

Customer Shopping Behavior Analysis

Uncovering insights from transactional data to guide strategic business decisions.



Project Overview

Data Source

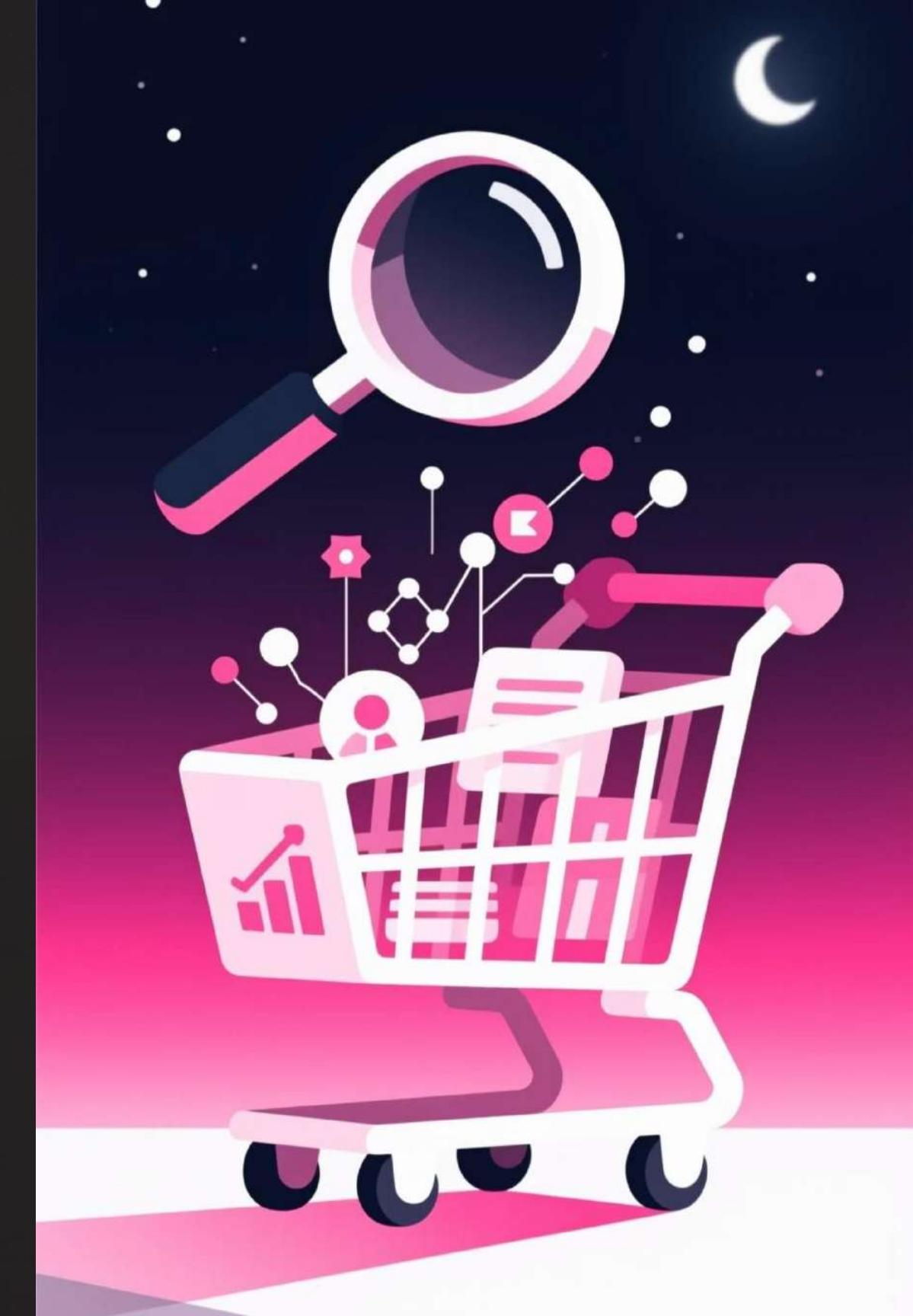
3,900 purchases across categories.

Goal

Uncover spending patterns, segments, preferences.

Impact

Guide strategic business decisions.



Dataset Summary

Key Features

- Customer demographics
- Purchase details
- Shopping behavior

Data Points

- Rows: 3,900
- Columns: 18
- Missing Data: 37 values in Review Rating





Exploratory Data Analysis (Python)

01

Data Loading & Exploration

Imported dataset, checked structure and summary statistics.

02

Data Cleaning

Handled missing values, standardized column names.

03

Feature Engineering

Created age groups, purchase frequency.

04

Database Integration

Loaded cleaned data to PostgreSQL for SQL analysis.

Data Analysis (SQL)

Structured analysis in PostgreSQL for key business questions.



1

Revenue by Gender

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

2

High-Spending Discount Users

839 customers spent above average with discounts.

3

Top 5 Products by Rating

Gloves, Sandals, Boots, Hat, Skirt.

4

Shipping Type Comparison

Express: \$60.48 avg, Standard: \$58.46 avg.



SQL Insights: Customer Behavior



Subscribers vs. Non-Subscribers

Non-subscribers higher total revenue (\$170,436).



Discount-Dependent Products

Hat (50%), Sneakers (49.66%), Coat (49.07%).



Customer Segmentation

Loyal: 3116, Returning: 701, New: 83.

SQL Insights: Product & Age

Top 3 Products per Category

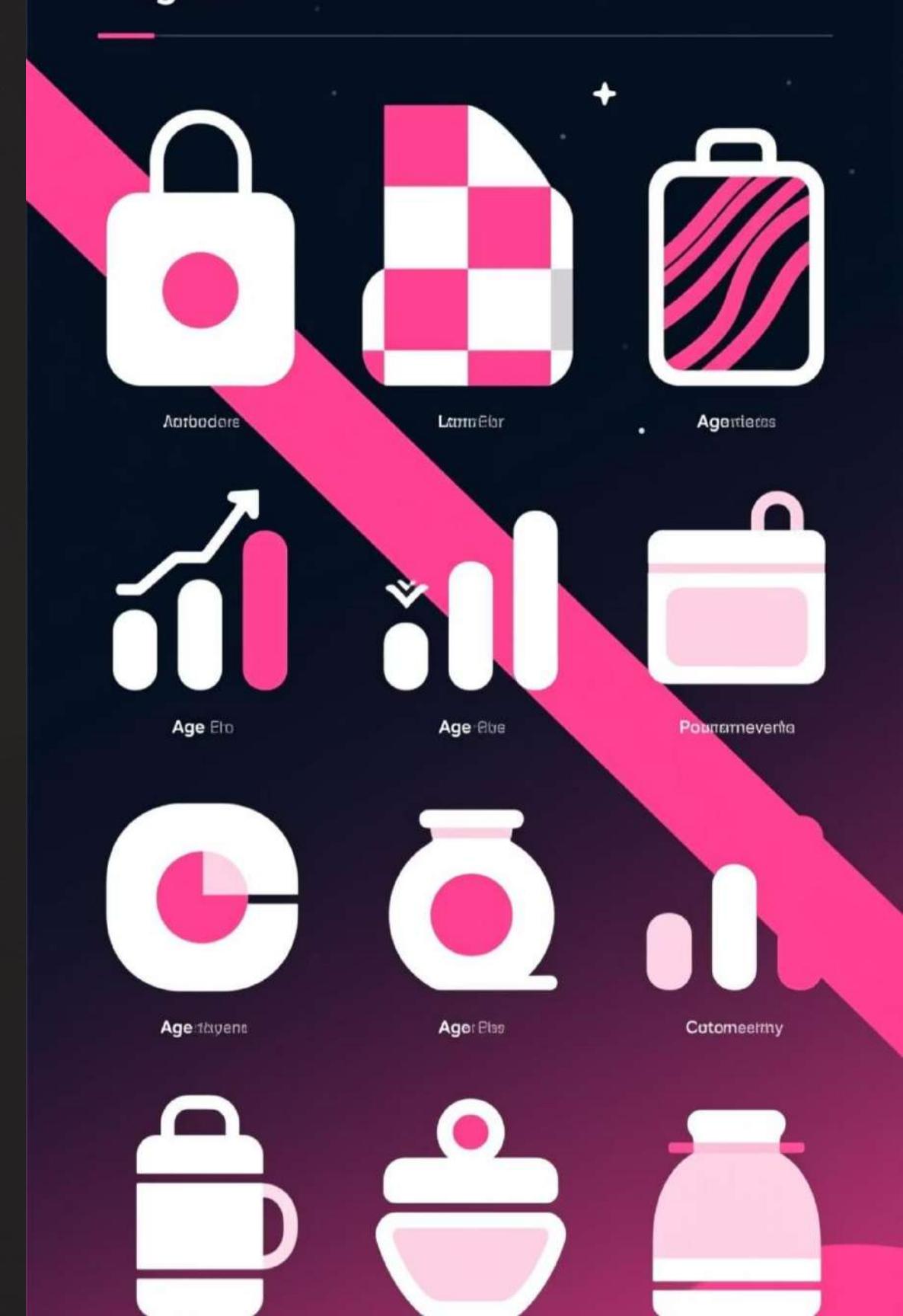
- Accessories: Jewelry, Sunglasses, Belt
- Clothing: Blouse, Pants, Shirt
- Footwear: Sandals, Shoes, Sneakers
- Outerwear: Jacket, Coat

Repeat Buyers & Subscriptions

2518 non-subscribers, 958 subscribers among repeat buyers.

Revenue by Age Group

Young Adult: \$62,143, Middle-aged: \$59,197.



Power BI Dashboard

Interactive
dashboard for visual
insights.

Customer Behavior Dashboard

3.9K

Number of Customers

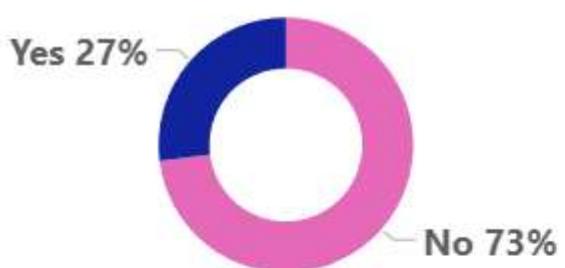
\$59.76

Average Purchase Amount

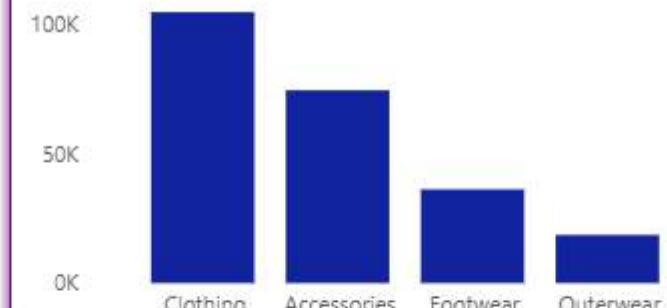
3.75

Average Review Rating

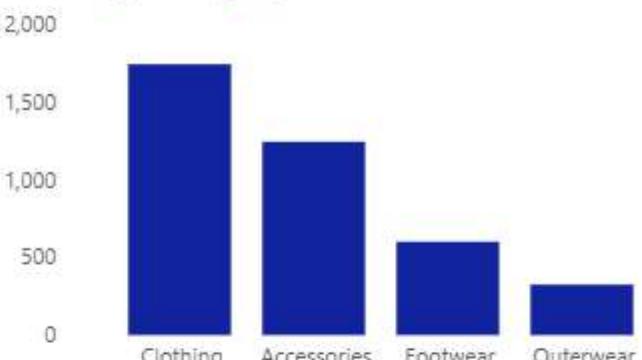
% of Customers by Subscription Status



Revenue by Category



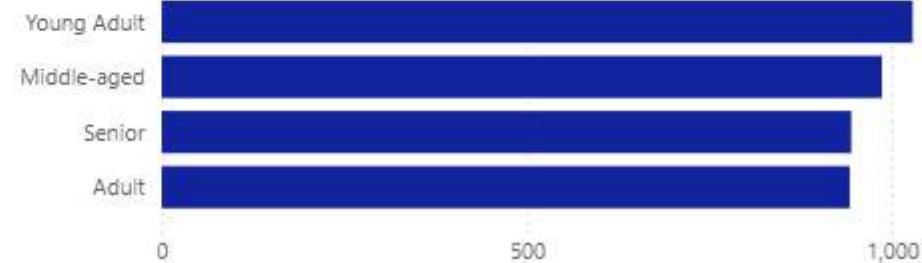
Sales by Category



Revenue by Age Group



Sales by Age Group



Dashboard Key Metrics & Filters

Key Metrics

- 3.9K Customers
- \$59.76 Avg. Purchase Amount
- 3.75 Avg. Review Rating

Filters

- Subscription Status
- Gender
- Category
- Shipping Type

Subscription Status

 No Yes

Gender

 Female Male

Category

Shipping Type

- 2-Day Shipping
- Express
- Free Shipping
- Next Day Air
- Standard
- Store Pickup

Business Recommendations

→ Boost Subscriptions

Promote exclusive benefits.

→ Customer Loyalty Programs

Reward repeat buyers.

→ Review Discount Policy

Balance sales with margin control.

→ Product Positioning

Highlight top-rated products.

→ Targeted Marketing

Focus on high-revenue age groups.