

Customer Shopping Behavior Analysis

Uncovering insights from transactional data to guide strategic business decisions.

CUSTOMER BEHAVIOR



Project Overview

Data Analysis

Analyzed 3,900 purchases across product categories.

Key Insights

Spending patterns, customer segments, product preferences, subscription behavior.

Strategic Goals

Optimize operations, enhance customer experience, drive growth.

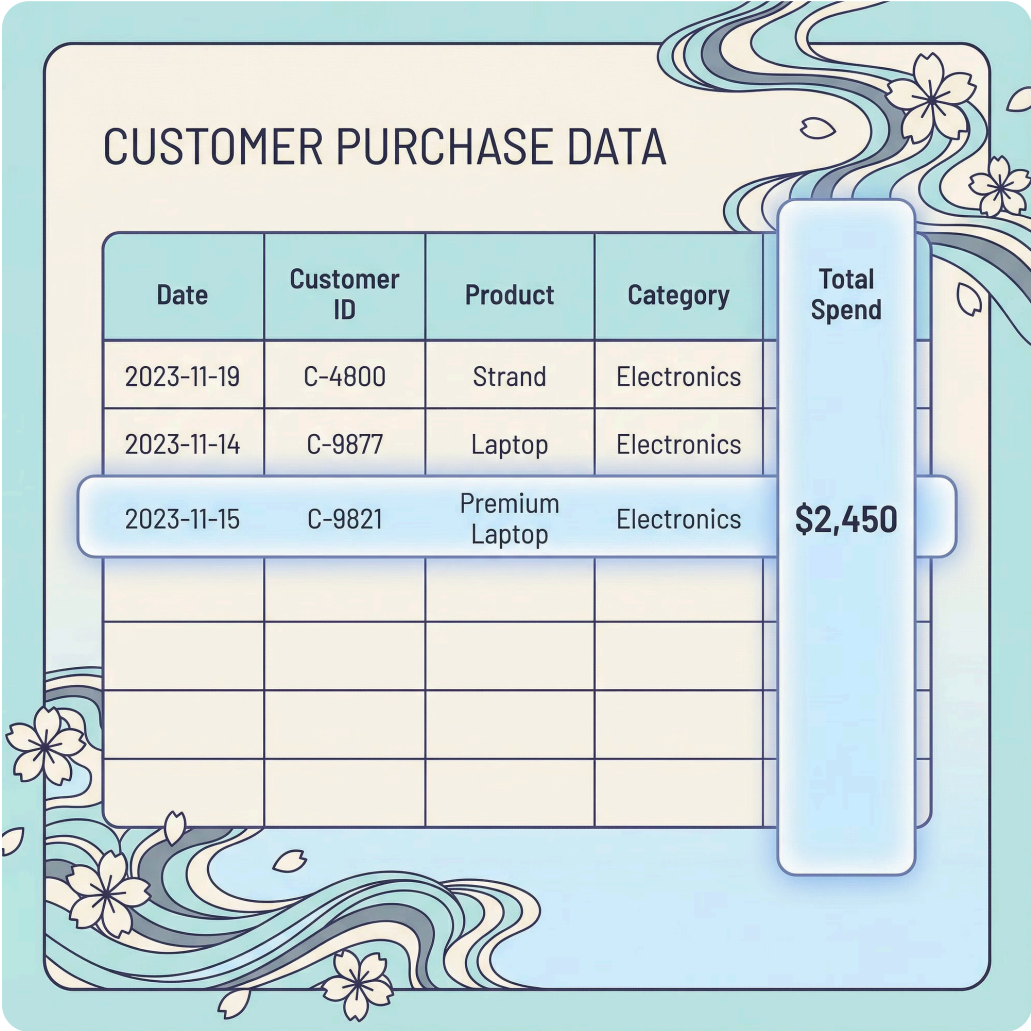
Dataset Summary

Dataset Snapshot

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

Key Features

- Demographics: Age, Gender, Location, Subscription Status
- Purchase Details: Item, Category, Amount, Season, Size, Color
- Behavior: Discount, Promo Code, Previous Purchases, Frequency, Review, Shipping



Date	Customer ID	Product	Category	Total Spend
2023-11-19	C-4800	Strand	Electronics	
2023-11-14	C-9877	Laptop	Electronics	
2023-11-15	C-9821	Premium Laptop	Electronics	\$2,450

Exploratory Data Analysis (Python)

01

Data Loading & Exploration

Imported with pandas, checked structure and summary statistics.

02

Missing Data Handling

Imputed Review Rating using median per product category.

03

Column Standardization

Renamed columns to snake_case for readability.

04

Feature Engineering

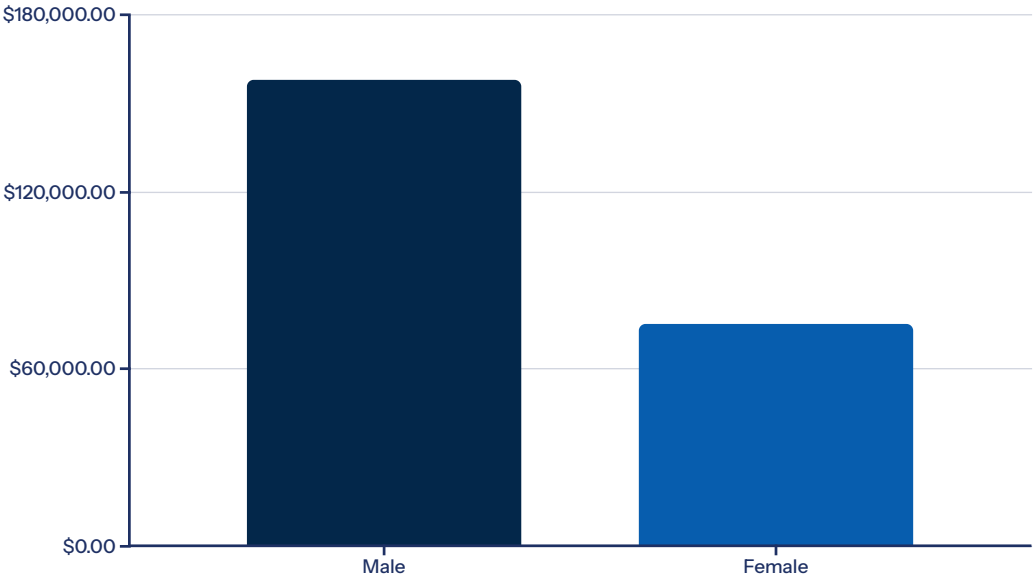
Created age_group and purchase_frequency_days.

05

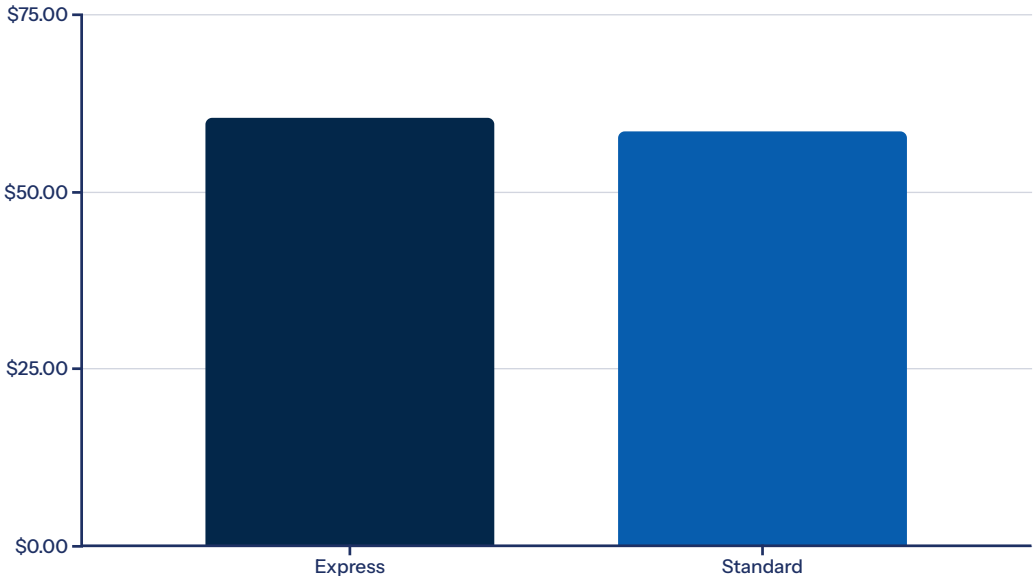
Database Integration

Loaded cleaned data into MySQL for SQL analysis.

Revenue by Gender & Shipping



Male customers generated significantly higher revenue.



Express shipping users have slightly higher average spend.

Top Products & Discounts

1

Top 5 Products by Rating

- Gloves: 3.86
- Sandals: 3.84
- Boots: 3.82
- Hat: 3.80
- Skirt: 3.78

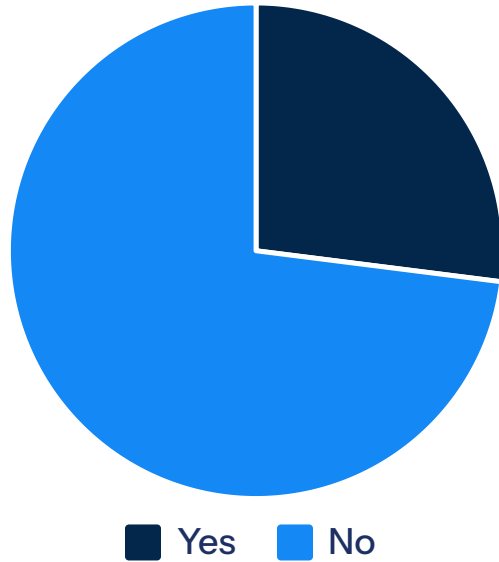
2

Discount-Dependent Products

- Hat: 50.00%
- Sneakers: 49.66%
- Coat: 49.07%
- Sweater: 48.17%
- Pants: 47.37%



Subscription & Loyalty



Subscribers have slightly lower average spend but contribute significantly to revenue.

Customer Segments

- Loyal: 3116
- Returning: 701
- New: 83

Repeat Buyers & Subscriptions

980 repeat buyers are subscribers, 2583 are not.

Top Products by Category



Accessories

Jewelry, Belt, Sunglasses



Clothing

Pants, Blouse, Shirt



Footwear

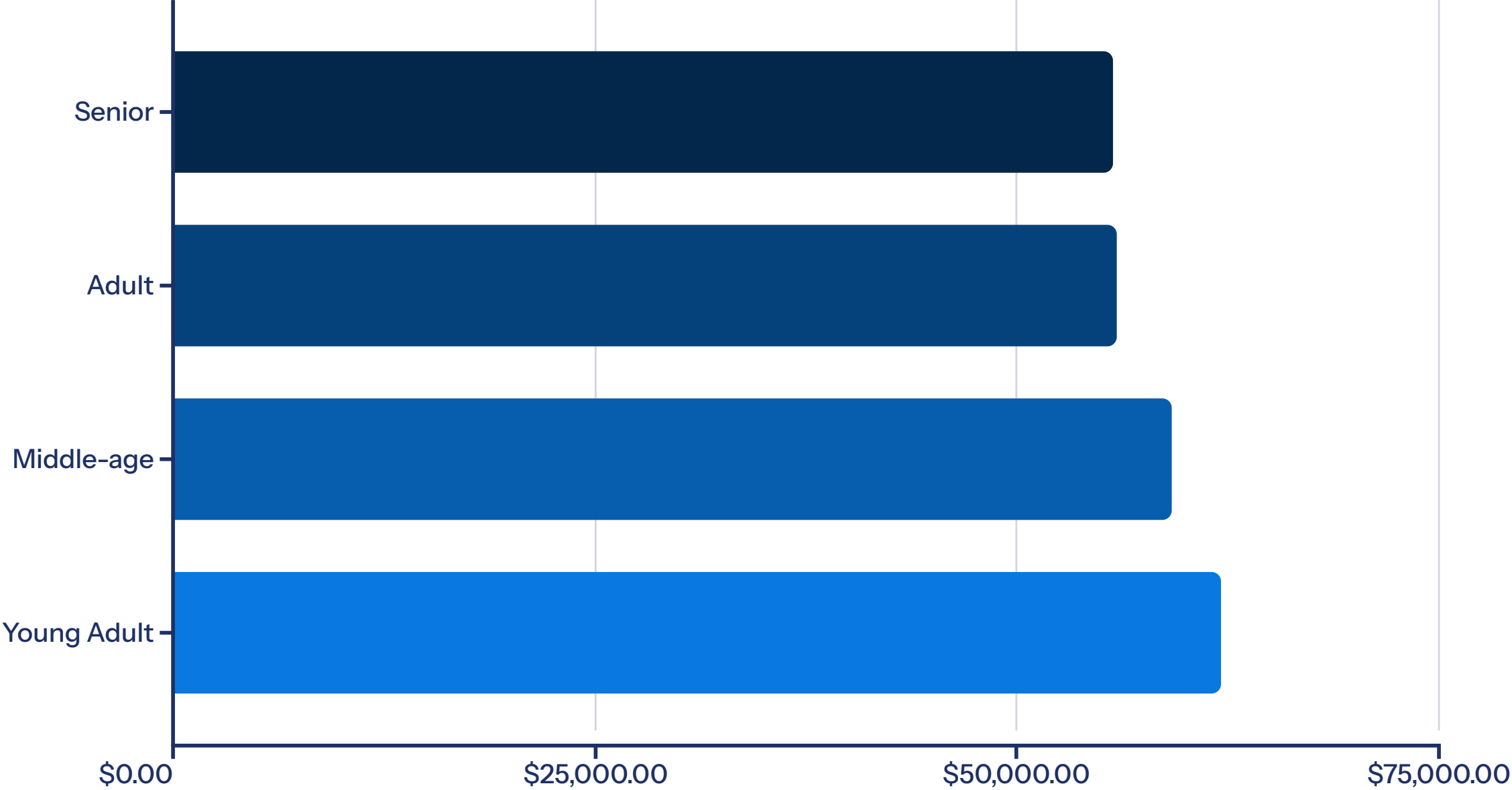
Sandals, Shoes, Sneakers



Outerwear

Jacket, Coat

Revenue by Age Group



Young Adults contribute the highest revenue, followed by Middle-age customers.



Business Recommendations



Boost Subscriptions

Promote exclusive benefits.



Customer Loyalty

Reward repeat buyers.



Review Discount Policy

Balance sales with margins.



Targeted Marketing

Focus on high-revenue age groups & express shipping users.