



# Customer Shopping Behavior Analysis

Analyzing 3,900 purchases to uncover spending patterns, customer segments, and strategic insights

# The Data Foundation

3,900

Total Purchases

Transactions analyzed  
across all categories

18

Data Columns

Features tracking  
demographics and  
behavior

50

Locations

Geographic coverage  
across regions

25

Product Types

Diverse inventory  
analyzed



# Data Preparation Pipeline

01

## Data Loading & Exploration

Imported dataset, checked structure with `df.info()` and summary statistics

02

## Missing Data Handling

Imputed 37 missing Review Ratings using median by category

03

## Feature Engineering

Created `age_group` bins and `purchase_frequency_days` columns

04

## Data Consistency

Standardized columns to `snake_case`, dropped redundant `promo_code_used`

05

## Database Integration

Connected to PostgreSQL for advanced SQL analysis

# Revenue & Customer Patterns

## Gender Revenue Split

**Male:** \$157,890

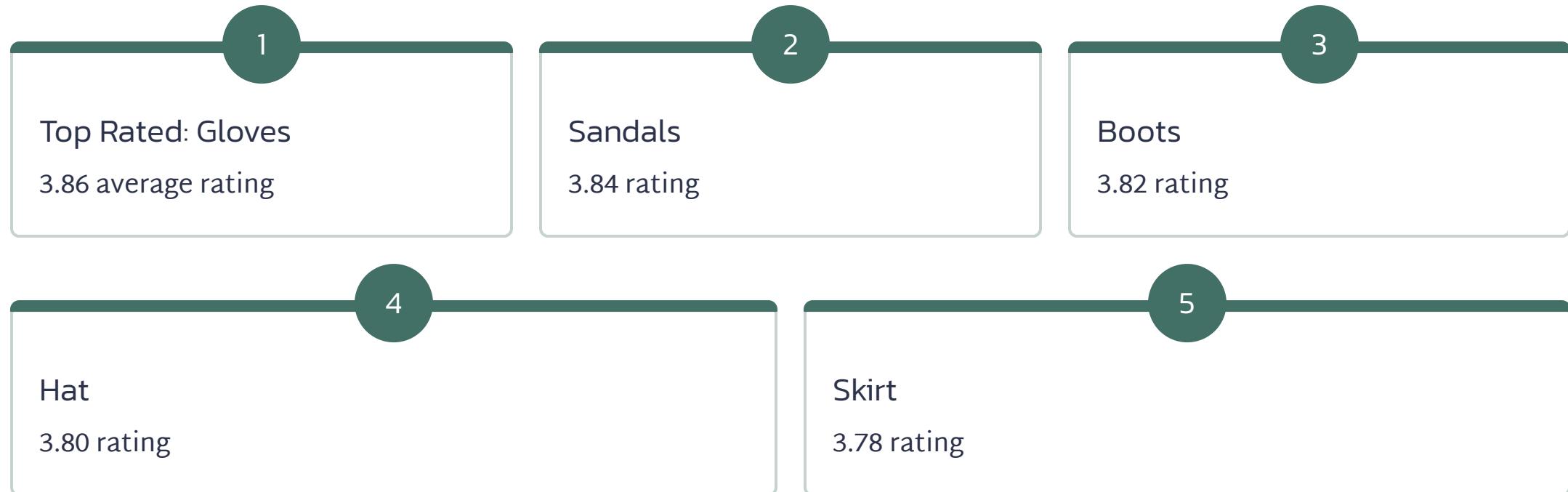
**Female:** \$75,191

Male customers generate 2x revenue

## High-Spending Discount Users

**839 customers** used discounts but spent above average

Opportunity to optimize discount strategy



# Shipping & Subscription Analysis



Express Shipping

**\$60.48** average purchase

Premium customers willing to pay more



Standard Shipping

**\$58.46** average purchase

Slight difference suggests price sensitivity

## Subscribers

1,053 customers

\$59.49 avg spend

**\$62,645** revenue

## Non-Subscribers

2,847 customers

\$59.87 avg spend

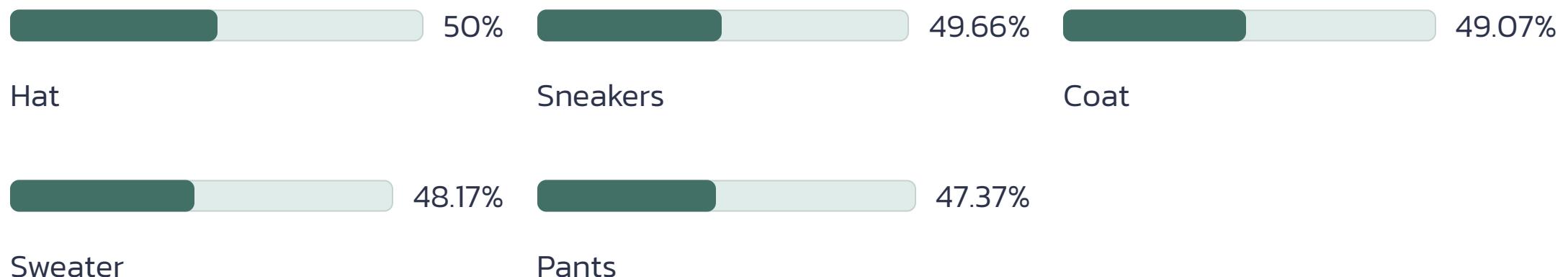
**\$170,436** revenue

## Key Insight

Similar spending per customer, but non-subscribers drive 73% of total revenue

# Discount-Dependent Products

Products with highest percentage of discounted purchases



# Customer Segmentation



80% of customer base classified as Loyal - strong retention foundation

## Repeat Buyers & Subscriptions

Customers with 5+ purchases:

- 958 are subscribers
- 2,518 are non-subscribers

## Opportunity

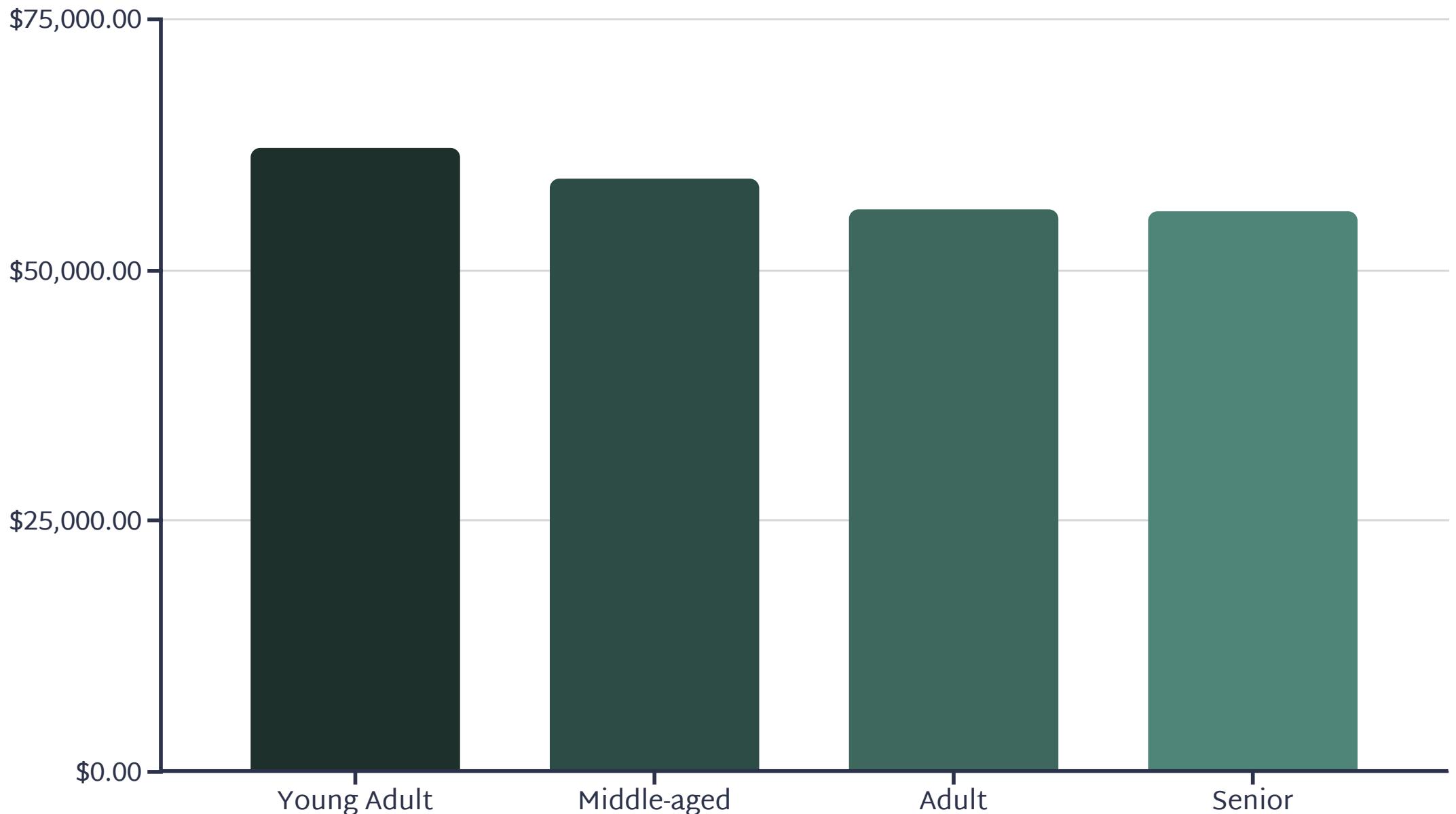
72% of repeat buyers haven't subscribed - significant conversion potential

# Top 3 Products Per Category

1	Accessories
	<b>Jewelry:</b> 171 orders
	<b>Sunglasses:</b> 161 orders
	<b>Belt:</b> 161 orders
2	Clothing
	<b>Blouse:</b> 171 orders
	<b>Pants:</b> 171 orders
	<b>Shirt:</b> 169 orders
3	Footwear
	<b>Sandals:</b> 160 orders
	<b>Shoes:</b> 150 orders
	<b>Sneakers:</b> 145 orders
4	Outerwear
	<b>Jacket:</b> 163 orders
	<b>Coat:</b> 161 orders



# Revenue by Age Group



Young Adults lead revenue generation, but all segments contribute relatively evenly - diversified customer base

 STRATEGIC RECOMMENDATIONS

# Business Action Plan

## Boost Subscriptions

Target 2,518 repeat buyers with exclusive benefits and incentives

## Loyalty Programs

Reward repeat buyers to strengthen the 80% loyal customer base

## Review Discount Policy

Balance sales boosts with margin control - 839 high spenders use discounts

## Product Positioning

Highlight top-rated items (Gloves, Sandals, Boots) in marketing campaigns

## Targeted Marketing

Focus on Young Adults and express-shipping users for premium offerings