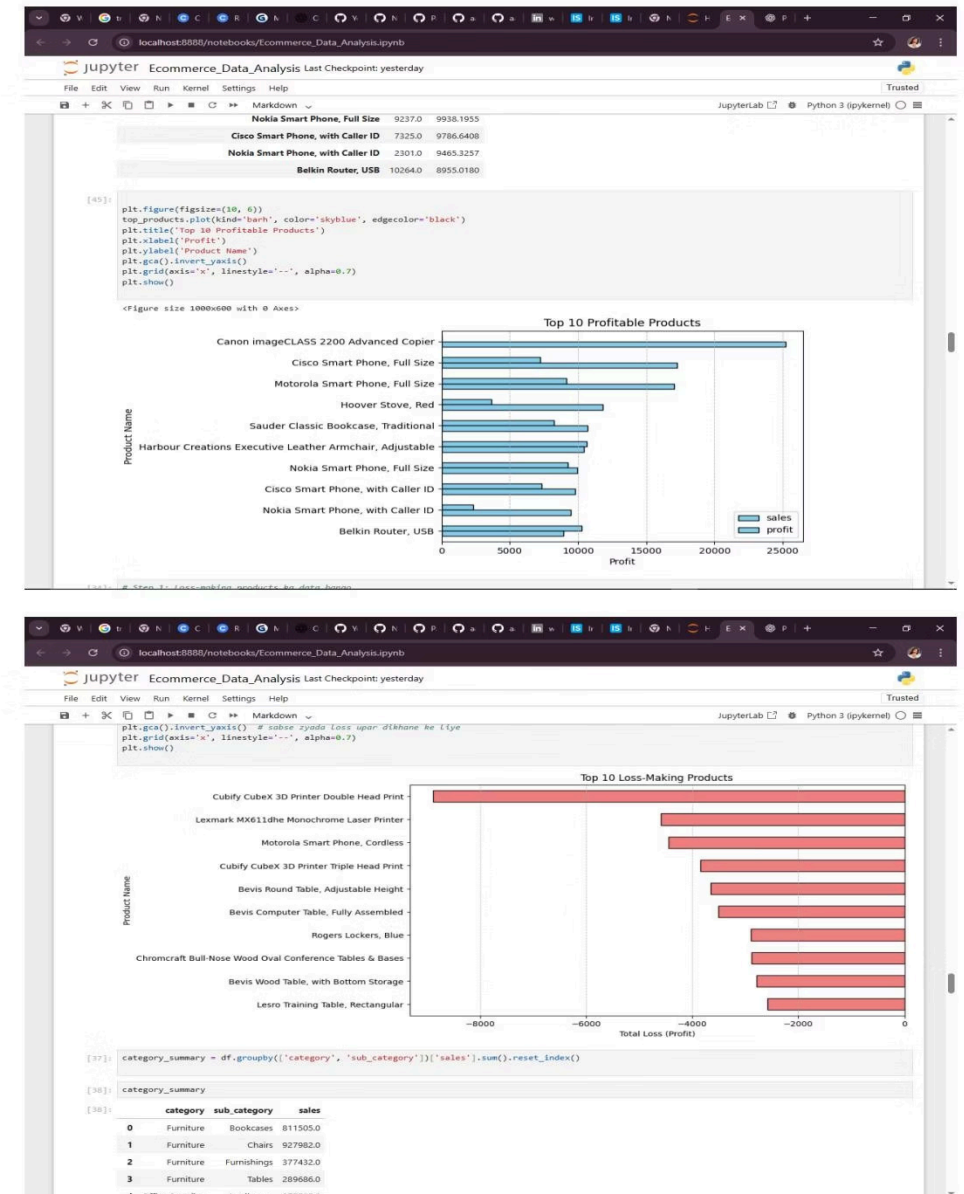
Product Performance Challenges

Loss-Making Products Identified

Analysis revealed certain products generating losses, requiring immediate attention to understand root causes.

- Discount strategies may be too aggressive

- Pricing models need reassessment

- Cost structures require optimization

Further investigation required to understand discount structures, supplier costs, and pricing strategies for underperforming products.

Key Findings Summary

01

Segment Leadership

Consumer segment dominates sales, followed by Corporate and Home Office.

02

Regional Strength

West region leads in profitability across all geographic areas.

03

Shipping Insights

Positive correlation (0.35) between shipping costs and profit margins.

04

Customer Value

Top 10 customers drive maximum revenue with consistent purchasing.

05

Product Concerns

Some products are loss-making, requiring pricing and discount review.

Strategic Recommendations

Optimize Marketing

Focus campaigns on high-performing segments and replicate West region success.

Improve Product Strategy

Address loss-making products through pricing adjustments and discount optimization.

Boost Profitability

Leverage customer insights and regional trends to maximize revenue growth.

Made with GAMMA

Actionable Insights Drive Success

The analysis provided comprehensive insights into customer behavior, product performance, and regional sales trends. These data-driven findings enable strategic optimization of marketing efforts, product strategies, and profitability initiatives.

Implement Strategies | **View Full Report**