



Customer Shopping Behavior Analysis

Uncovering insights from transactional data to guide strategic business decisions.

Project Overview

1

Analyze Behavior

3,900 purchases across categories.

2

Uncover Insights

Spending patterns, segments, preferences.

3

Guide Decisions

Optimize strategy for business growth.





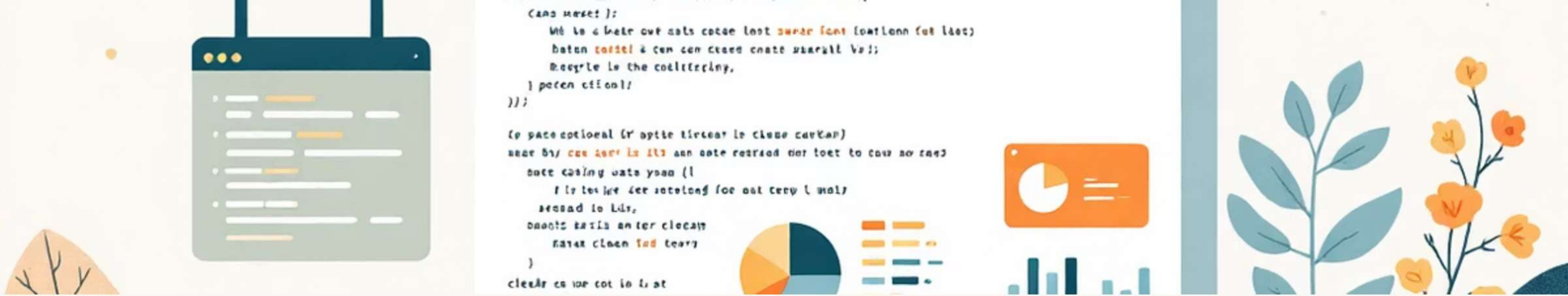
Dataset Summary

Key Features

- Customer demographics
- Purchase details
- Shopping behavior

Data Points

- Rows: 3,900
- Columns: 18
- Missing: 37 (Review Rating)



Exploratory Data Analysis (Python)

01

Data Loading & Exploration

Imported with pandas, checked structure and summary statistics.

03

Feature Engineering

Created age_group and purchase_frequency_days.

02

Missing Data Handling

Imputed Review Rating with median by category.

04

Database Integration

Loaded cleaned data to PostgreSQL for SQL analysis.

Data Analysis (SQL)

Revenue by Gender

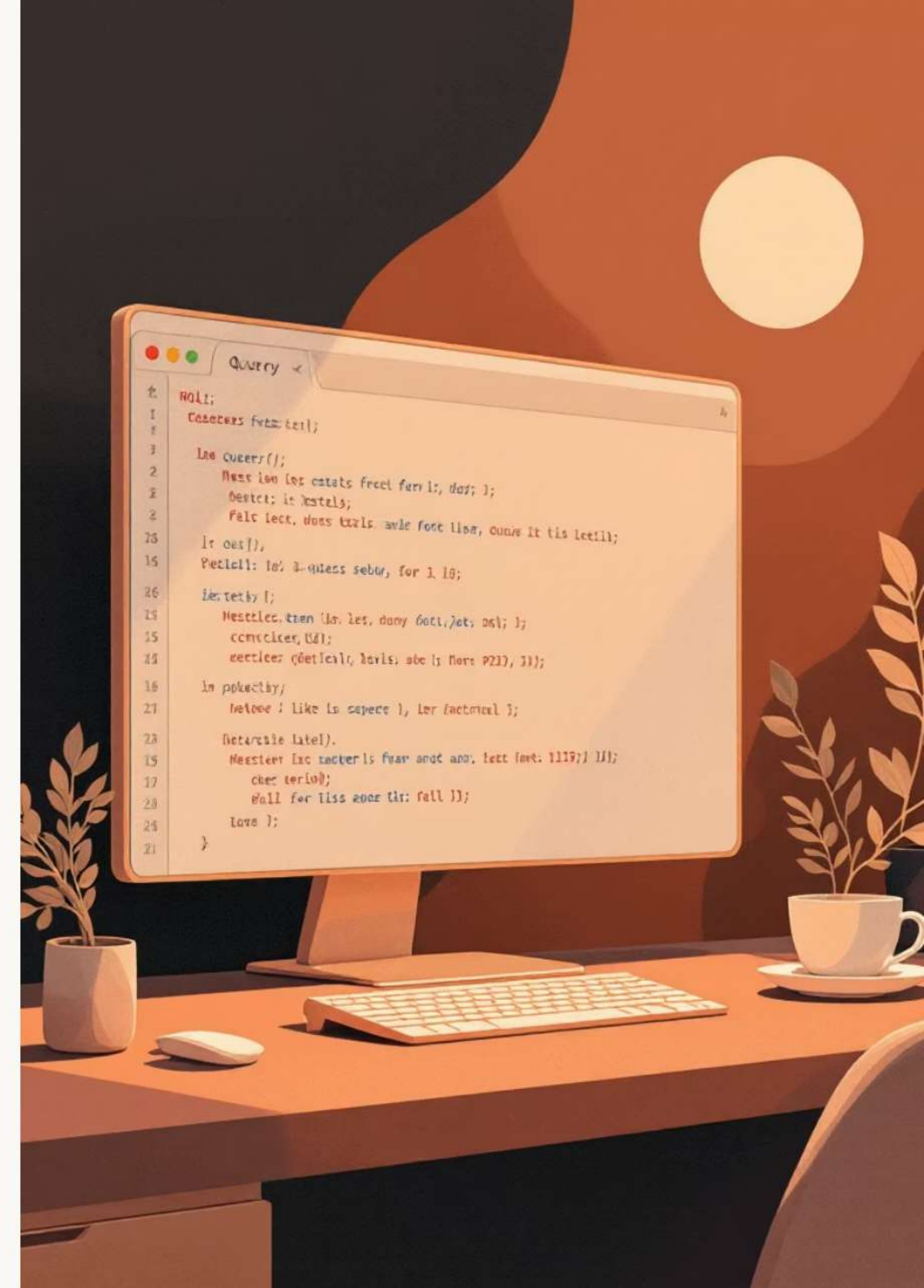
Female: \$75,191, Male:
\$157,890

High-Spending Discount Users

Identified 839 customers.

Top 5 Products by Rating

Gloves, Sandals, Boots, Hat,
Skirt.



SQL Insights: Shipping & Subscriptions

Shipping Type Comparison

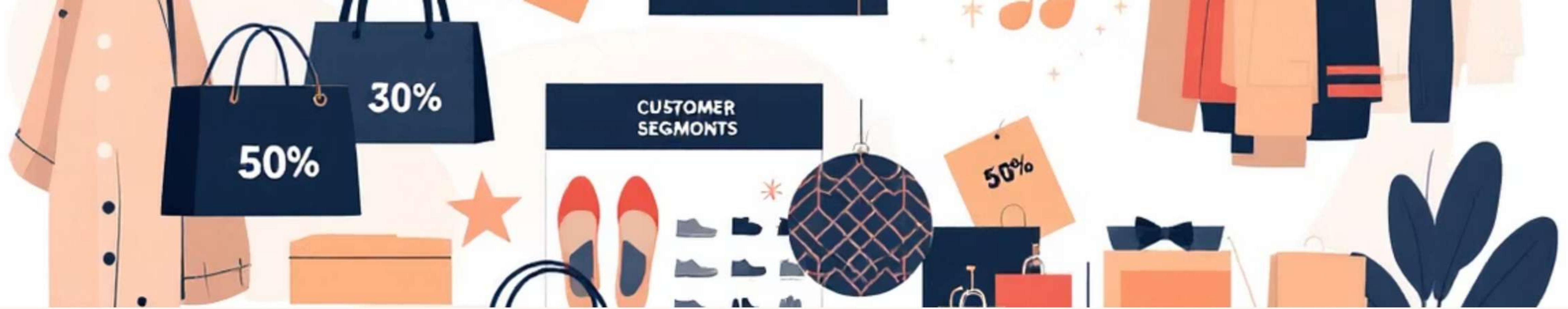
Standard: \$58.46, Express:
\$60.48

Subscribers vs. Non-Subscribers

Subscribers: 1,053, Avg Spend:
\$59.49

Non-Subscribers: 2,847, Avg
Spend: \$59.87





SQL Insights: Products & Segments



Discount-Dependent Products

Hat, Sneakers, Coat, Sweater, Pants.



Customer Segmentation

Loyal (3116), Returning (701), New (83).



Top 3 Products per Category

Jewelry, Blouse, Sandals, Jacket.



45%

SQL Insights: Repeat Buyers & Age

Repeat Buyers & Subscriptions

958 repeat buyers are subscribers.

2518 repeat buyers are not subscribers.

Revenue by Age Group

Young Adult: \$62,143

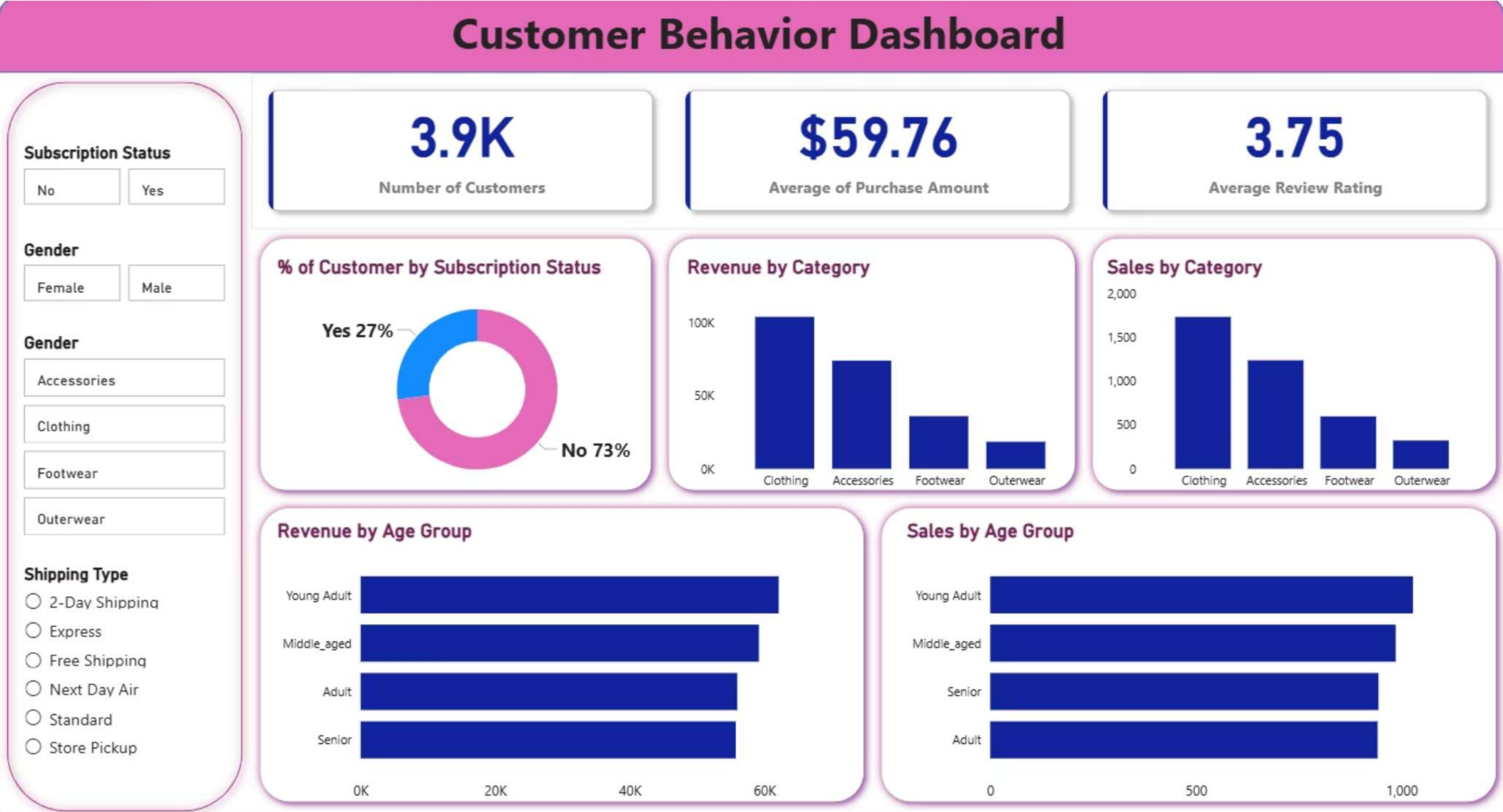
Middle-aged: \$59,197

Adult: \$55,978

Senior: \$55,763

Power BI Dashboard

Interactive visualization of key customer behavior metrics.





Business Recommendations

- **Boost Subscriptions**
Promote exclusive benefits.
- **Customer Loyalty Programs**
Reward repeat buyers.
- **Review Discount Policy**
Balance sales with margin control.
- **Targeted Marketing**
Focus on high-revenue age groups.