



Customer Shopping Behavior Analysis

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

Dataset Overview

3,900

Total Purchases

Transactions analyzed across all categories

18

Data Points

Features tracking customer behavior

50

Locations

Geographic distribution of customers

25

Products

Unique items purchased

Customer Demographics

- Age, Gender, Location
- Subscription Status

Purchase Details

- Item, Category, Amount
- Season, Size, Color

Shopping Behavior

- Discounts & Promo Codes
- Review Ratings, Shipping

Our Analytics Tech Stack



Python

Data cleaning, feature engineering, pandas analysis

PostgreSQL

Structured queries, business transactions, segmentation

Power BI

Interactive dashboards, visual insights, real-time reporting



Python: Data Preparation

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

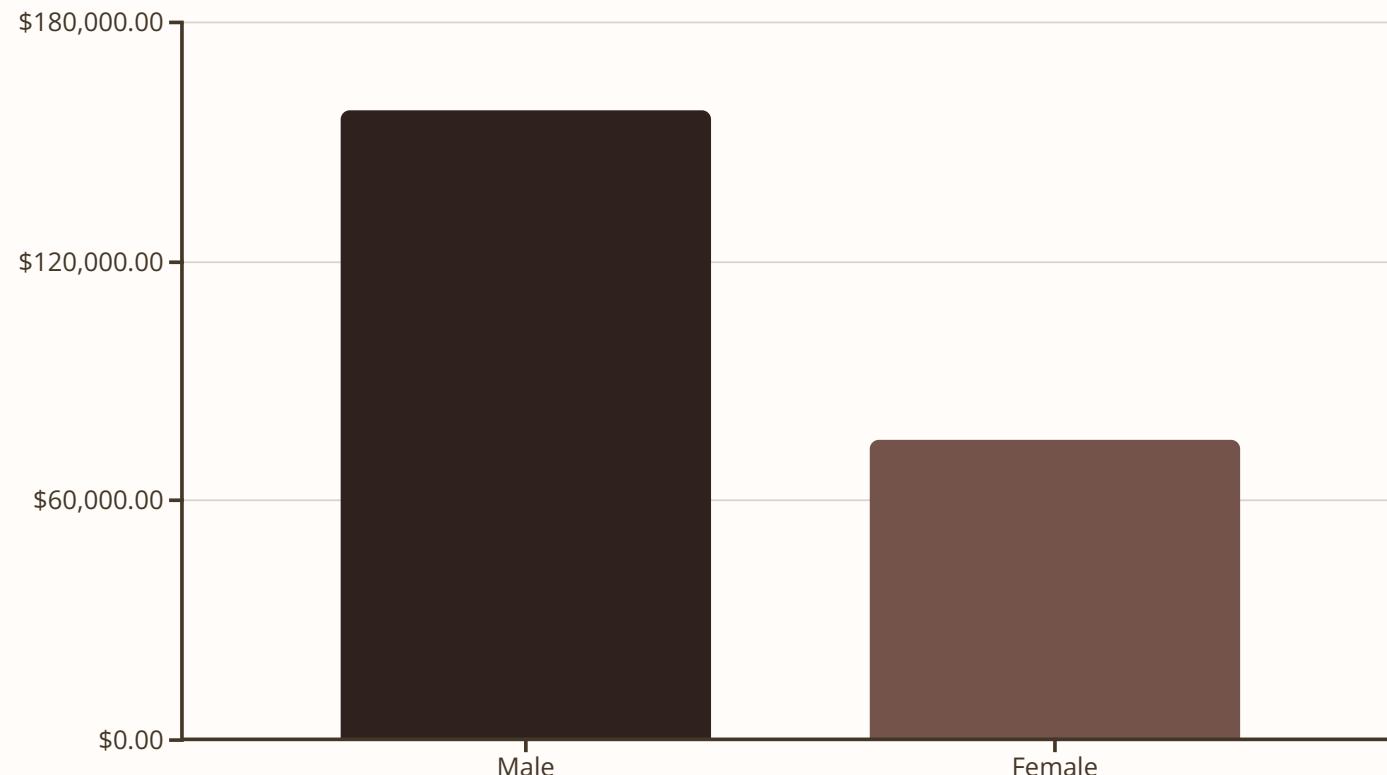
Standardized columns to snake_case, dropped redundant
promo_code_used

05

Database Integration

Connected to PostgreSQL and loaded cleaned DataFrame

Revenue Insights



Gender Distribution

Male customers generate 68% of total revenue despite representing 68% of customer base

High-Spending Discount Users

839 customers used discounts but still spent above \$60 average

Top-Rated Products



Gloves

 3.86 rating

Sandals

 3.84 rating

Boots

 3.82 rating

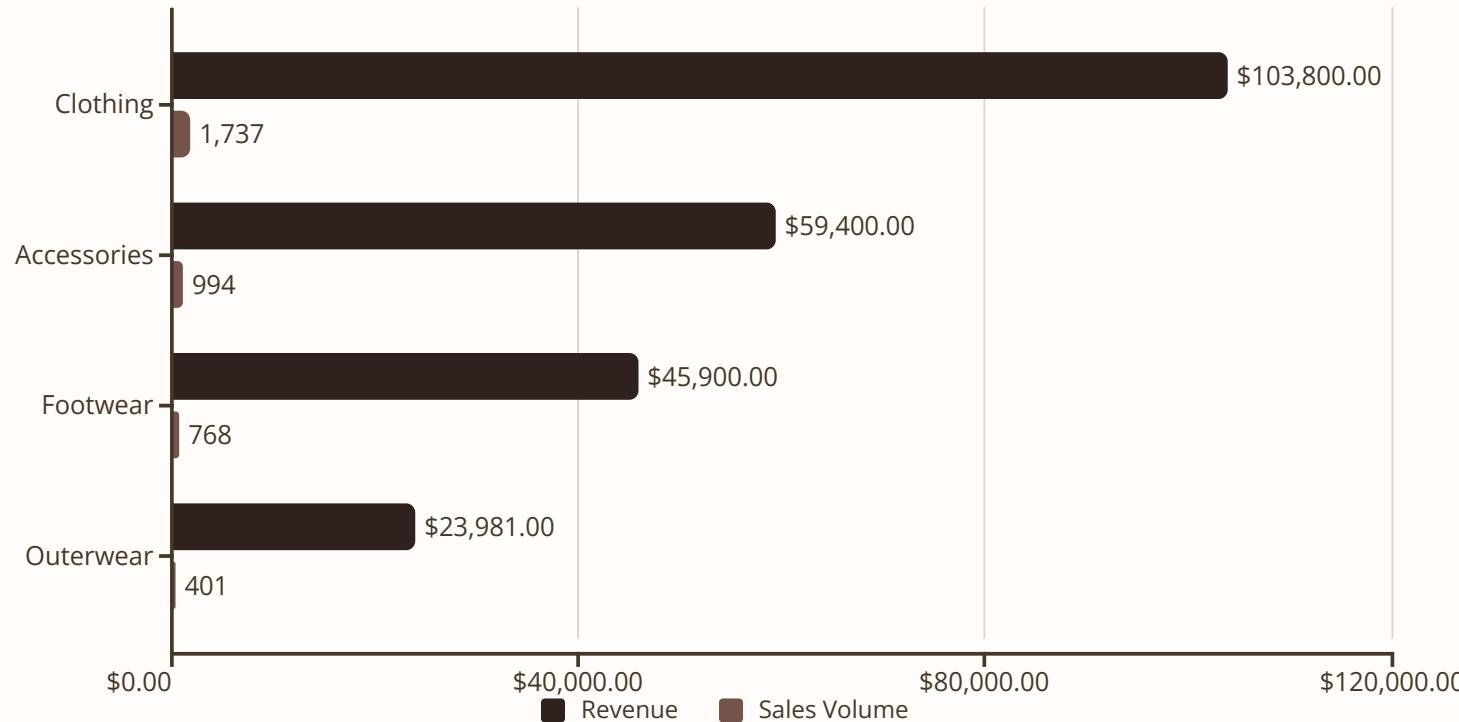
Hat

 3.80 rating

Skirt

 3.78 rating

Category Performance



Clothing

Blouse, Pants, Shirt lead sales



Accessories

Jewelry, Sunglasses, Belt top performers



Footwear

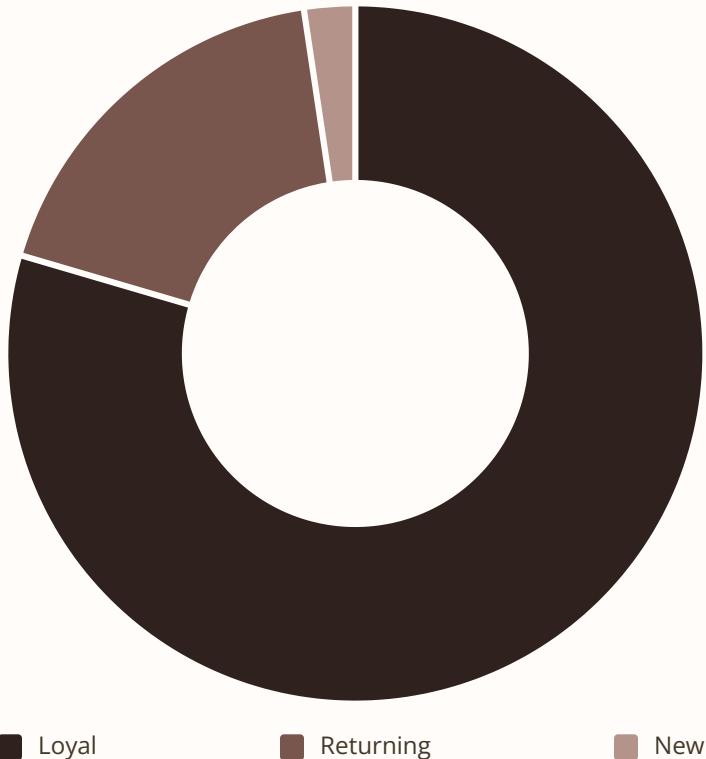
Sandals, Shoes, Sneakers most popular



Outerwear

Jacket, Coat drive category

Customer Segmentation



Subscription Analysis

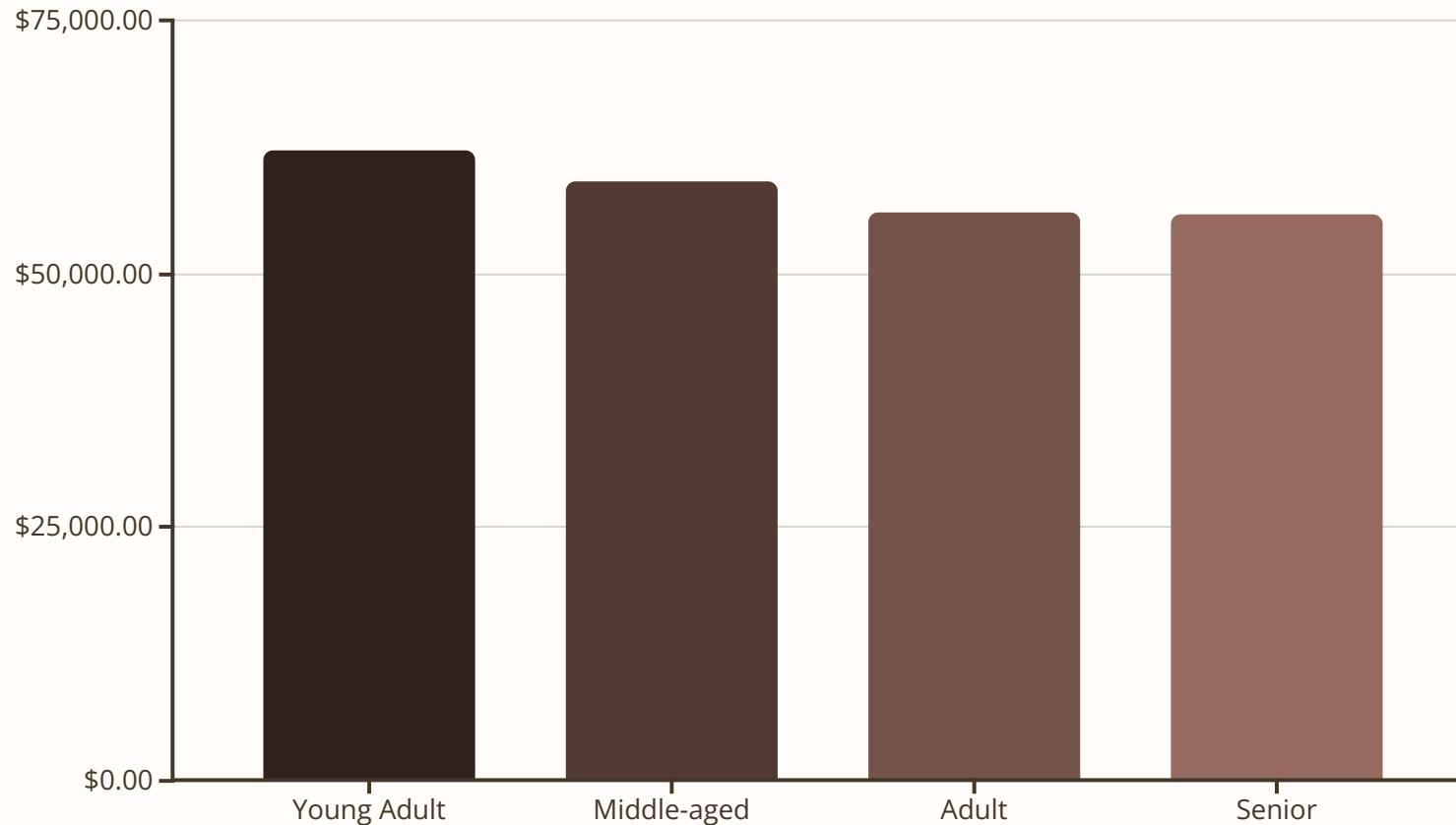
958 repeat buyers (>5 purchases) have subscriptions

2,518 repeat buyers without subscriptions represent opportunity

Subscription vs Non-Subscribers

- **Subscribers:** 1,053 customers, \$59.49 avg spend
- **Non-subscribers:** 2,847 customers, \$59.87 avg spend
- Total revenue: \$233,081

Age Group & Shipping Insights



Express Shipping

\$60.48 average purchase

Standard Shipping

\$58.46 average purchase

Discount-Dependent

Hat (50%), Sneakers (49.7%), Coat (49.1%)

Strategic Recommendations

1

Boost Subscriptions

Promote exclusive benefits to convert 2,518 repeat buyers without subscriptions

2

Customer Loyalty Programs

Reward returning customers to accelerate movement into loyal segment

3

Review Discount Policy

Balance sales boosts with margin control for high-discount products

4

Product Positioning

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

5

Targeted Marketing

Focus on Young Adults and express-shipping users for maximum ROI