

Customer Shopping Behavior Analysis

Uncovering insights from 3,900 purchases to guide strategic business decisions through data-driven analysis of spending patterns, customer segments, and product preferences.





PROJECT SCOPE

Dataset Overview

3,900

Total Purchases

Transactions analyzed across
all categories

18

Data Features

Comprehensive customer and
purchase attributes

50

Locations

Geographic diversity in
customer base

25

Product Types

Diverse item catalog analyzed



PYTHON

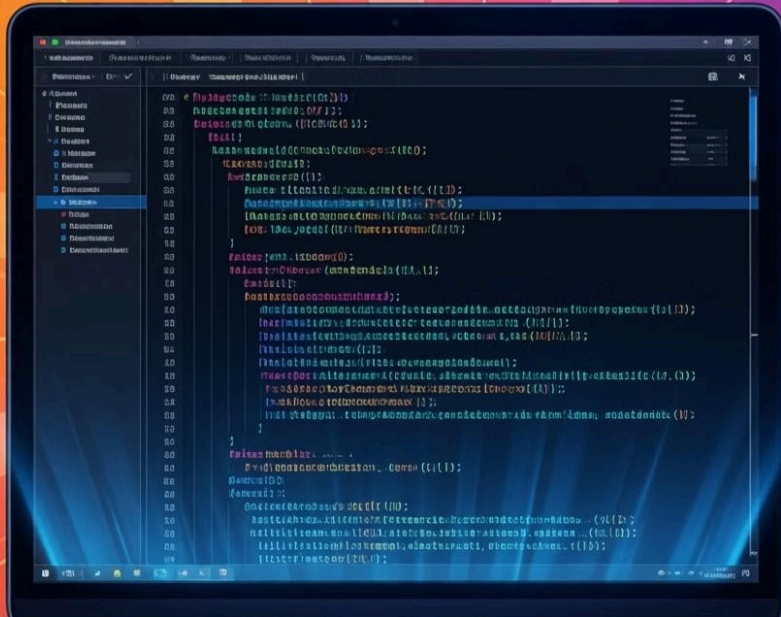
Data Preparation & Cleaning

Initial Exploration

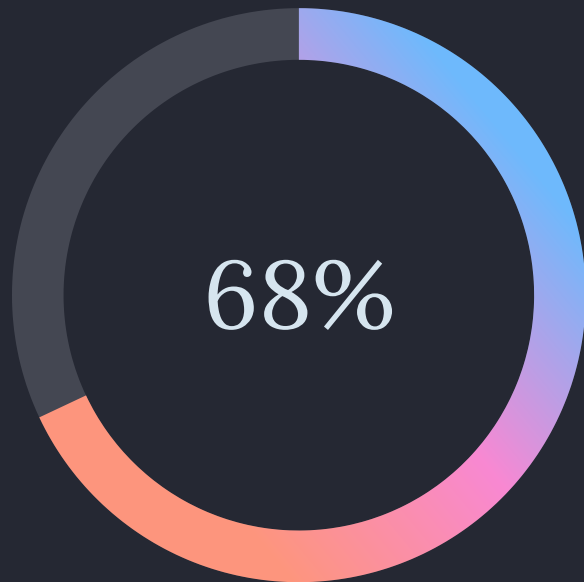
- Loaded dataset using pandas
- Checked structure with df.info()
- Generated summary statistics
- Identified 37 missing values in Review Rating

Data Transformation

- Imputed missing ratings using category medians
- Standardized columns to snake_case
- Created age_group bins
- Dropped redundant promo_code_used column

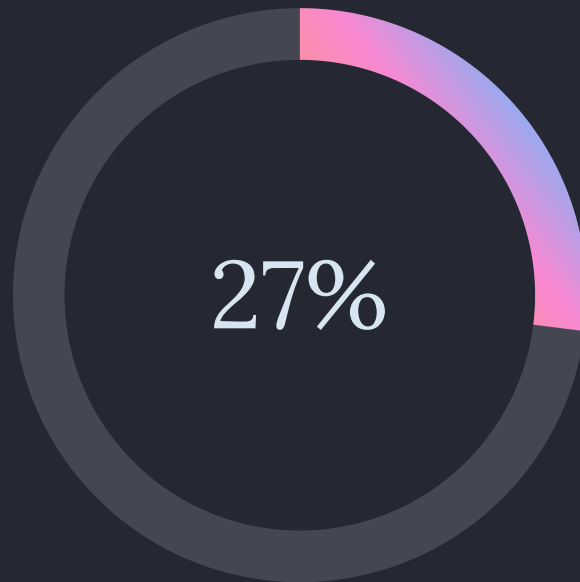


Customer Demographics



Male Customers

2,652 male shoppers dominate the customer base



Subscribers

1,053 customers with active subscriptions



Median Age

Average customer age across all segments

Age range spans from 18 to 70 years, with customers distributed across Young Adult, Adult, Middle-aged, and Senior segments.

Revenue Insights

Gender Revenue Gap

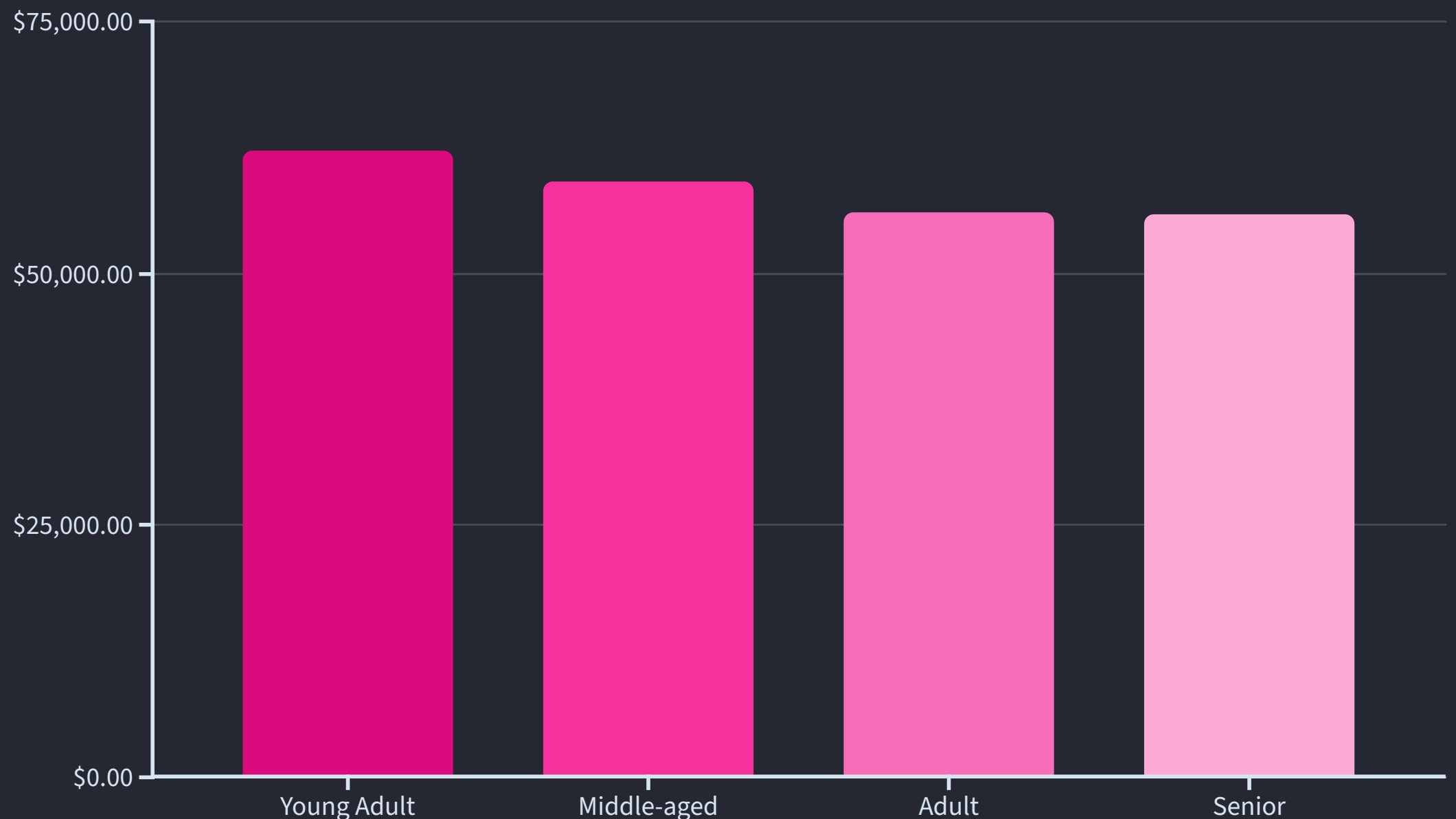
Male customers generated **\$157,890** compared to female customers' **\$75,191** in total revenue

Average Purchase

\$59.76 average spend per transaction across all customer segments

Express Shipping Premium

Express shipping users spend **\$60.48** vs. **\$58.46** for standard shipping



Product Performance

Top-Rated Products



Gloves



Boots



Skirt



Sandals



Hat

Category Leaders

- **Clothing:** Blouse (171 orders)
- **Accessories:** Jewelry (171 orders)
- **Footwear:** Sandals (160 orders)
- **Outerwear:** Jacket (163 orders)

Discount Strategy Analysis

High-Value Discount Users

839 customers used discounts but still spent above the \$59.76 average, indicating price-conscious yet high-value shoppers

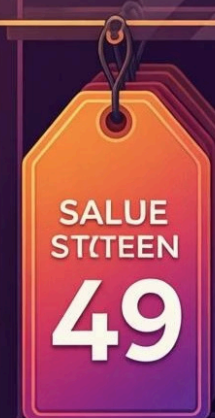
Discount-Dependent Products

Hat leads with **50% discount rate**, followed by Sneakers (49.66%), Coat (49.07%), Sweater (48.17%), and Pants (47.37%)

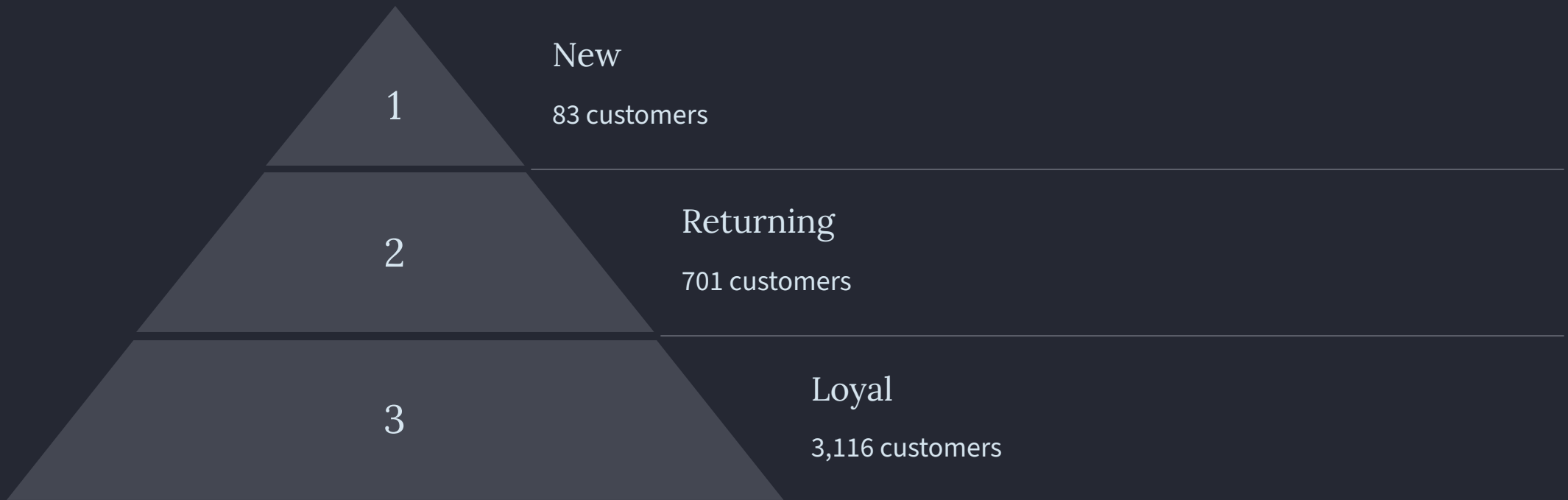
Strategic Opportunity

Balance promotional sales boosts with margin control to optimize profitability without sacrificing volume

SALLE



Building Customer Loyalty

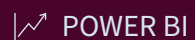


Subscription Impact

Subscribers average **\$59.49** per purchase with **\$62,645** total revenue, while non-subscribers spend **\$59.87** with **\$170,436** total revenue.

Repeat Buyer Behavior

Among customers with 5+ purchases: **958 are subscribers** and **2,518 are not**, revealing untapped subscription potential.



Interactive Dashboard



Customer Metrics

3.9K customers tracked with 3.75 average review rating across all purchases



Category Performance

Clothing leads with 1,800 sales and \$100K revenue, followed by Accessories



Dynamic Filtering

Interactive filters for subscription status, gender, category, and shipping type



Strategic Recommendations



Boost Subscriptions

Promote exclusive benefits to convert the 2,518 repeat buyers without subscriptions into loyal subscribers



Loyalty Programs

Reward repeat buyers to accelerate their journey from Returning (701) to Loyal (3,116) segment



Optimize Discounts

Review discount policy for high-dependency products while maintaining margin control



Targeted Marketing

Focus campaigns on Young Adults (\$62K revenue), top-rated products, and express-shipping users