



Customer Shopping Behavior Analysis

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



Dataset Overview

3,900

Total Purchases
Transactions analyzed

18

Data Points
Features per purchase

50

Locations
Geographic coverage

25

Products
Items tracked



Data Preparation Journey

01

Data Loading

Imported dataset using pandas, explored structure with `df.info()`

02

Missing Data Handling

Imputed 37 missing Review Ratings using median by category

03

Feature Engineering

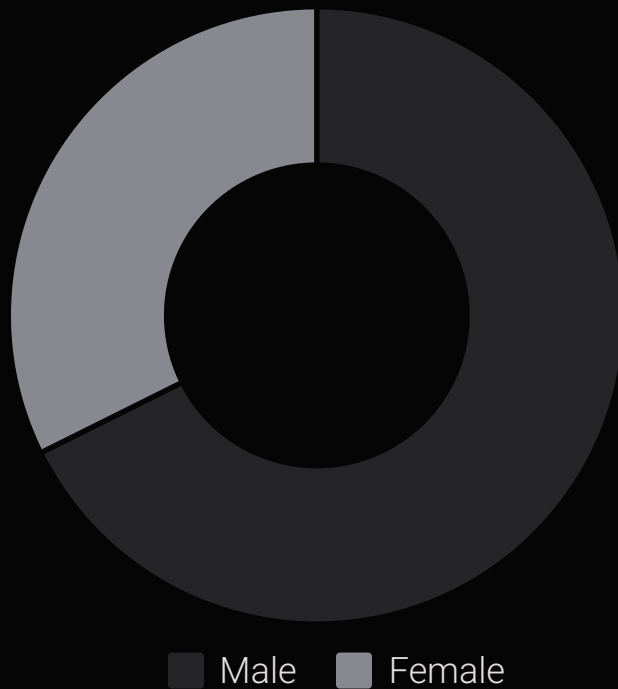
Created `age_group` and `purchase_frequency_days` columns

04

Database Integration

Connected to PostgreSQL for advanced SQL analysis

Revenue by Gender



Key Finding

Male customers generate 68% of total revenue

Female segment shows opportunity for targeted growth campaigns

Customer Segmentation Insights

Loyal Customers

3,116 customers

Largest segment driving repeat business

Returning Buyers

701 customers

Growth opportunity segment

New Customers

83 customers

Smallest segment needing nurture

958 repeat buyers (>5 purchases) have subscriptions vs. 2,518 without

Top Performing Products

Gloves

Highest rating: 3.86 stars

Sandals

Rating: 3.84 stars

Boots

Rating: 3.82 stars

Category Leaders

- Clothing: Blouse (171 orders)
- Accessories: Jewelry (171 orders)
- Footwear: Sandals (160 orders)

Discount Dependent

Hat leads with 50% discount rate, followed by Sneakers at 49.66%

Subscription vs. Non-Subscription

Subscribers

1,053 customers

Average spend: \$59.49

Total revenue: \$62,645

Non-Subscribers

2,847 customers

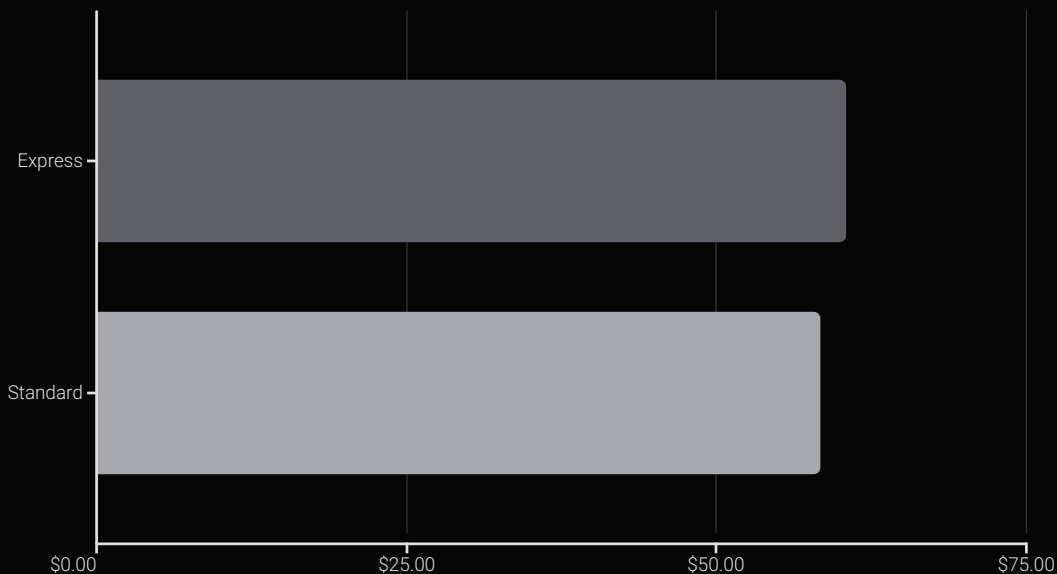
Average spend: \$59.87

Total revenue: \$170,436

- ❏ Similar spending patterns suggest subscription benefits need stronger value proposition

Shipping & Discount Analysis

Shipping Type Impact

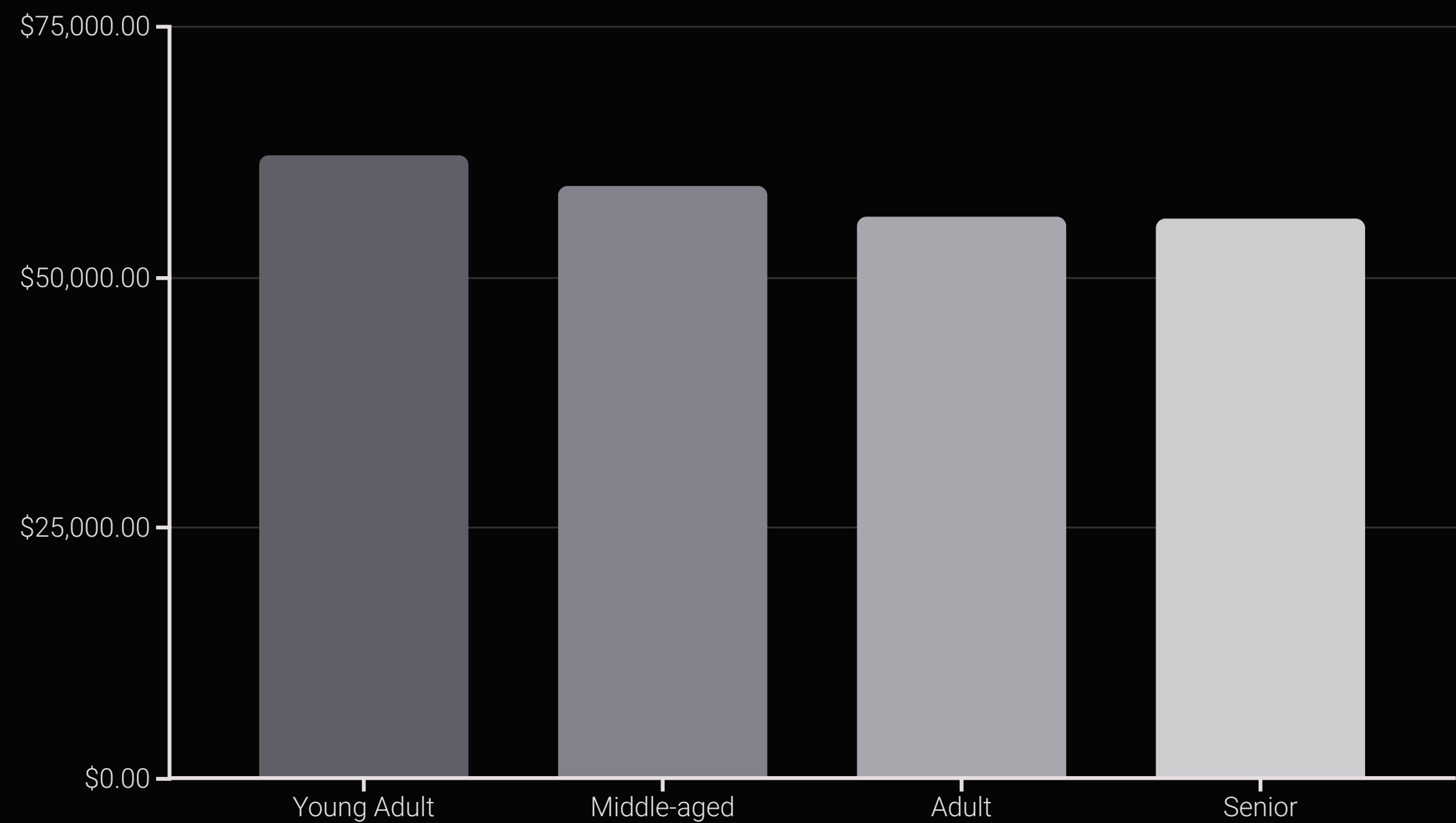


High-Value Discount Users

839 customers used discounts but spent above \$59.76 average

Discounts drive volume without sacrificing basket size

Revenue by Age Group



Young Adults lead revenue generation, followed closely by Middle-aged segment

Strategic Recommendations



Boost Subscriptions

Promote exclusive benefits to convert non-subscribers



Loyalty Programs

Reward repeat buyers to grow Loyal segment



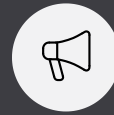
Review Discounts

Balance sales boosts with margin control



Targeted Marketing

Focus on high-revenue age groups and express shipping users



Product Positioning

Highlight top-rated items in campaigns