DISCOUNT OPTIMIZATION STRATEGY

Using retail supermarket sales data to optimize discounts and maximize profitability

Presented By:
FATIMA OLASUNKANMI-OJO

METHODOLOGY AND DATA SOURCES

Data Analysis

Dataset Details

- **Source:** Kaggle Superstore Dataset
- **Records:** 9,994 transactions
- **Units Sold:** 38,000 products
- **Total Sales:** $2.30 million
- **Categories:** Furniture, Office Supplies, Technology
- **Regions:** Central, East, South, West
- **States:** Full US coverage (48 states)

Analytical Techniques

- **Discount Segmentation:** Created 5 discount range bins (0-5%, 5-10%, 10-15%, 15-20%, 25%+)
- **Profitability Analysis:** Calculated profit margin % for each segment
- **Category Comparison:** Average discount and margin by product category
- **Geographic Analysis:** Regional and state-level profit distribution
- **Trend Identification:** Correlation between discount % and profitability
- **Threshold Detection:** Identified 15% as critical inflection point

Tool Used

Power BI

Interactive dashboard, visualizations

EXECUTIVE SUMMARY

The Opportunity at a Glance

Total Sales
$2.3M

Total Profit
$286.4K

Total Quantity Sold
38K

Profit Margin
12%

Average Discount
15.6%

⚠️ Critical Finding

Analysis of **9,994 transactions** reveals that excessive discounting is decreasing **potential profit**. Discounts **over 20%** systematically destroy margins, particularly in the furniture category.

🎯 The Opportunity

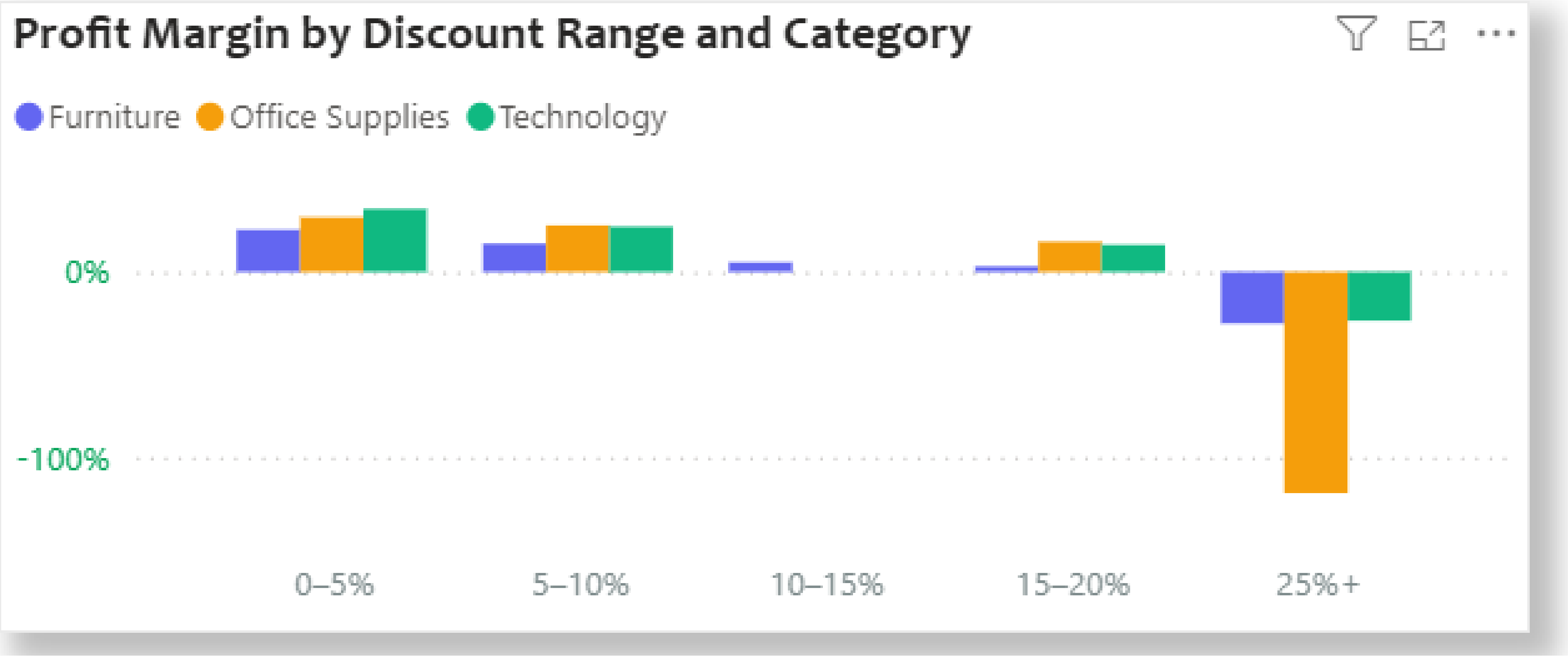
While discounts can boost sales, excessive reductions after margins. The Superstore dataset reveals opportunities to apply targeted discounts that drive conversions without reducing profit levels

THE PROBLEM: PROFIT LEAKAGE THROUGH DISCOUNTING

When More Discounts = Less Profit

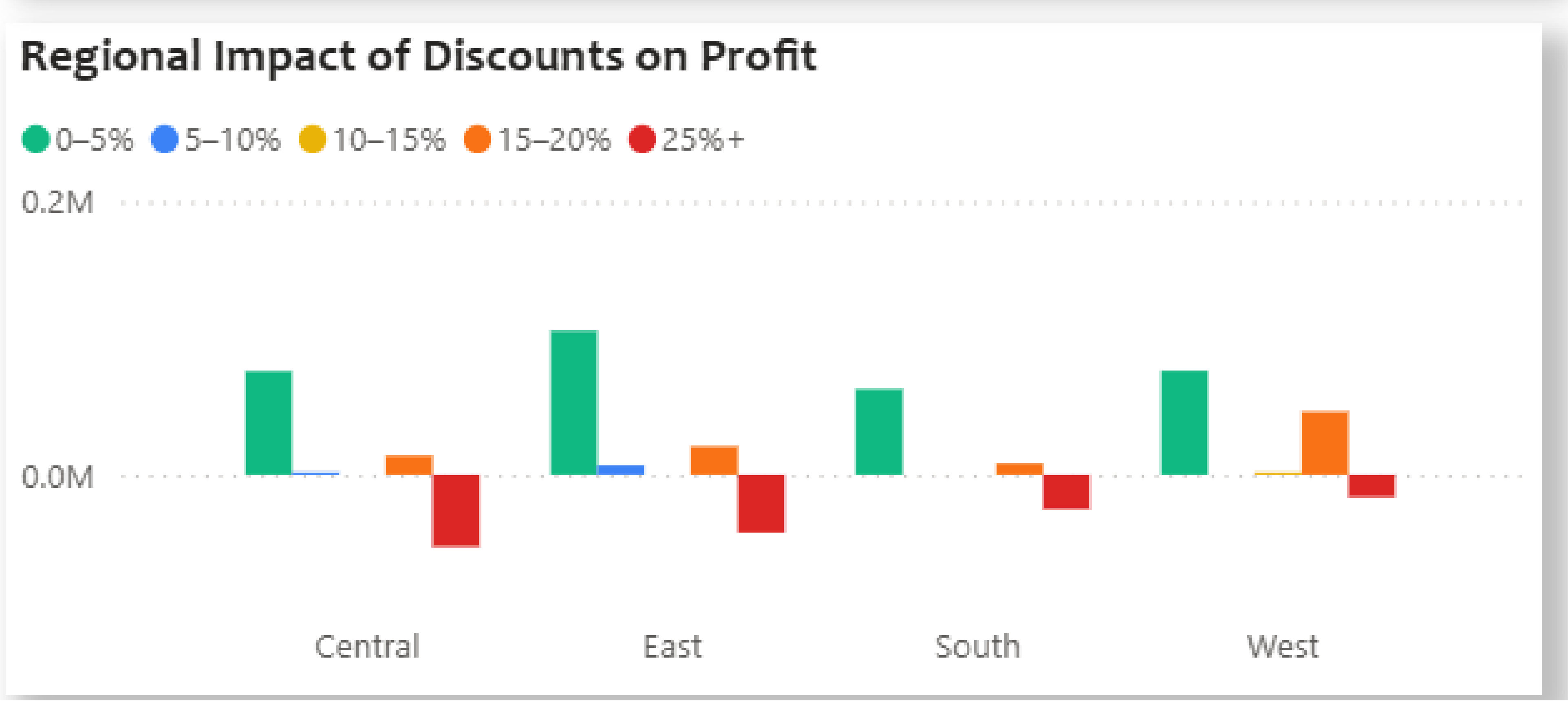
CURRENT SITUATION

- **38,000 units** sold across three categories
- **21% of orders** have discounts over 20%
- **Furniture category** averaging 18% discounts
- **Profit margin** stuck at 12% despite high sales volume



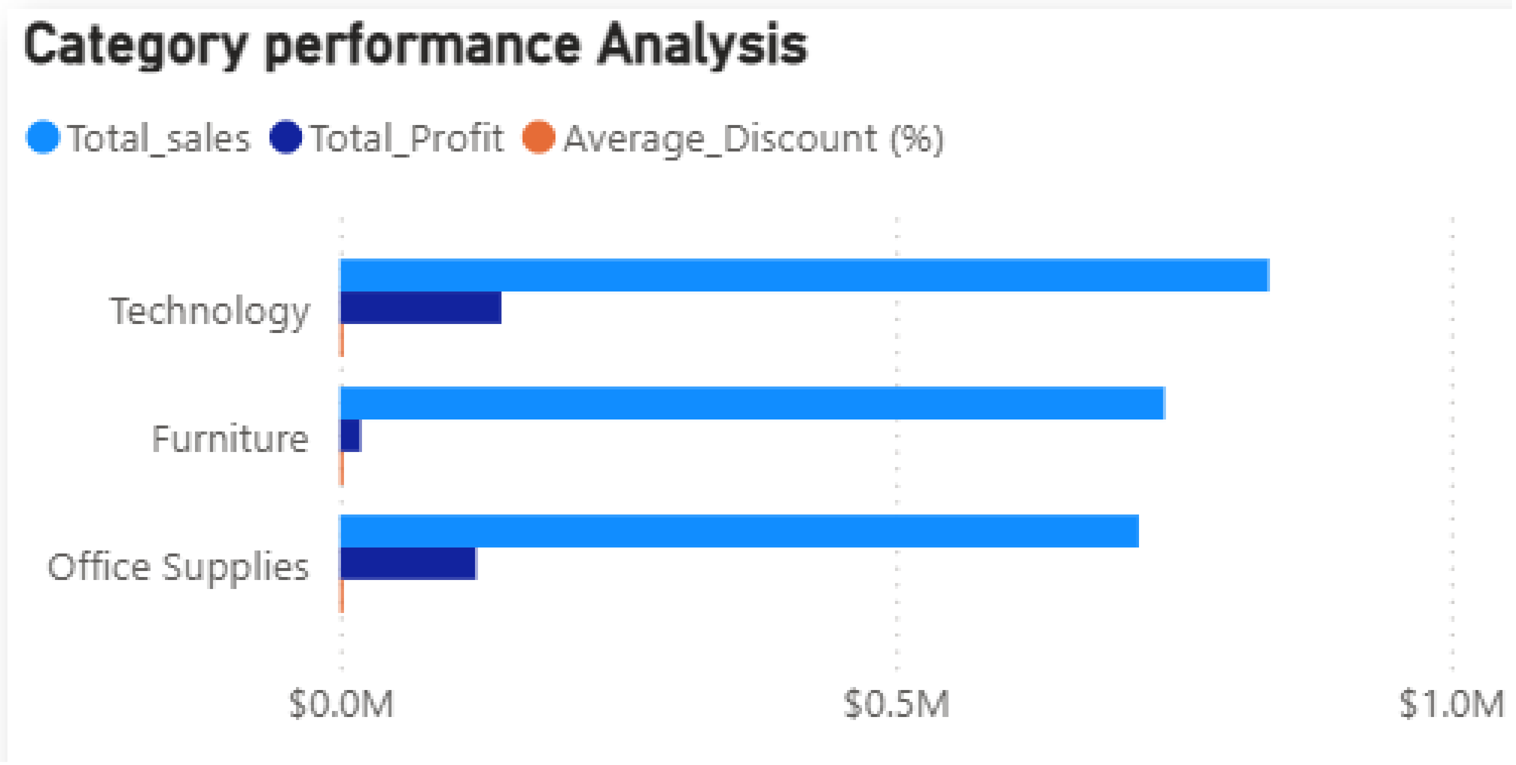
Critical Issue

Orders with 25%+ discounts generate **negative margins**, effectively paying customers to buy from us.



CATEGORY PERFORMANCE ANALYSIS

Data Shows Clear Priorities



Category	Total Sales	Total Profit	Avg Discount	Profit Margin	Status
Technology	$836,000	$145,000	14%	18.5%	✓ Excellent
Office Supplies	$719,000	$122,900	16%	12.3%	⚠ Moderate
Furniture	$742,000	$18,500	18%	2.5%	✗ Critical

✓ Technology: Best Practice

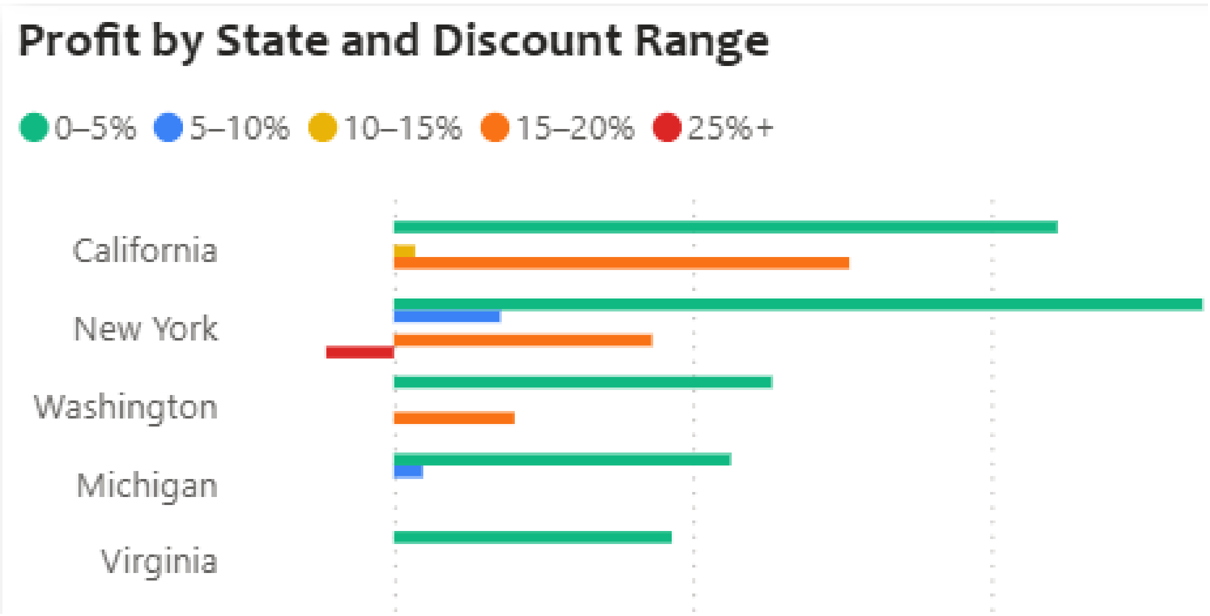
Current strategy works well. Technology products have higher margins that tolerate moderate discounting. Maintain 14% average with flexibility up to 18%.

✗ Furniture: Urgent Action Required

$742K sales but only $18.5K profit! Reduce average discount from 18% to 8-10%. Expected impact: +$78,000 annual profit (325% improvement).

GEOGRAPHIC PERFORMANCE ANALYSIS

Patterns Reveal Best Practices



Analysis Overview

This report analyzes the **"Profit by State and Discount Range"** visualization to identify geographic performance disparities and quantify optimization opportunities. The analysis reveals that top-performing states (New York, California, Washington) generate **2-3x more profit** than underperformers through disciplined discount practices.

By standardizing discount policies to match California's proven model—where 65% of transactions occur at 0-5% discount levels—the organization can unlock **$32,000 in additional annual profit** from just five states, representing a **17% improvement with zero capital investment**.

Critical Discount Range Analysis

Green Zone (0-5% Discount) - The Profit Engine

Profit Margin: 16-18% | Status: Optimal

Excellent Margins

- **Characteristics:** Dominates in CA (65%), NY (55%), strong in WA (50%)
- **Customer Behavior:** These transactions prove customers will purchase at minimal discounts

Blue Zone (5-10% Discount) - Healthy Secondary

Profit Margin: 13-15% | Status: Acceptable

Good Margins

- Strategic Use: Appropriate for competitive situations and strategic accounts
- Profit Impact: Still generates healthy margins while providing customer value perception

Yellow Zone (10-15% Discount) - Warning Territory

Profit Margin: 9-12% | Status: Use Sparingly

Declining Margins

- Concern: Margins begin compressing significantly in this range
- Risk: Overuse affects profitability without proportional volume gains

Red Zone (25%+ Discount) - LOSS TERRITORY

Profit Margin: Negative | Status: ELIMINATE

GENERATING LOSSES

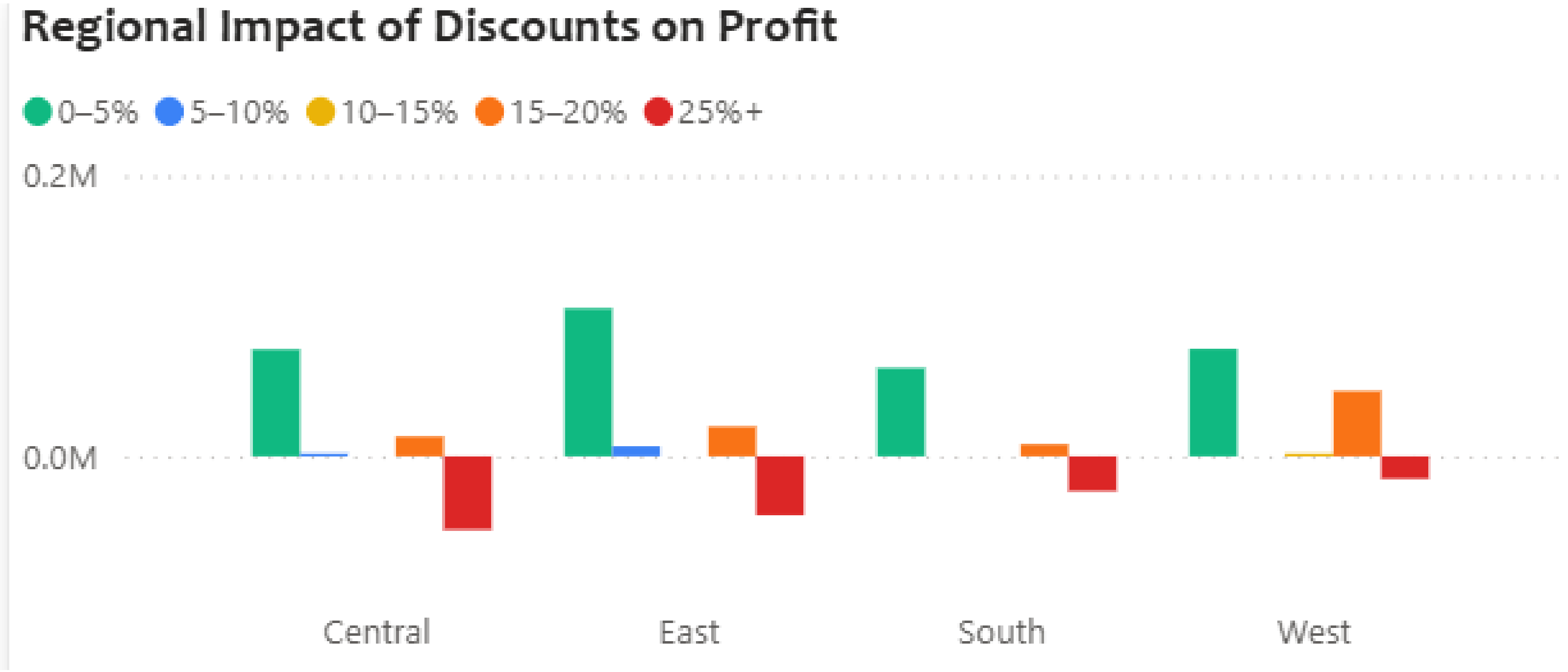
🚨 New York Red Segment: Immediate Action Required

New York is the only state showing a visible red (25%+) segment in the visualization. Despite being the top performer overall, NY is generating losses on a subset of transactions.

This segment must be eliminated immediately.

REGIONAL PERFORMANCE ANALYSIS

Regional Data Shows What Works



Volatility in the Mid-Range (10%-20%)

- The 15-20% (Orange) range is highly profitable in the West. This is a huge outlier and suggests that specific products sold in the West can sustain and benefit from higher discounts than elsewhere
- The 10-15% (Yellow) range in Central does not generates profit, but the 15-20% (Orange) rangegenerates a small profit.
- Central and West also rely heavily on the 0-5% range for their best profits.
- East, South and West regions see the 15-20% (Orange) ranges generating little profit.

The Consistency of Low Discounts (0-10%)

- The 0-5% (Green) and 5-10% (Blue) discount ranges are the primary drivers of profit across all four regions.
- East Region shows the highest volume of profit overall, largely driven by the0-5% range.
- Central and West also rely heavily on the 0-5% range for their best profits.
- The 5-10% range generally yields small profits or breaks even, indicating that moderate discounts are usually safe but not the main revenue generators.

The Critical Profit Destruction Zone (25%+)

- The deep discount range of 25%+ (Red) is the single most destructive factor across all regions
- Central and East regions suffer the largest profit losses from the 25%+ discount range. This visually confirms that deep discounting in these regions is financially unsustainable.
- Central and West also rely heavily on the 0-5% range for their best profits.
- The 5-10% range generally yields small profits, indicating that moderate discounts are usually safe but not the main revenue generators.

RECOMMENDATIONS

Path Forward

First	Introduce discount policy per category to maximize profit margins e.g, limit discounts in Furniture Category from 18% to 8-10%. Discounts above 15% destroy value and should not be used.
Second	Introduce geographic discount optimization to target high-performing areas. Approve immediate implementation of California-based discount standardization across all states.
Third	Eliminate all 25%+ discounts immediately.This single action prevents ongoing losses.

✕ Current State

Annual Sales
$2.30M

Annual Profit
$286K

Profit Margin
12.4%

Average Discount
15.6%

✓ Optimized State

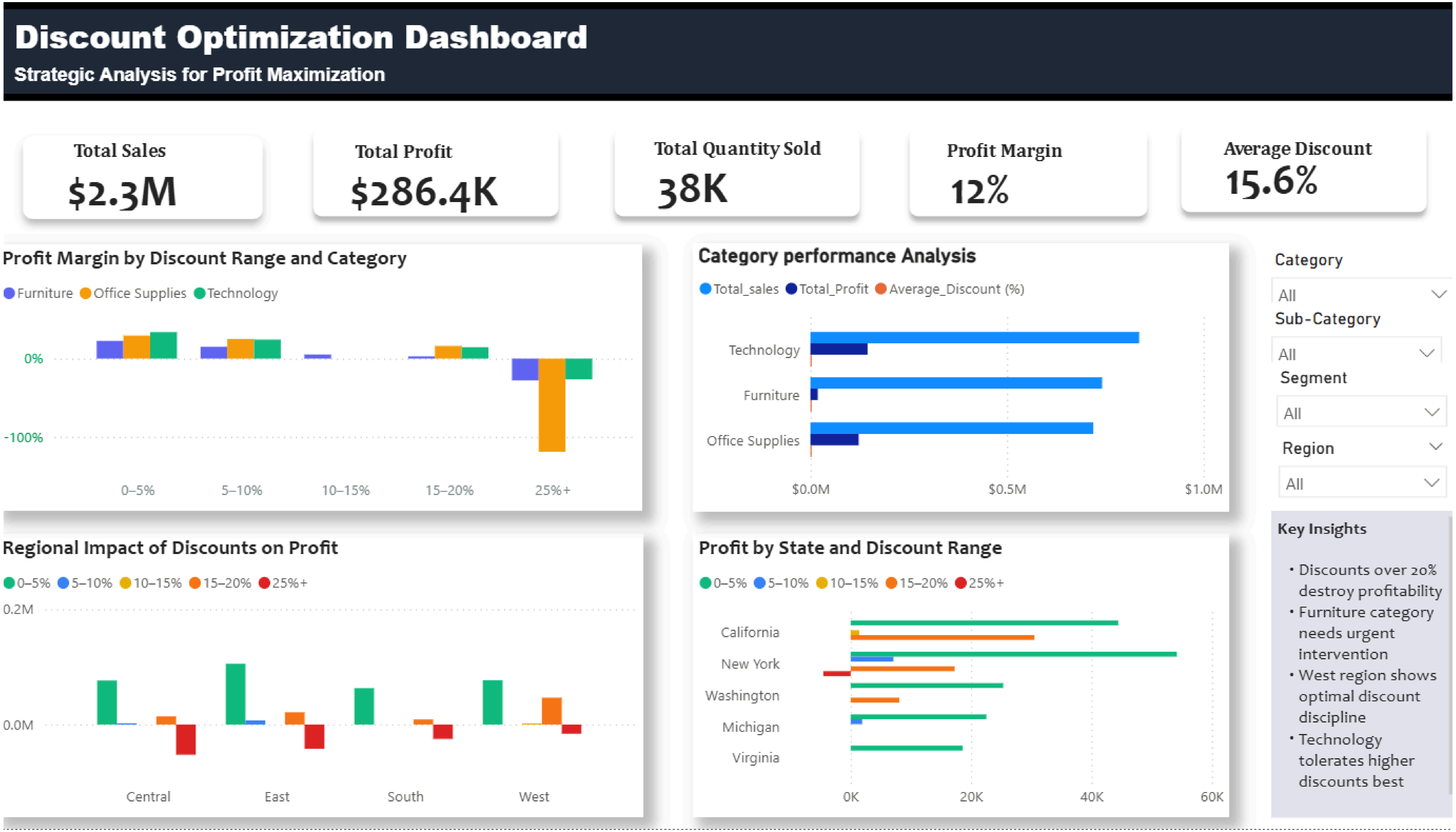
Annual Sales
$2.18M
↓ 5% volume (acceptable)

Annual Profit
$461K
↑ 61% increase

Profit Margin
18.2%
↑ 5.8 points

Average Discount
10-12%
↓ 4-5 points

DISCOUNT OPTIMIZATION DASHBOARD
Analysis at a Glance



CONCLUSION

The Path to Sustainable Profitability

The Data is Clear

✓ Current discount strategy is **unsustainable**, destroying 61% of potential profit

✓ Clear threshold at **15% discount** where profitability collapses

✓ West region proves **disciplined pricing works** without volume loss

✓ **$175K annual opportunity** with zero capital investment

✓ **Low-risk** phased implementation with weekly monitoring

✓ **Immediate action** delivers quick wins in Week 1

What Success Looks Like

→ 18%+ profit margin

→ $461K annual profit

→ Sustainable pricing discipline

→ Reinvestment capacity for growth

→ Competitive differentiation on value

Required Decision

Approve 90-day implementation starting next week

+61%

Profit growth potential

Every week of delay costs approximately **$3,400 in lost profit.**
The time to act is now.