Customer Shopping Behavior Analysis

Uncovering insights from 3,900 purchases to guide strategic business decisions

Dataset Overview

3,900
Total Purchases

Transactions analyzed across all categories

18
Data Points

Features tracking demographics and behavior

50
Locations

Geographic distribution of customers

$60
Avg Purchase

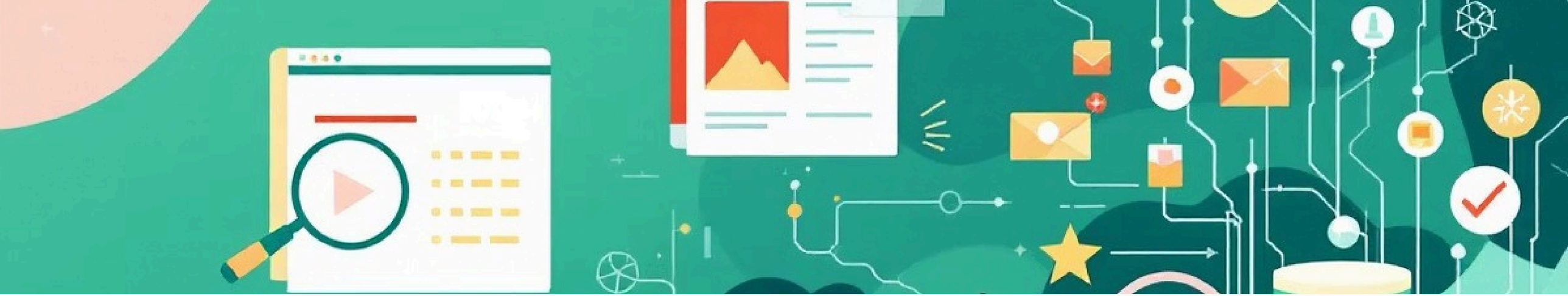
Mean transaction value across all sales

Customer Demographics

- Age, Gender, Location
  Subscription Status

Shopping Behavior

- Purchase patterns & frequency
  Review ratings & preferences



Data Preparation Journey

01

Data Loading & Exploration

Imported dataset, checked structure with pandas

02

Missing Data Handling

Imputed 37 missing review ratings using category medians

03

Feature Engineering

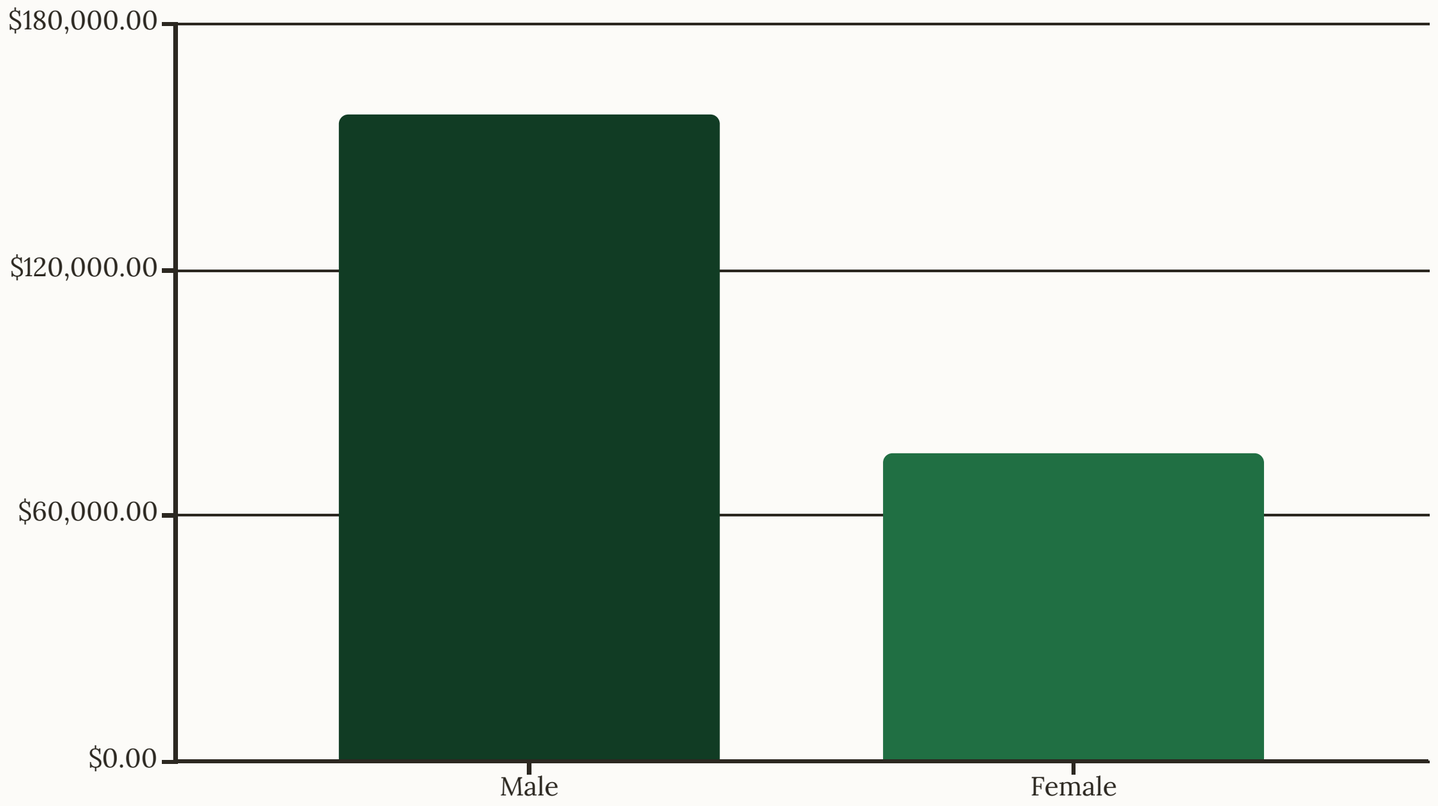
Created age groups and purchase frequency metrics

04

Database Integration

Connected to PostgreSQL for advanced SQL analysis

Revenue Insights



Gender Revenue Gap

- Male customers generate **2.1x more revenue** than female customers
- Opportunity for targeted marketing to balance customer base

Customer Segmentation

Loyal Customers

3,116 customers

80% of customer base with consistent purchase history

Returning Buyers

701 customers

18% showing repeat purchase behavior

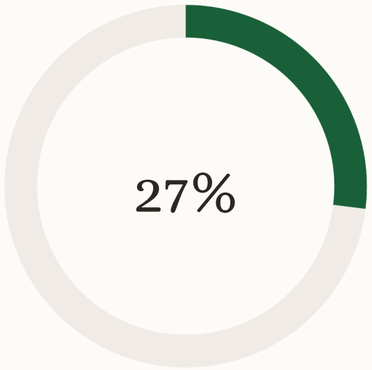
New Customers

83 customers

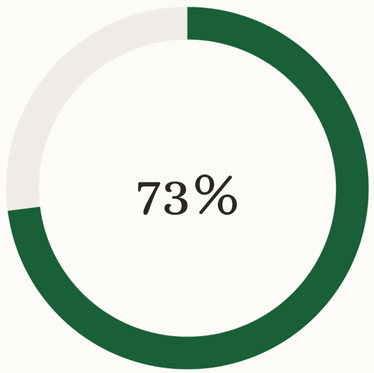
2% with first-time purchases

Focus retention strategies on moving returning buyers into loyal segment

Subscription Analysis



Subscribers
1,053 customers with active subscriptions



Non-Subscribers
2,847 customers without subscriptions

Spending Patterns

- Subscribers: $59.49 avg spend
- Non-subscribers: $59.87 avg spend
- Minimal difference in purchase amounts

Insight: Subscription benefits need enhancement to drive higher value

Top Performing Products

1	Gloves Highestrated: **3.86 stars**
2	Sandals Secondbest: **3.84 stars**
3	Boots Strongperformer: **3.82 stars**
4	Hat Popular choice: **3.80 stars**
5	Skirt Topfive: 3.78 stars

Discount Strategy Impact

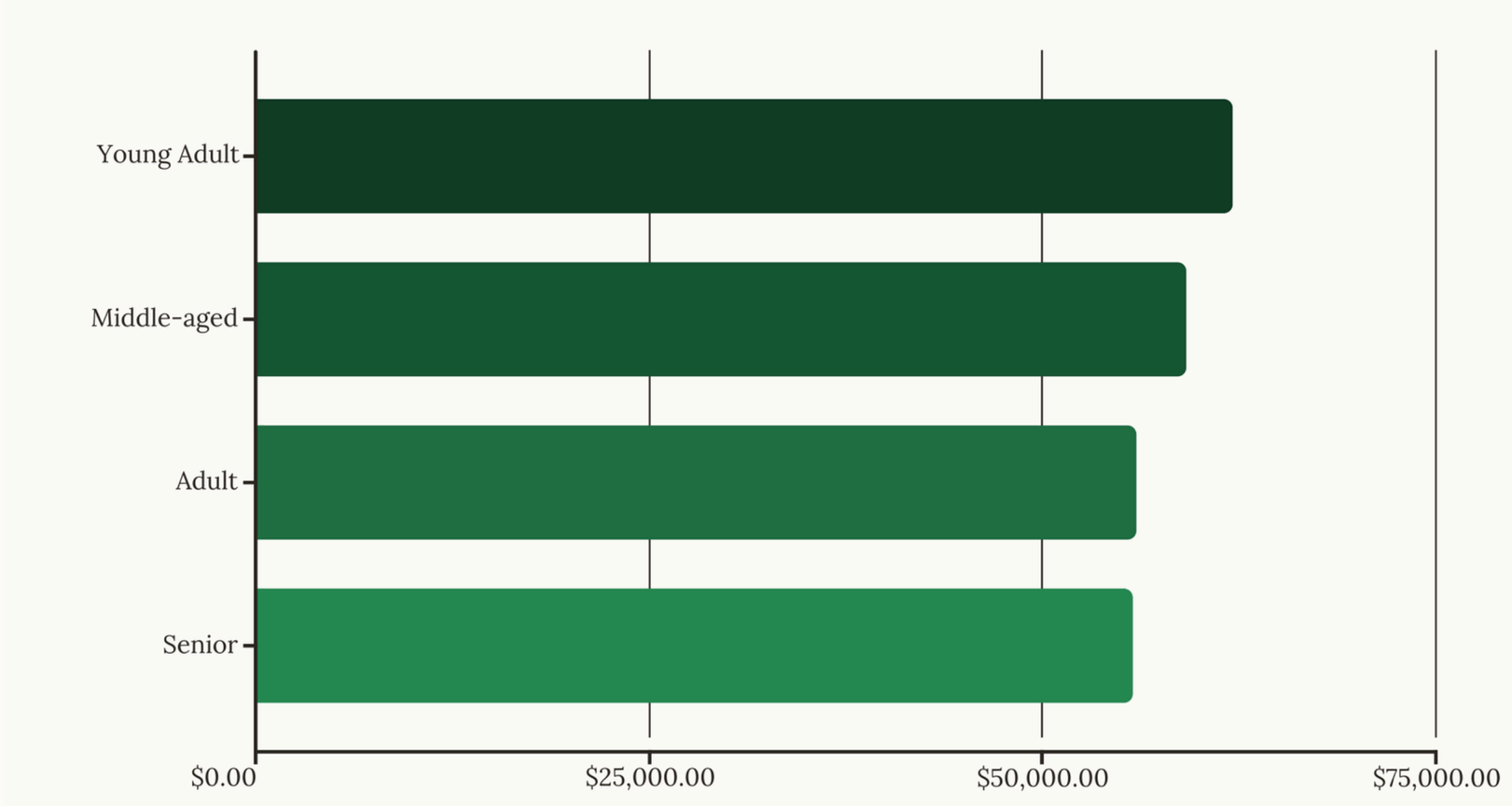
High-ValueDiscount Users

- **839 customers** used discounts but spent above average
- Discounts drive volume without sacrificing transaction value

Most Discounted Products

1. Hat: 50%
2. Sneakers: 49.66%
3. Coat: 49.07%
4. Sweater: 48.17%
5. Pants: 47.37%

Revenue by Age Group



Young adults lead revenue generation, followed closely by middle-aged customers

Strategic Recommendations

Boost Subscriptions

Promote exclusive benefits and perks for subscribers

Loyalty Programs

Reward repeat buyers to build loyal customer base

Review Discounts

Balance sales growth with healthy profit margins

Targeted Marketing

Focus on high-revenue age groups and express shipping users

Product Positioning

Highlight top-rated items in marketing campaigns