

# Customer Shopping Behavior Analysis

Analyzing 3,900 purchases to uncover insights into spending patterns, customer segments, and product preferences that drive strategic business decisions.



# Dataset Overview

3,900

## Total Purchases

Transactions analyzed across various product categories

18

## Data Columns

Features covering demographics, purchases, and behavior

37

## Missing Values

Only in Review Rating column, handled via imputation

## Customer Data

- Age, Gender, Location
- Subscription Status
- Previous Purchases

## Purchase Details

- Item, Category, Amount
- Season, Size, Color
- Discounts & Shipping

# Data Preparation in Python

01

## Data Loading & Exploration

Imported dataset using pandas, examined structure with df.info() and summary statistics

02

## Missing Data Handling

Imputed Review Rating nulls using median rating per product category

03

## Feature Engineering

Created age\_group bins and purchase\_frequency\_days columns for deeper analysis

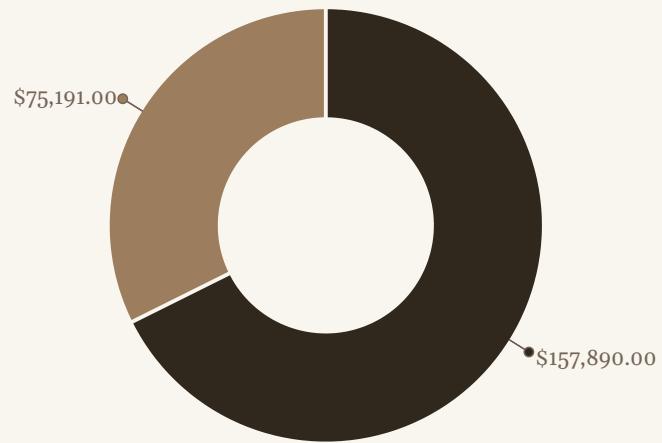
04

## Database Integration

Connected to PostgreSQL and loaded cleaned data for SQL analysis



# Revenue by Gender



■ Male ■ Female

**Male customers** generate **\$157,890** in revenue compared to **\$75,191** from female customers.

This 68% male revenue share suggests opportunities for targeted marketing to balance customer acquisition.

# Key Business Insights



## Top-Rated Products

Gloves (3.86), Sandals (3.84), and Boots (3.82) lead in customer satisfaction



## Shipping Preferences

Express shipping users spend \$60.48 vs. \$58.46 for Standard—a 3.5% premium

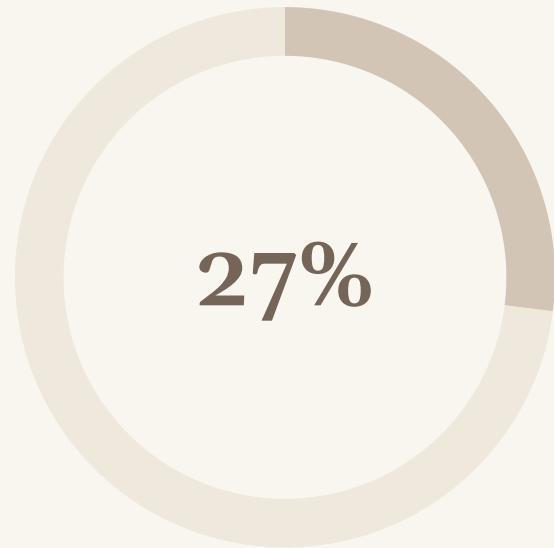


## Smart Spenders

839 customers used discounts but still spent above average purchase amount

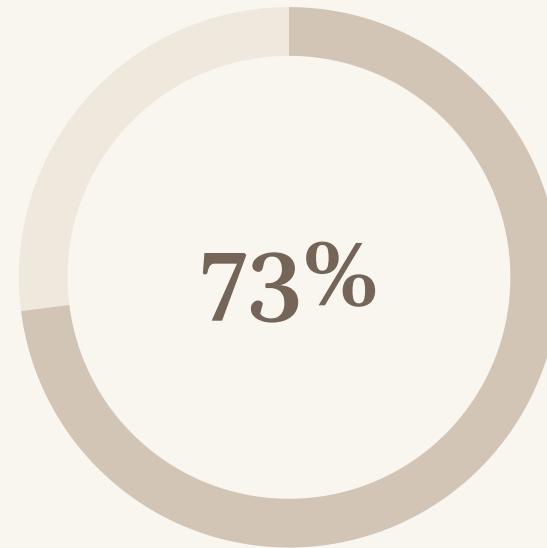


# Subscription Analysis



## Subscription Rate

1,053 of 3,900 customers are subscribers



## Non-Subscribers

2,847 customers without subscriptions

## Average Spend

Subscribers: \$59.49

Non-subscribers: \$59.87

Minimal difference suggests subscription benefits need enhancement

## Repeat Buyers

Of customers with 5+ purchases:

- 958 are subscribers
- 2,518 are not subscribed

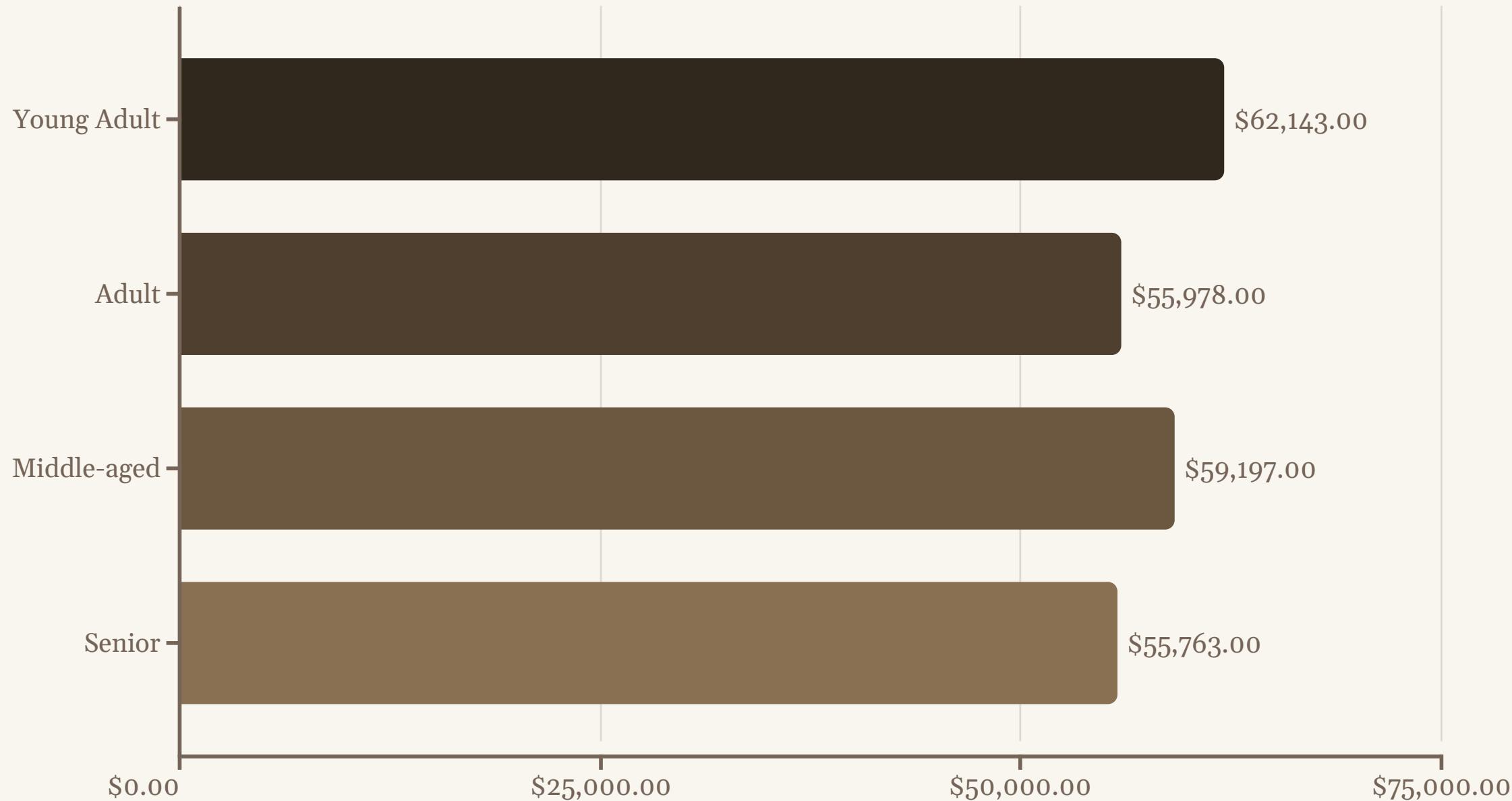
Huge opportunity for conversion

# Customer Segmentation



Our customer base is **80% loyal customers**, demonstrating strong retention. Focus should shift to converting the 18% returning segment into loyal advocates through targeted loyalty programs.

# Revenue by Age Group



Young adults lead revenue generation at **\$62,143**, followed closely by middle-aged customers. Revenue distribution is relatively balanced across age groups, suggesting broad market appeal.



# Product Performance Insights

## Discount-Dependent Products

1. Hat (50% discount rate)
2. Sneakers (49.66%)
3. Coat (49.07%)
4. Sweater (48.17%)
5. Pants (47.37%)

These items rely heavily on promotions to drive sales

## Top Products by Category

**Accessories:** Jewelry, Sunglasses, Belt

**Clothing:** Blouse, Pants, Shirt

**Footwear:** Sandals, Shoes, Sneakers

**Outerwear:** Jacket, Coat

# Strategic Recommendations



## Boost Subscriptions

Promote exclusive benefits to convert 2,518 repeat buyers who aren't subscribed

## Loyalty Programs

Reward returning customers to accelerate their journey into the loyal segment

## Review Discount Policy

Balance promotional sales with margin control, especially for discount-dependent products

## Targeted Marketing

Focus on high-revenue age groups and express-shipping users who spend 3.5% more