



Customer Shopping Behavior Analysis

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

Dataset Overview

3,900

Total Purchases

Transactions analyzed
across all categories

18

Data Points

Comprehensive customer
and purchase attributes

50

Locations

Geographic diversity in
customer base

4

Categories

Clothing, Footwear,
Accessories, Outerwear

Customer Data

- Age, Gender, Location
- Subscription Status
- Purchase History

Transaction Details

- Product, Category, Amount
- Season, Size, Color
- Discounts & Ratings

Data Preparation Journey

01

Data Loading & Exploration

Imported dataset using pandas, analyzed structure with df.info() and summary statistics

02

Missing Data Handling

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

03

Feature Engineering

Created age_group bins and purchase_frequency_days for deeper analysis

04

Data Standardization

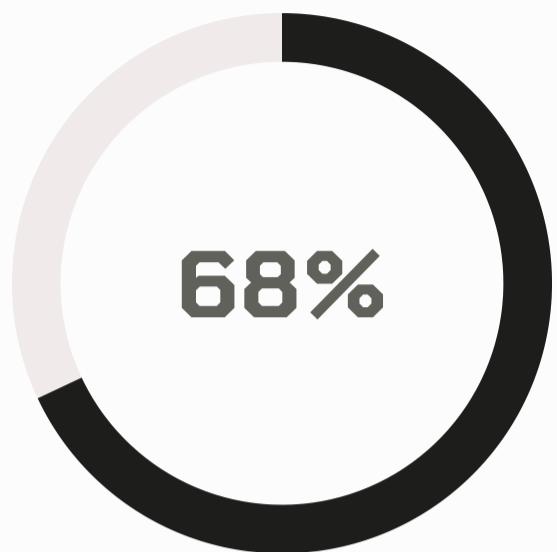
Renamed columns to snake_case, removed redundant promo_code_used field

05

Database Integration

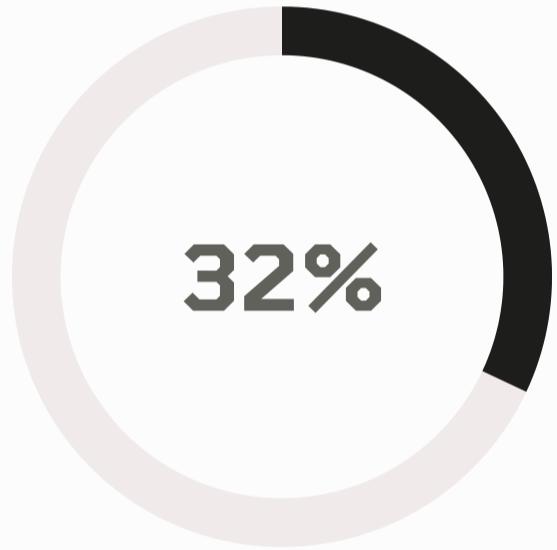
Connected to MySQL and loaded cleaned data for SQL analysis

Customer Demographics



Male Customers

2,652 of total customer base



Female Customers

1,248 of total customer base

Age Range

18-70 years

Average: 44 years

Average Spend

\$59.76 per purchase

Range: \$20-\$100

	gender	Revenue
→	Male	157890

Revenue Analysis by Gender

Male Customers

Higher total revenue due to larger customer base

Female Customers

Comparable average spend per transaction

Product Performance Insights

Top Rated: Gloves

3.86 average rating

Sandals

3.84 average rating

Boots

3.82 average rating

Most Purchased by Category

Clothing

Blouse (171 orders)

Pants (171 orders)

Accessories

Jewelry (171 orders)

Sunglasses (161 orders)

Footwear

Sandals (160 orders)

Shoes (150 orders)

Outerwear

Jacket (163 orders)

Coat (161 orders)

Discount & Promotion Impact

	customer_id	purchase_amount
▶	2	64
	3	73
	4	90
	7	85
	9	97
	12	68
	13	72
	16	81
	20	90
	22	62
	24	88
	29	94

High-Value Discount Users

Customers using discounts while spending above average

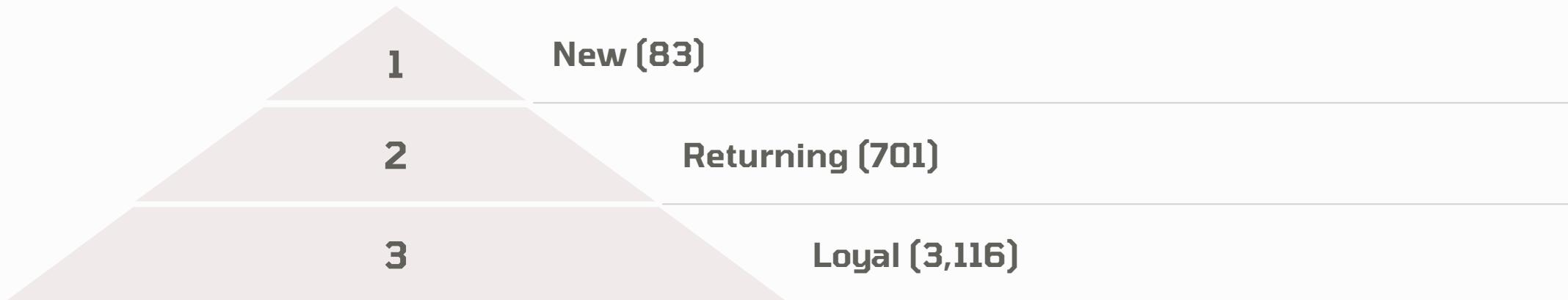
●●●●● 43%

Discount Usage Rate

Top Discounted Products

1. Hat (50% discount rate)
2. Sneakers (49.66%)
3. Coat (49.07%)
4. Sweater (48.17%)
5. Pants (47.37%)

Customer Segmentation



Customer classification based on purchase history reveals strong loyalty base

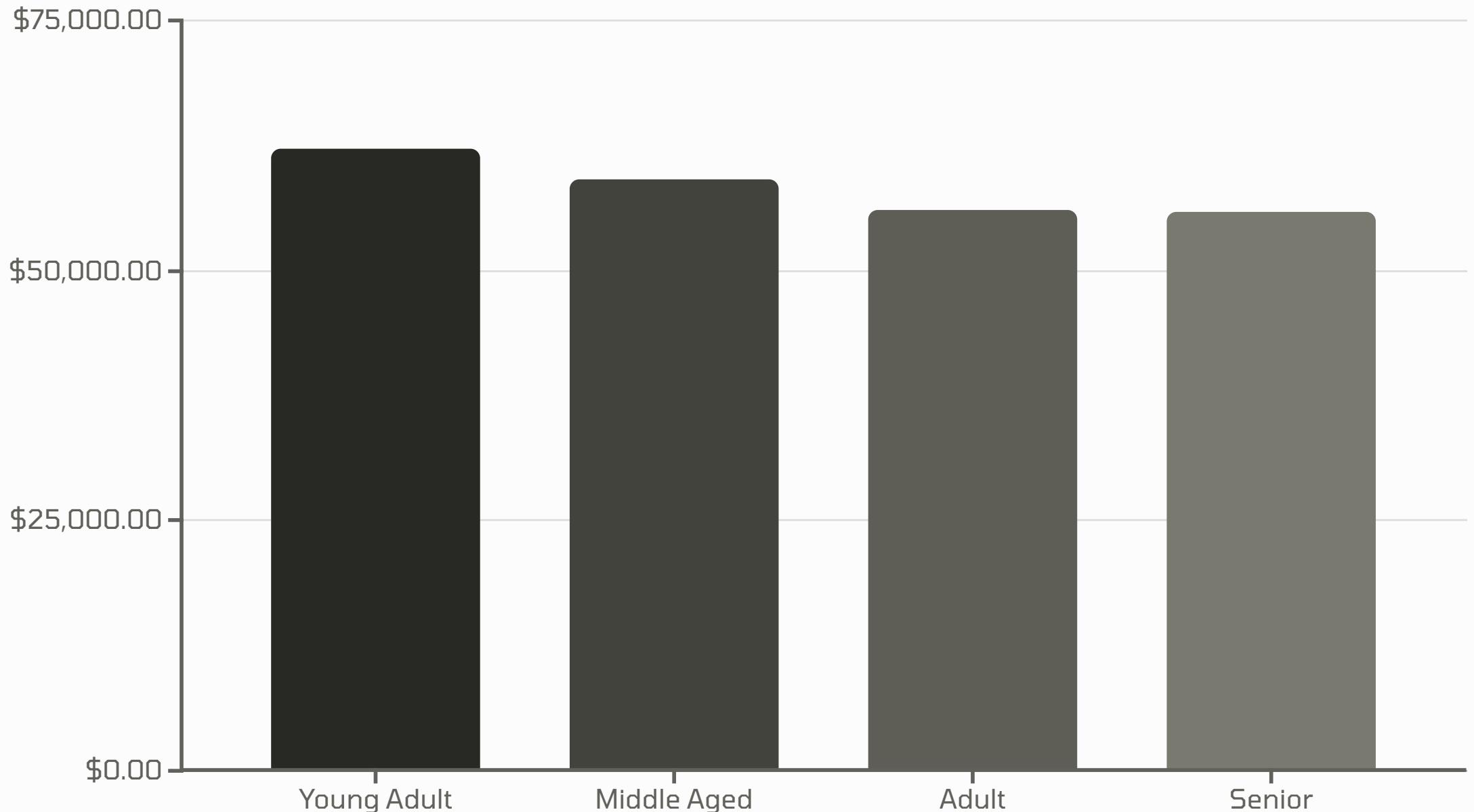
Subscription Status

- Subscribers: 1,053 customers
- Non-subscribers: 2,847 customers
- Average spend similar across both groups

Repeat Buyers

- 958 subscribers with 5+ purchases
- 2,518 non-subscribers with 5+ purchases
- Opportunity to convert repeat buyers

Revenue by Age Group



Shipping Preferences

Express: \$60.48 avg spend

Standard: \$58.46 avg spend

Key Insight

Young adults drive highest revenue; express shipping correlates with higher spend

Strategic Recommendations



Boost Subscriptions

Promote exclusive benefits to convert 2,518 repeat buyers



Loyalty Programs

Reward repeat buyers to strengthen loyal segment



Optimize Discounts

Balance sales growth with margin control



Targeted Marketing

Focus on young adults and express-shipping users



Product Positioning

Highlight top-rated items in campaigns