Customer Shopping Behavior Analysis

Uncovering insights from transactional data to guide strategic business decisions.

Project Overview

Data Source

3,900 purchases across product categories.

Key Goals

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

Impact

Optimize operations, reduce costs, improve forecasting.

Dataset Summary

Rows: 3,900
Columns: 18

- Customer demographics (Age, Gender, Location, Subscription Status)

- Purchase details (Item, Category, Amount, Season, Size, Color)

- Shopping behavior (Discount, Promo Code, Previous Purchases, Frequency, Review Rating, Shipping)

Missing Data: 37 values in Review Rating column.

Data Exploration & Preparation

01

Data Loading

Imported dataset using `pandas`.

02

Initial Exploration

Checked structure and summary statistics.

03

Missing Data Handling

Imputed `Review Rating` using median by category.

04

Column Standardization

Renamed columns to snake case.
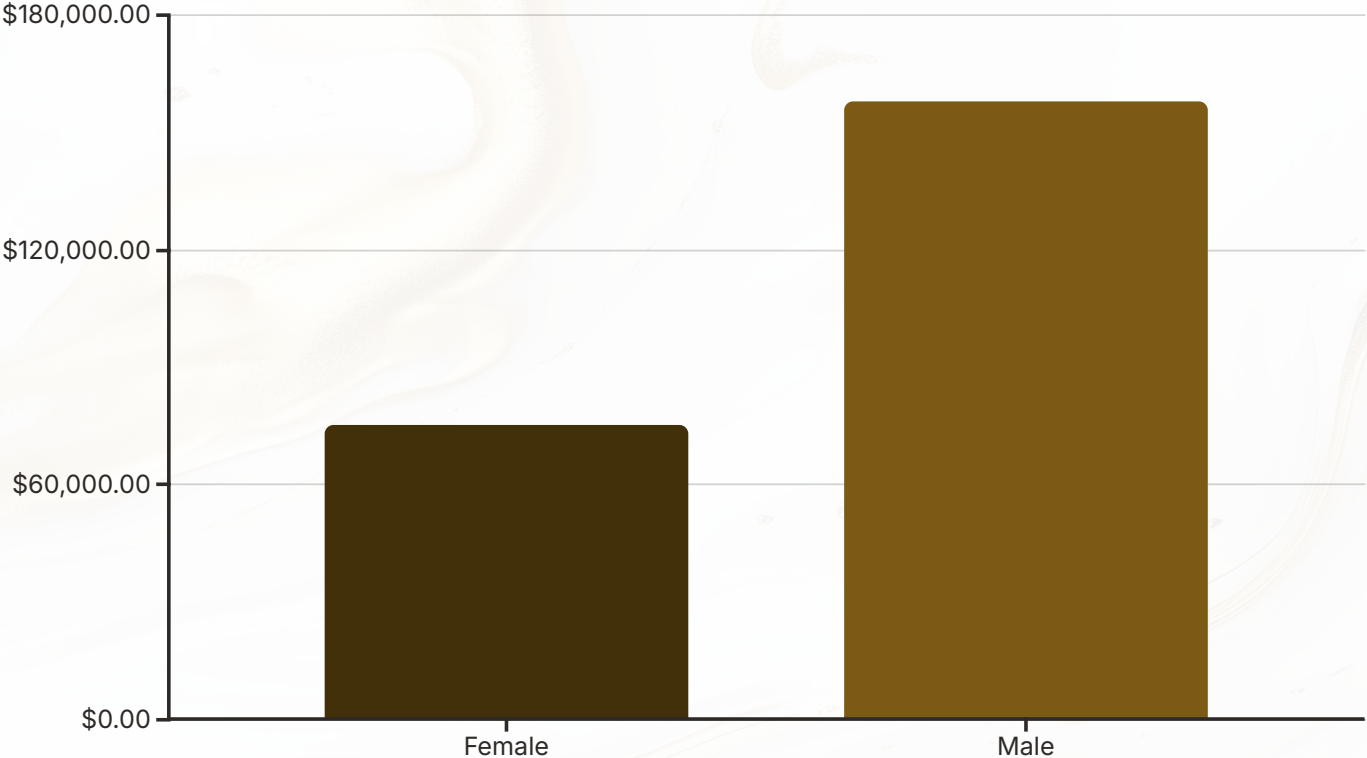
05

Feature Engineering

Created `age_group` and `purchase_frequency_days`.

06

Data Consistency

Dropped redundant `promo_code_used`.
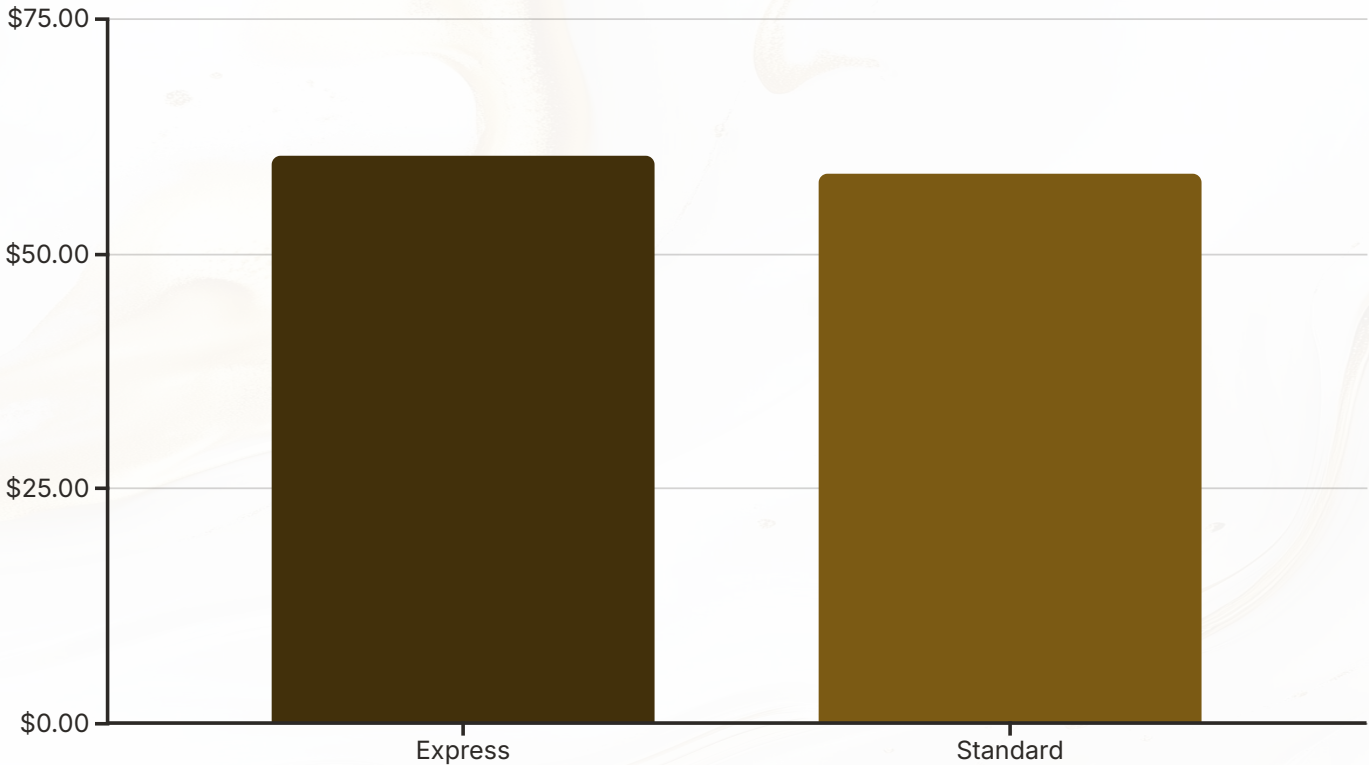
Key Insights: Revenue & Products

Male customers generate significantly more revenue.

Top 5 Products by Rating

Gloves	3.86
Sandals	3.84
Boots	3.82
Hat	3.80
T-shirt	3.78

Highlighting top-rated items for marketing.

Shipping & Subscription Analysis

Bar chart showing average purchase amounts for Express (~$60) and Standard (~$58) shipping, y-axis ranging from $0.00 to $75.00.
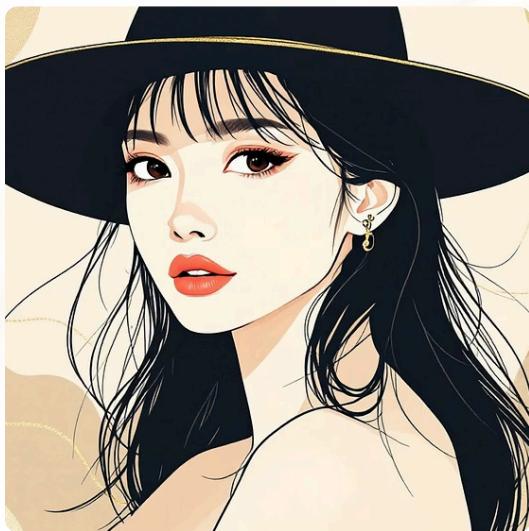
Express shipping users have higher average purchases.

Subscribers vs. Non-Subscribers

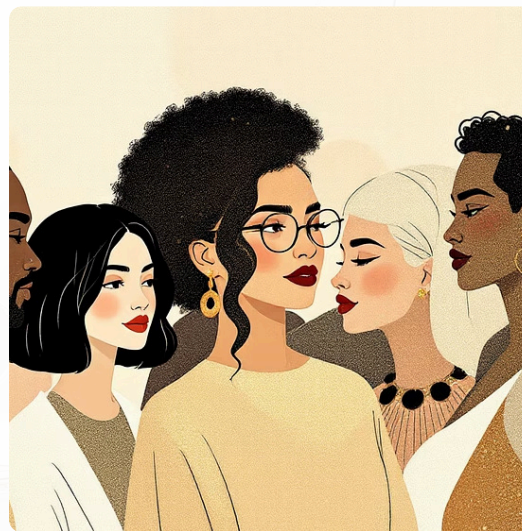| No	2847 customers	$170,436 total revenue
Yes	1053 customers	$62,645 total revenue

Non-subscribers contribute more to overall revenue.

Discount & Segmentation
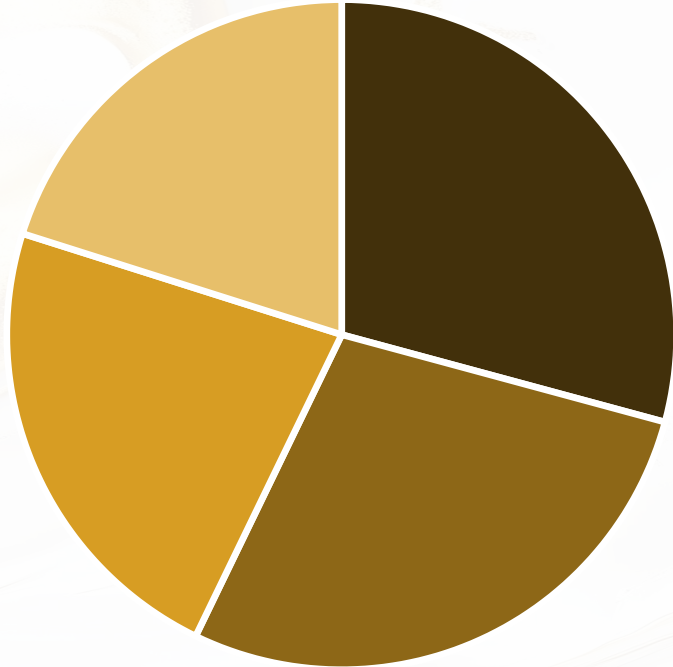

Discount-Dependent Products

Hat (50%), Sneakers (49.66%), Coat (49.07%), Sweater (48.17%), Pants (47.37%).

Customer Segmentation

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

Age Group Revenue & Repeat Buyers

Middle Aged ■ **Adult** ■ **Young Adult** ■ **Senior**

Middle-aged and adult groups drive the most revenue.

Repeat Buyers & Subscriptions

Subscribed	958 repeat buyers
Not Subscribed	2518 repeat buyers

Repeat buyers are more likely to subscribe.

Made with GAMMA

Interactive Dashboard

Visualizing key metrics and trends for dynamic decision-making.

Business Recommendations

Boost Subscriptions

Promote exclusive benefits.

Customer Loyalty

Reward repeat buyers.

Review Discount Policy

Balance sales with margins.

Product Positioning

Highlight top-rated items.

Targeted Marketing

Focus on high-revenue groups.