

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.



The Foundation: Our Data

3,900

Total Purchases

Comprehensive
transactional records
analyzed

18

Data Features

Key attributes tracked per
transaction

\$59.76

Avg Purchase

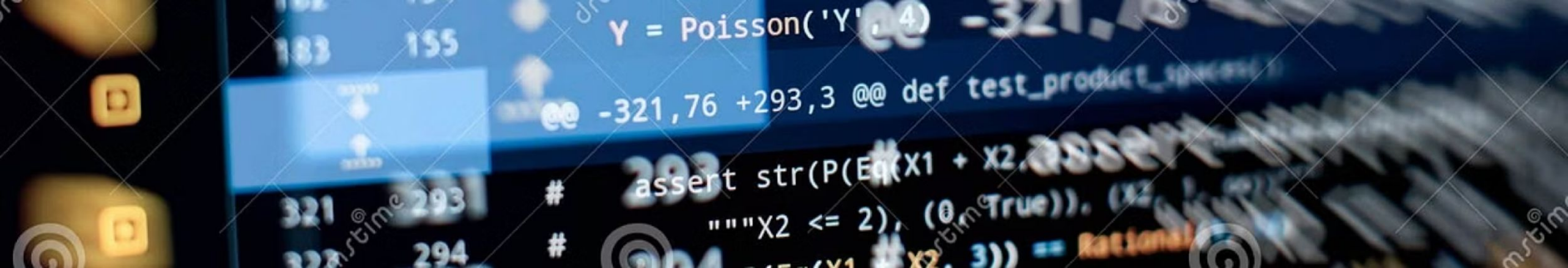
Mean transaction value
across all customers

3.75

Avg Rating

Customer satisfaction score
out of 5

Dataset includes customer demographics, purchase details, shopping behavior patterns, and subscription status across various product categories and locations.



Data Preparation Journey

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1 Data Loading & Exploration

Imported dataset using pandas and examined structure with info() and describe() functions

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3 Feature Engineering

Created age_group bins and purchase_frequency_days columns for deeper analysis

0

2 Missing Data Handling

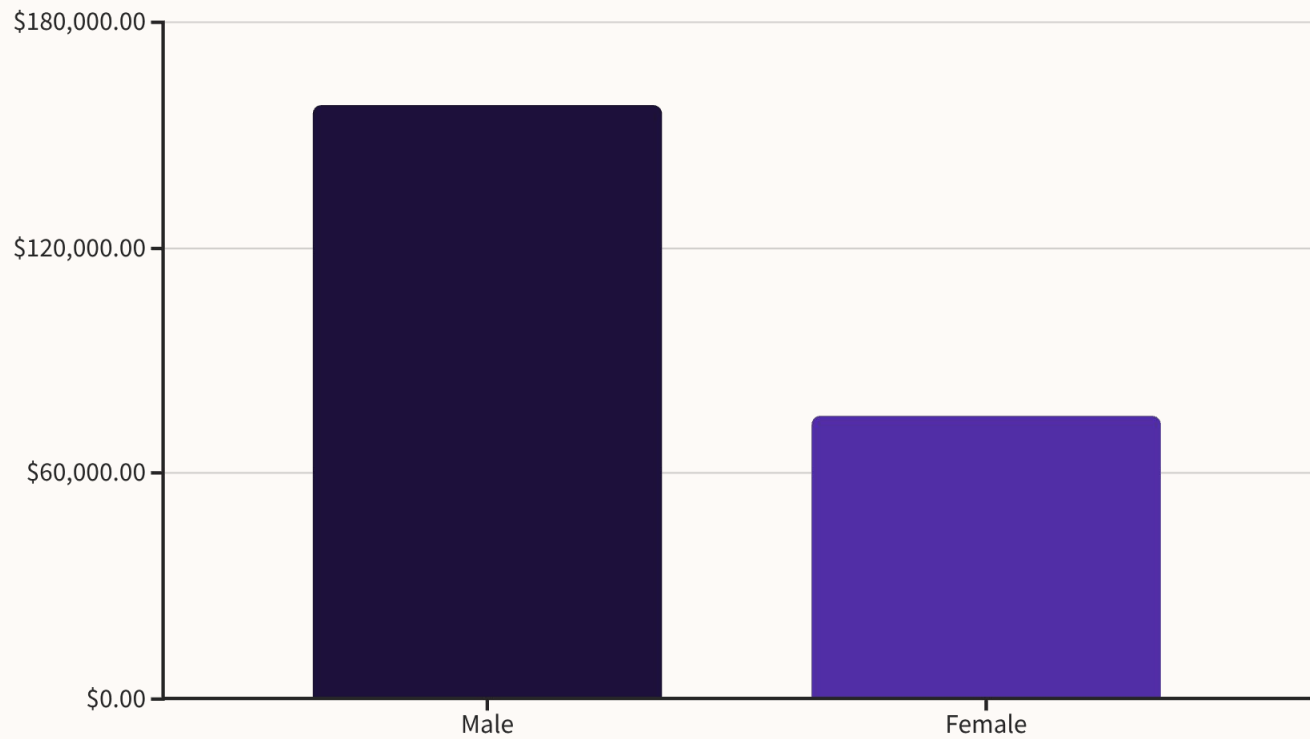
Imputed 37 missing Review Rating values using median rating per product category

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4 Database Integration

Connected to PostgreSQL and loaded cleaned data for SQL-based business analysis

Revenue Insights by Demographics



Gender Revenue Gap

Male customers generate **2.1x more revenue** than female customers, representing \$157,890 versus \$75,191 in total purchases.

This significant disparity suggests opportunities for targeted marketing campaigns to increase female customer engagement and spending.

Customer Segmentation Analysis

Loyal Customers 3,116 customers

Highest
engagement with
multiple repeat
purchases

Returning Customers 701 customers

Moderate
engagement
showing growth
potential

New Customers 83 customers

Fresh acquisitions
requiring
nurturing
strategies

The majority of our customer base (80%) falls into the Loyal segment, indicating strong retention but highlighting the need to convert new and returning customers into loyal advocates.



Top-Performing Products

Highest-Rated Items

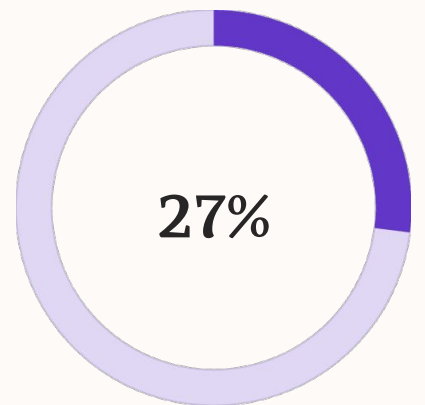
- 1 Gloves**
3.86 average rating
- 2 Sandals**
3.84 average rating
- 3 Boots**
3.82 average rating
- 4 Hat**
3.80 average rating
- 5 Skirt**
3.78 average rating



These top-rated products should be prominently featured in marketing campaigns and promotional materials to drive sales.

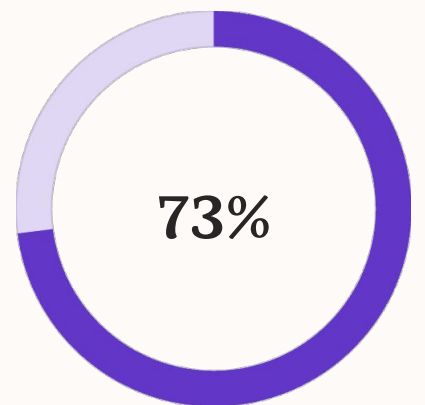
Subscription & Discount Behavior

Subscription Status



Subscribers

1,053 customers with subscriptions



Non-Subscribers

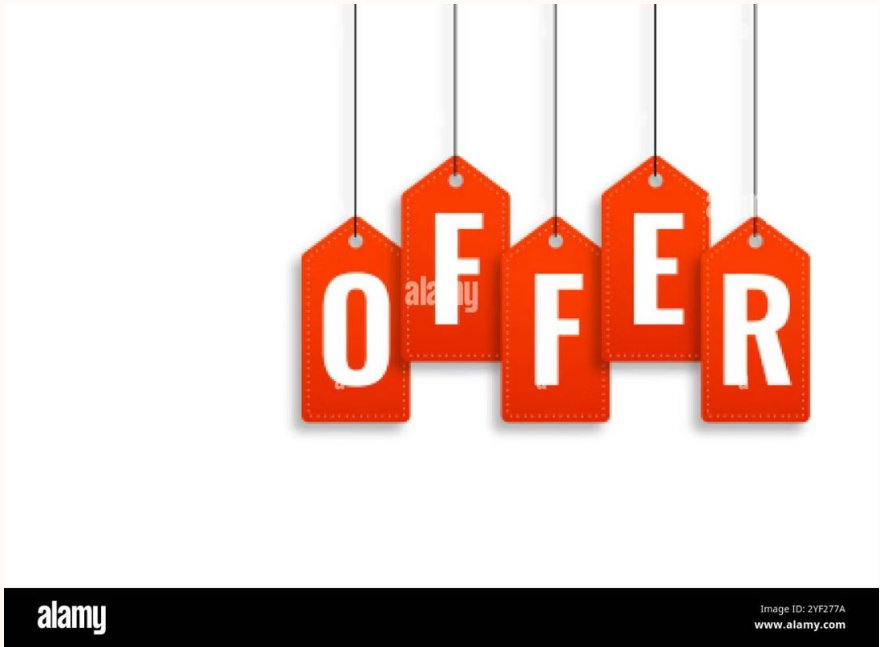
2,847 customers without subscriptions

Subscribers average **\$59.49** per purchase while non-subscribers average **\$59.87**, showing minimal spending difference.

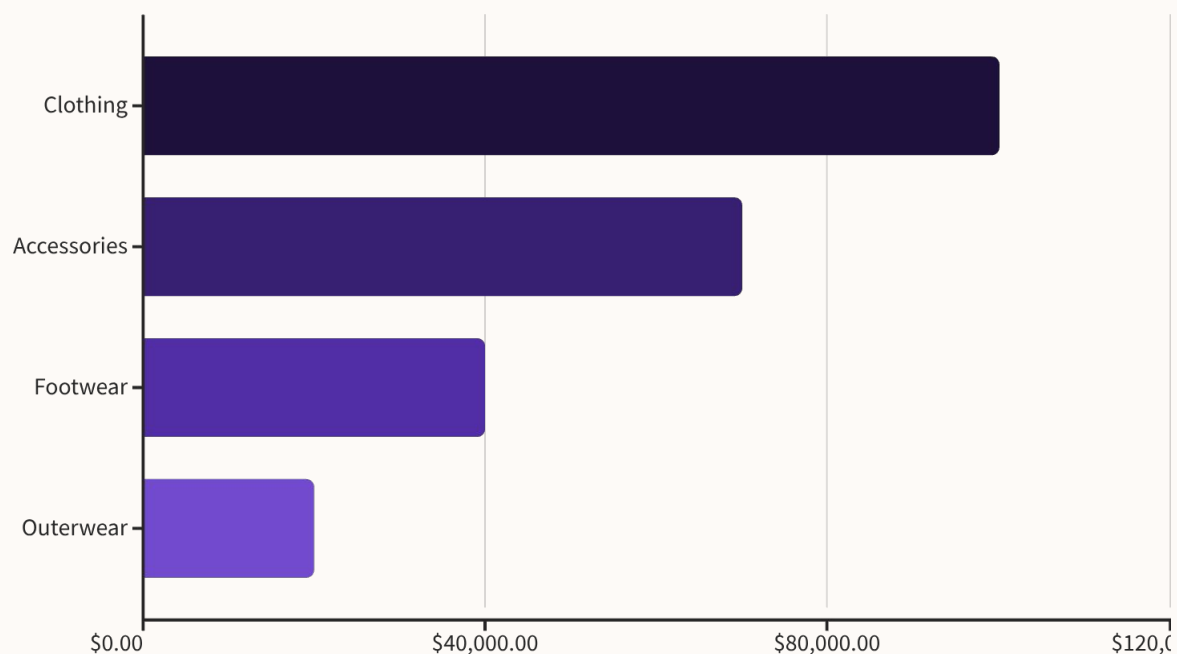
Discount Insights

839 customers used discounts but still spent **above average**, indicating price-conscious yet high-value shoppers.

958 repeat buyers (>5 purchases) are subscribers, suggesting subscription programs effectively retain loyal customers.



Revenue Distribution Across Categories



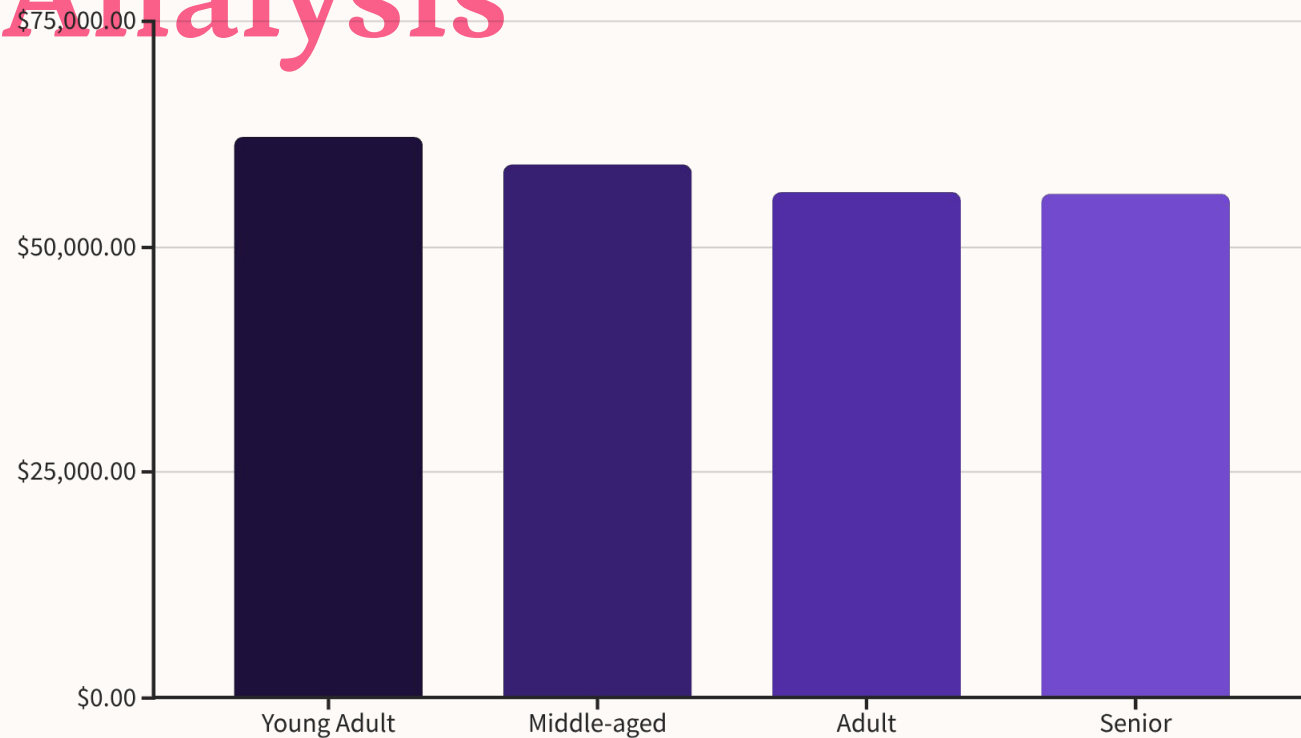
Category Performance

Clothing dominates revenue at **\$100K**, representing 43% of total sales. Accessories follow at \$70K, while Footwear and Outerwear contribute \$40K and \$20K respectively.

Top products per category: Blouse (Clothing), Jewelry (Accessories), Sandals (Footwear), and Jacket (Outerwear) lead their segments.

Age Group Revenue

Analysis



Generational Spending

Young Adults lead revenue generation at \$62,143, followed closely by Middle-aged customers at \$59,197. Revenue distribution is relatively balanced across age groups.

Express shipping users show higher average purchases (\$60.48) versus Standard (\$58.46), suggesting premium service attracts higher spenders.

Strategic Recommendations

1

Boost Subscriptions

Promote exclusive benefits to convert the 73% non-subscriber base into recurring revenue

2

Loyalty Programs

Reward repeat buyers to accelerate movement from Returning to Loyal segment

3

Review Discount Policy

Balance promotional sales boosts with margin control for sustainable profitability

4

Product Positioning

Highlight top-rated items (Gloves, Sandals, Boots) in marketing campaigns

5

Targeted Marketing

Focus efforts on high-revenue Young Adults and express-shipping premium customers