



Sales Performance Analysis

Evaluating retail superstore performance through data-driven insights



PROJECT OVERVIEW

Unlocking Sales Intelligence

The Challenge

Analyze 7,148 transactions across multiple years to identify revenue trends, profitability drivers, and operational efficiency opportunities.

The Approach

Python for data prep, SQL for analytics, Power BI for visualization —enabling data-driven decisions for growth.

Data Foundation

7,148

Total Rows

Transaction records analyzed

23

Data Columns

Comprehensive attributes

0

Missing Values

Clean, analysis-ready data

Order Details

ID, dates, priority, shipping

Customer Data

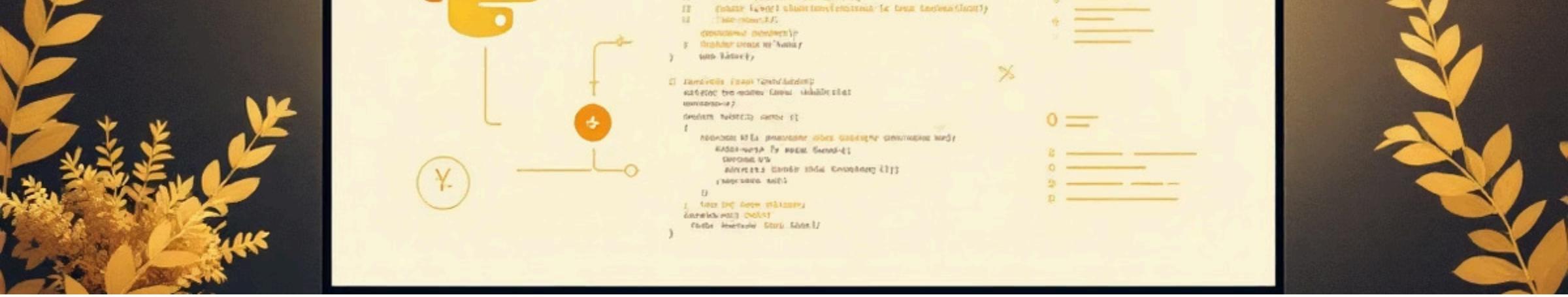
Names, segments, geography

Product Info

Categories, sub-categories, IDs

Sales Metrics

Revenue, quantity, discounts, profit



PYTHON

Data Preparation Pipeline

01

Data Loading

Imported dataset using Pandas, inspected structure with df.info() and .describe()

02

Date Formatting

Converted to datetime, extracted year, month, day for time-based analysis

03

Feature Engineering

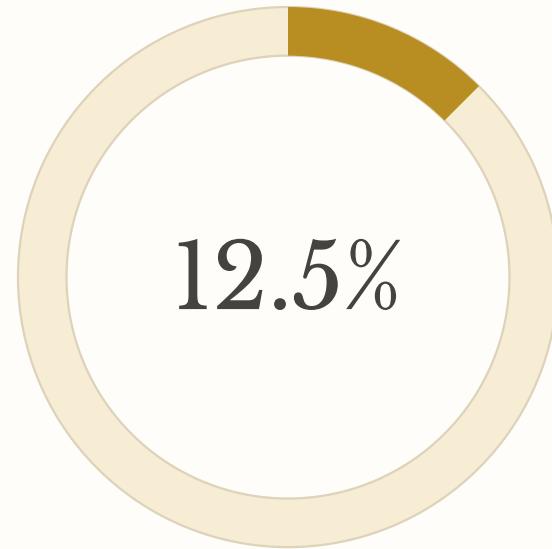
Created shipping_days and profit_margin columns with safe calculations

04

Validation

Verified data types, handled outliers, confirmed readiness for SQL analysis

Key Business Metrics

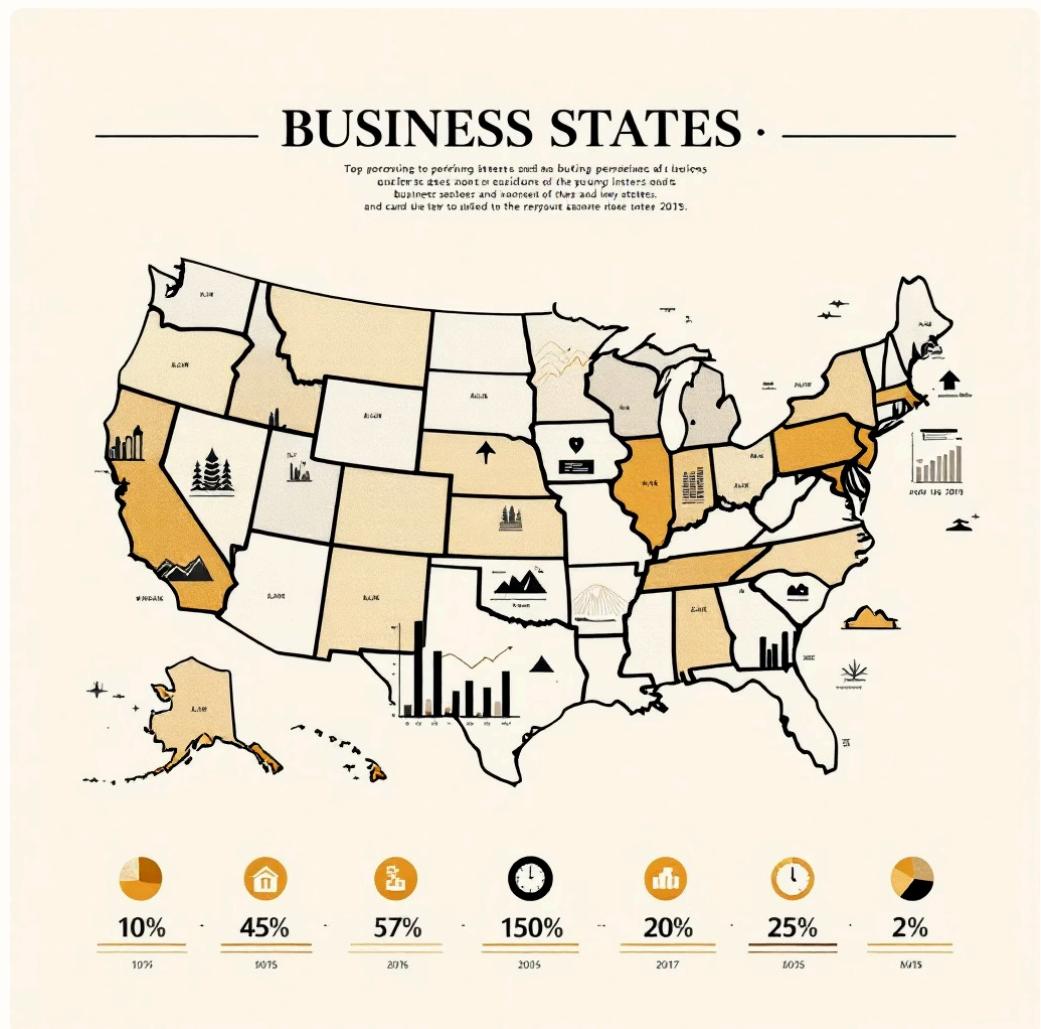


Avg Profit Margin

Overall business profitability

Top 5 States by Sales

1. California – highest revenue
2. New York – strong performance
3. Texas – consistent growth
4. Washington – emerging market
5. Pennsylvania – stable contributor





Shipping & Customer Insights

Ship Mode Performance

- Standard Class: 5 days avg
- Second Class: 3 days avg
- First Class: 2 days avg
- Same Day: <1 day

Customer Segments

Consumer: Most profitable segment

Corporate: Strong contributor

Home Office: Smallest share

Profitability Challenges

Negative Profit Orders

Multiple transactions resulted in losses—requires immediate investigation of pricing and discount strategies

Discount Impact

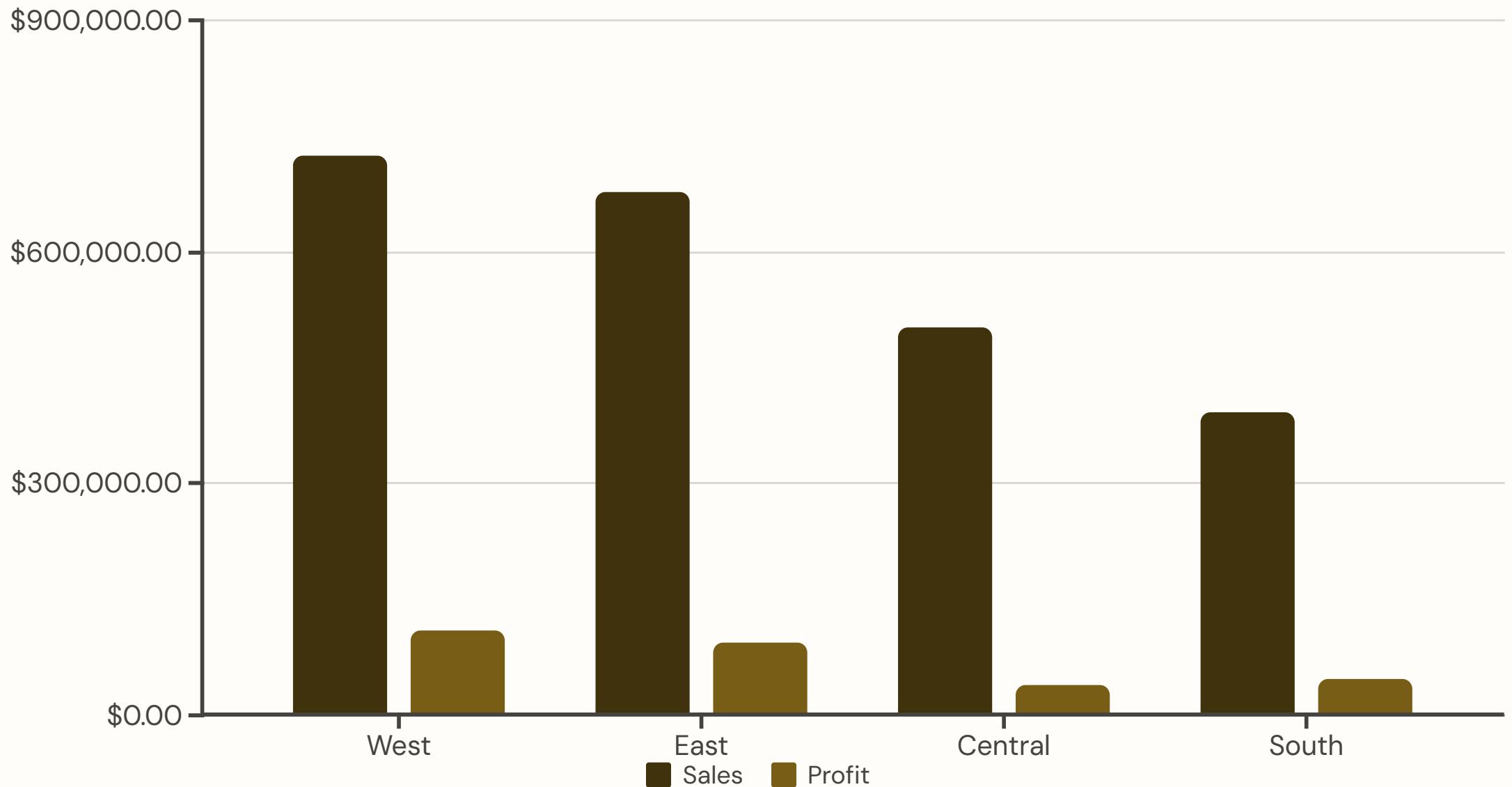
Higher discount levels correlate with lower average profit—need balanced promotional approach

High Priority Fast Shipping

Orders marked high priority and shipped within 3 days show varied profit margins—evaluate if speed justifies cost



Regional Performance

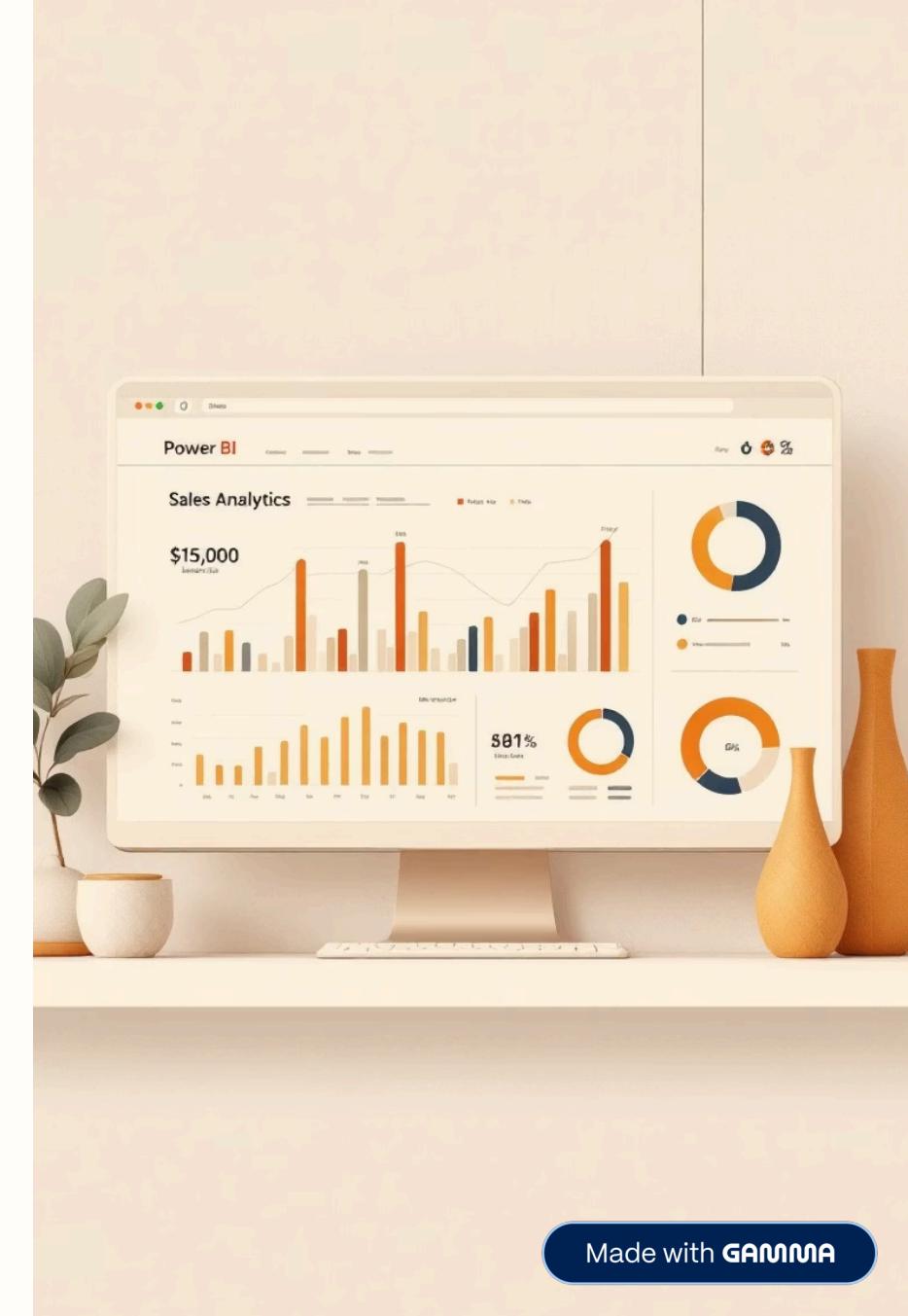


West and East regions drive majority of sales and profit—Central shows lower profit margin despite solid sales volume



Interactive Dashboard

Comprehensive visualization enabling real-time monitoring of sales trends, regional performance, customer segments, and profitability metrics



Strategic Action Plan

1

Optimize Discounts

Reduce high discounts on low-margin products, focus promotions on profitable categories

2

Regional Focus

Increase inventory and marketing in high-performing regions

3

Shipping Efficiency

Promote Standard/Second Class to balance delivery time and cost

4

Segment Strategy

Personalized offers for Consumer and Corporate segments

5

Product Prioritization

Highlight top-selling, high-margin products in campaigns