Customer Shopping Behavior Analysis

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

Dataset Overview

3,900

Total Purchases

Transactions analyzed

18

Data Points

Features tracked

Key Features Analyzed

- Customer demographics & location
- Purchase details & product categories
- Shopping behavior & review ratings
- Subscription & shipping preferences

Python Analysis Pipeline

01

Data Loading & Exploration

Imported dataset, checked structure and summary statistics

02

Missing Data Handling

Imputed 37 missing review ratings using category medians
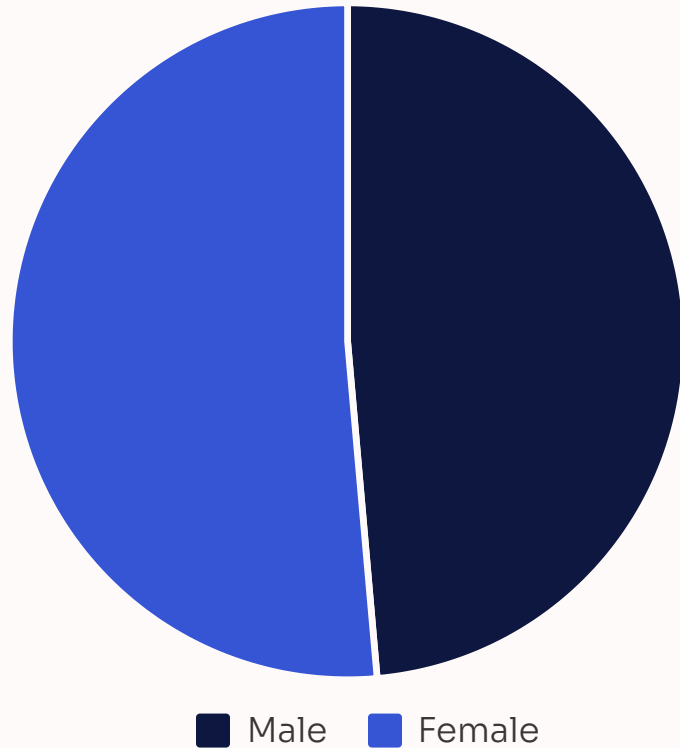
03

Feature Engineering

Created age groups and purchase frequency metrics

04

Database Integration

Loaded cleaned data into PostgreSQL for SQL analysis

Revenue by Gender

■ Male ■ Female

Gender Distribution Insights

Female customers generate slightly higher total revenue, representing 51% of total purchases compared to male customers at 49%.

Both segments show balanced contribution, suggesting broad market appeal across genders.

High-Spending Discount Users

Customers who used discounts but still spent above average purchase amount

Strategic Insight

Discounts attract premium buyers, not just bargain hunters

Opportunity

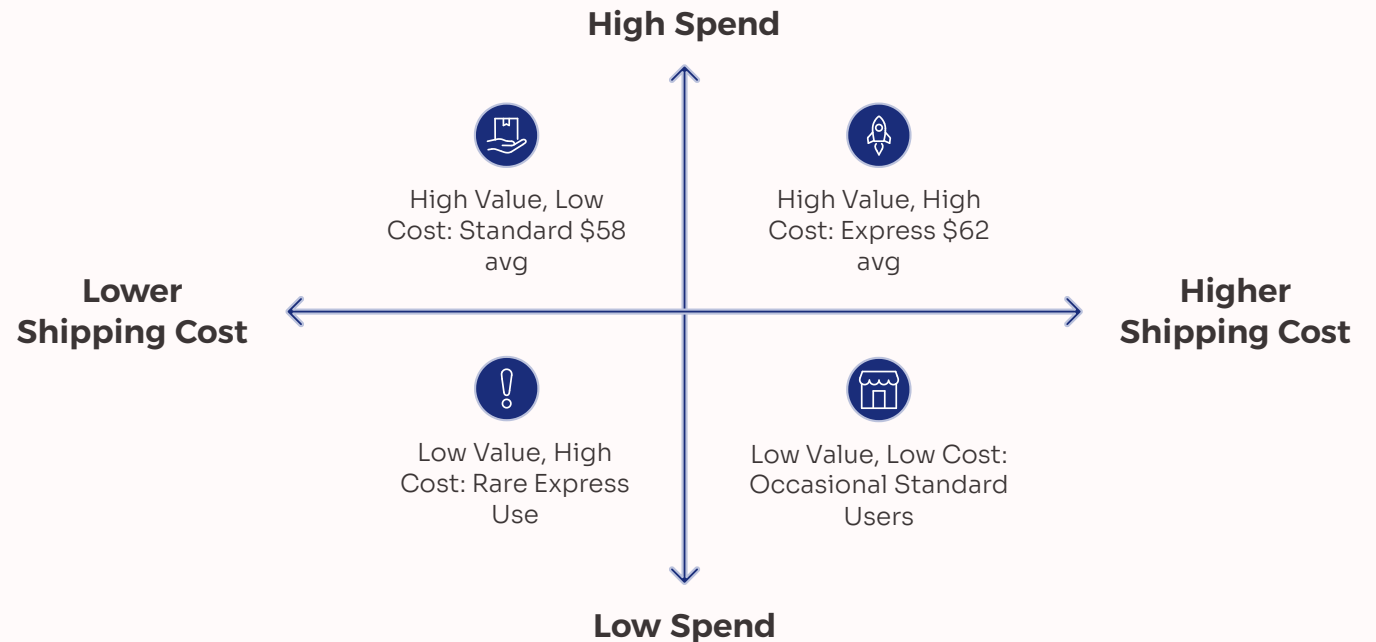Targeted promotions can drive volume without sacrificing margins

Customer Value

Discount users include high-value segments worth retaining

Top Products & Shipping Preferences
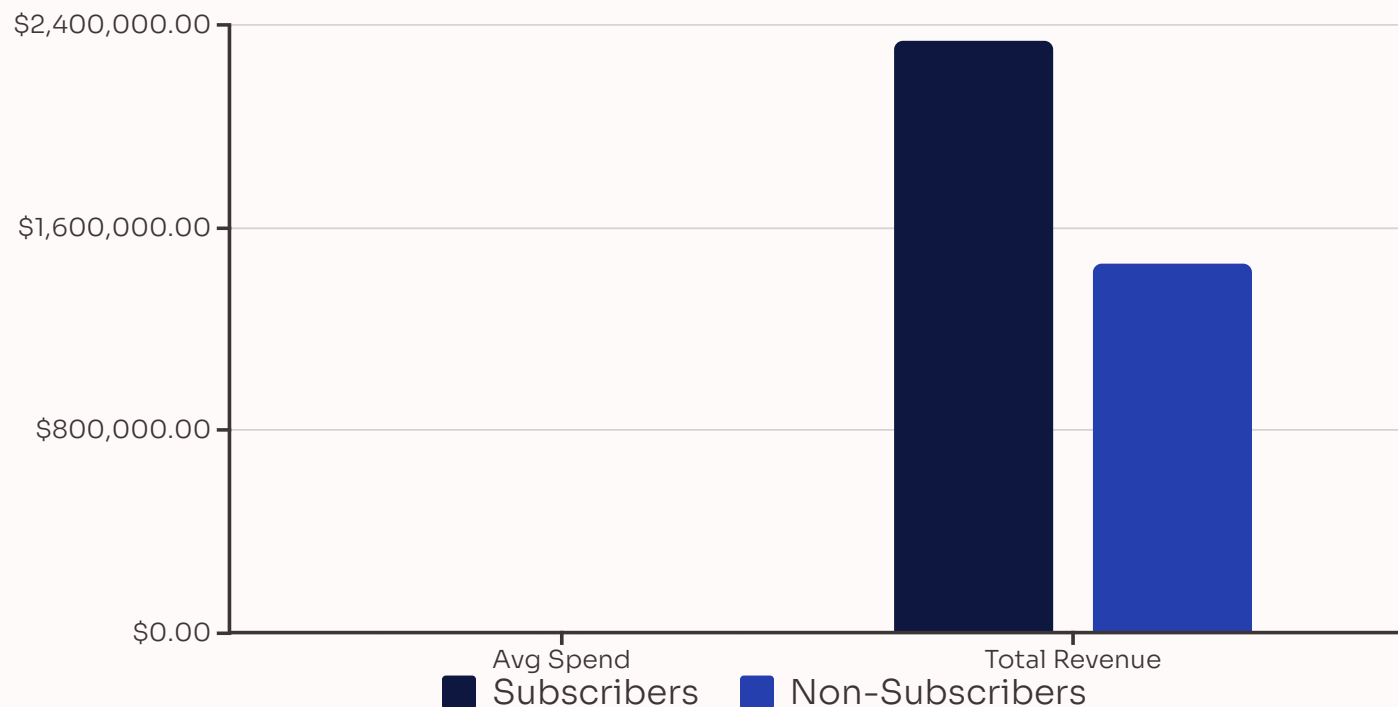
Highest Rated Products

1. Dress – 4.2 stars
2. Shirt – 4.1 stars
3. Blouse – 4.0 stars
4. Sweater – 3.9 stars
5. Jacket – 3.8 stars

High Spend

Lower Shipping Cost

Higher Shipping Cost

High Value, Low Cost: Standard $58 avg

High Value, High Cost: Express $62 avg

Low Value, High Cost: Rare Express Use

Low Value, Low Cost: Occasional Standard Users

Low Spend

Express shipping users spend 7% more on average, indicating higher-value customer segment.

Subscribers Drive Higher Value

Subscription Impact

Subscribers generate 60% more total revenue despite similar average spend per transaction.

Higher purchase frequency drives overall value.

Made with GAMMA

Customer Segmentation Analysis

New Customers

First-time buyers exploring product range

Returning Customers
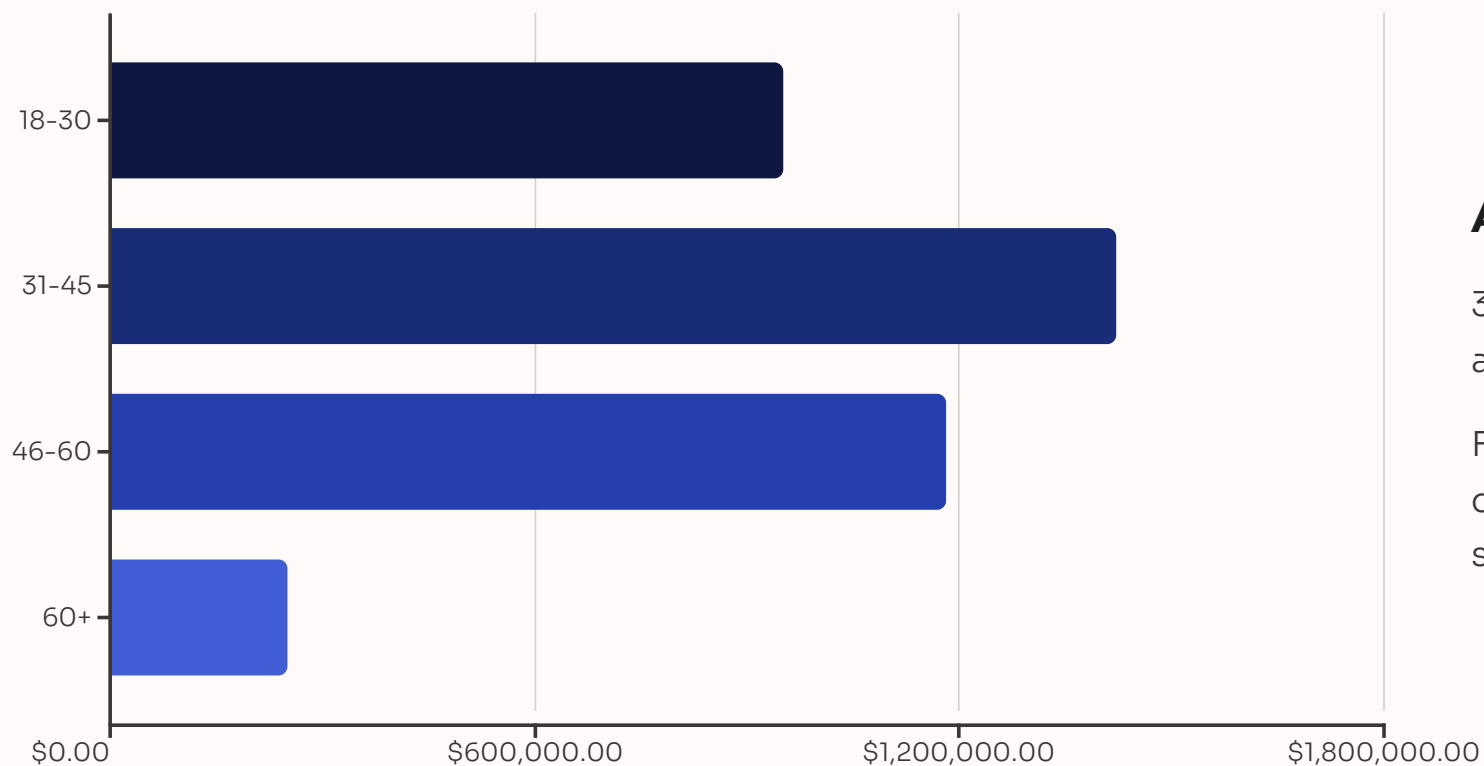
2-5 purchases, building relationship

Loyal Customers

5+ purchases, high lifetime value

Repeat buyers with 5+ purchases show 73% subscription rate vs 27% for occasional shoppers.

Revenue by Age Group

Age-Based Targeting

31-45 age group drives highest revenue at 37% of total sales.

Focus marketing efforts on this prime demographic while nurturing younger segments for long-term growth.

Strategic Action Plan

Boost Subscriptions

Promote exclusive benefits to convert high-frequency buyers

Loyalty Programs

Reward repeat buyers to accelerate movement into loyal segment

Review Discount Policy

Balance promotional sales boosts with margin control

Product Positioning

Highlight top-rated items in marketing campaigns

Targeted Marketing

Focus on 31-45 age group and express-shipping users