



Customer Shopping Behavior Analysis

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

Dataset Overview

3,900

Total Purchases

Transactions analyzed

18

Data Points

Features per customer

25

Product Types

Items purchased

4

Categories

Product segments

Key Features

- Customer demographics
- Purchase details & amounts
- Shopping behavior patterns
- Review ratings & feedback



Data Preparation Journey

01

Data Loading & Exploration

Imported dataset, checked structure and summary statistics

03

Column Standardization

Renamed to snake case for consistency and readability

05

Data Consistency

Verified redundancy and efficient data handling

02

Missing Data Handling

Imputed 37 missing review ratings using category-specific medians

04

Feature Engineering

Created age group and purchase frequency days columns

06

Database Integration

Connected to PostgreSQL for advanced SQL analysis



Revenue by Gender

Male Customers

\$157,890 total revenue

68% of total sales

Female Customers

\$75,191 total revenue

32% of total sales

Male customers generate more than double the revenue of female customers, indicating a significant opportunity for targeted marketing strategies.

Smart Discount Users

High-Value Discount Shoppers

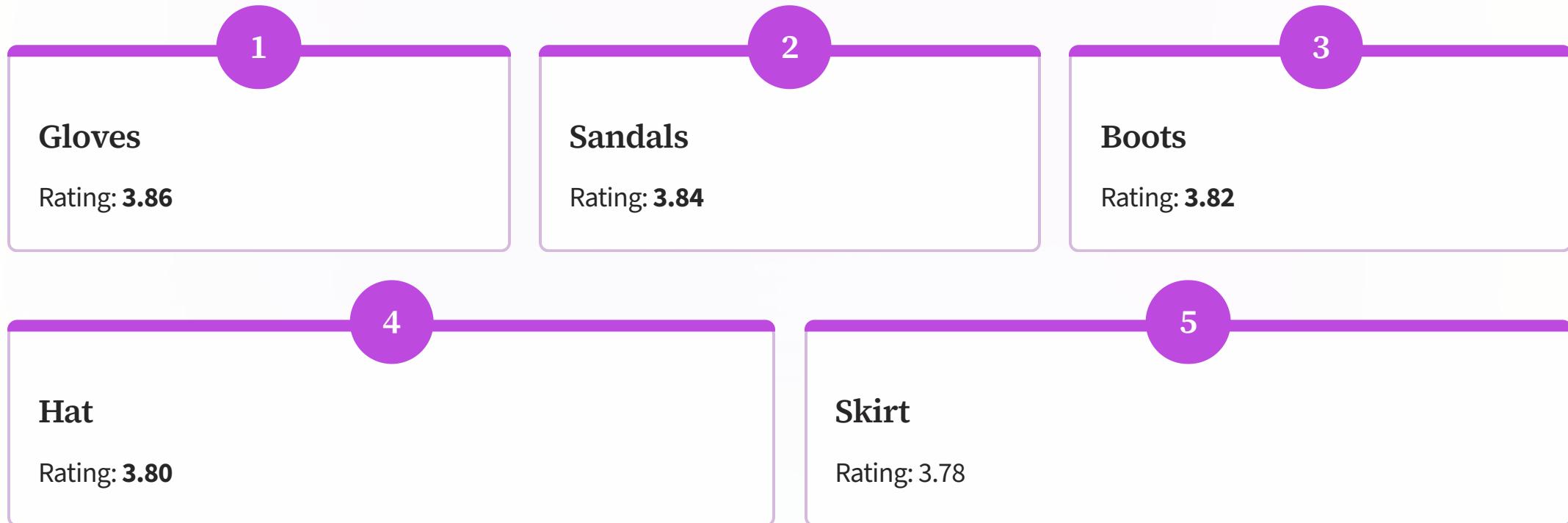
839 customers used discounts but still spent above average

- Average purchase: **\$60**
- These buyers: **\$64-\$97** range
- 21% of all customers

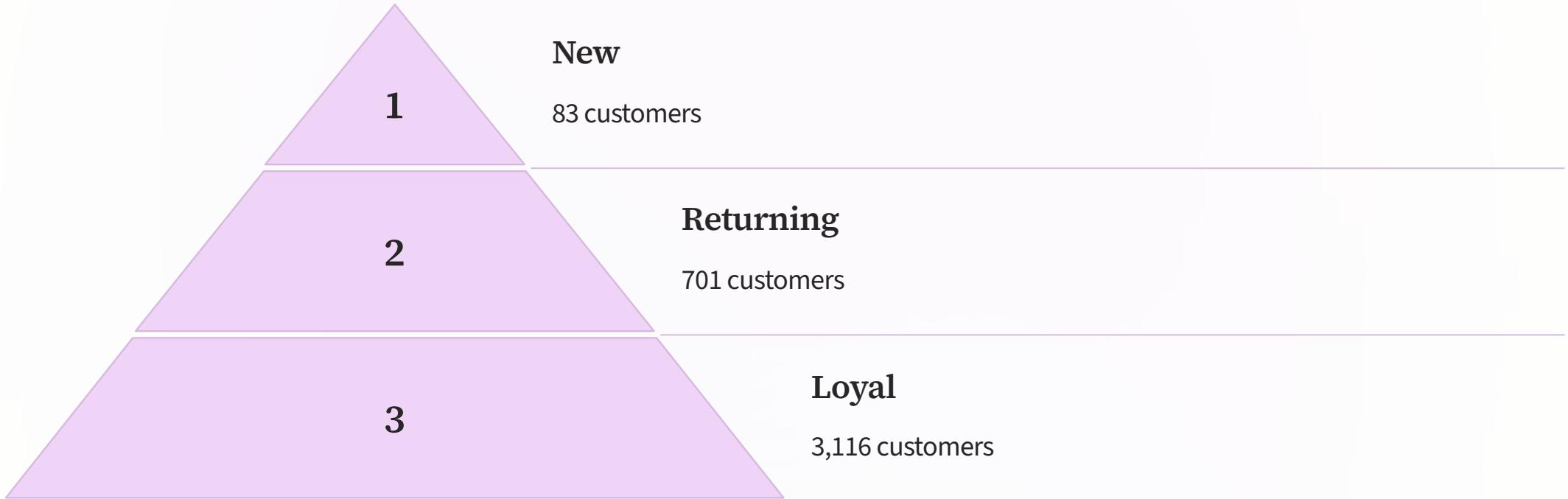
Discounts attract high-value customers who would spend more regardless—optimize discount strategy to balance volume and margin.



Top-Rated Products



Customer Segmentation Insights



New (1 purchase)

2% of customer base

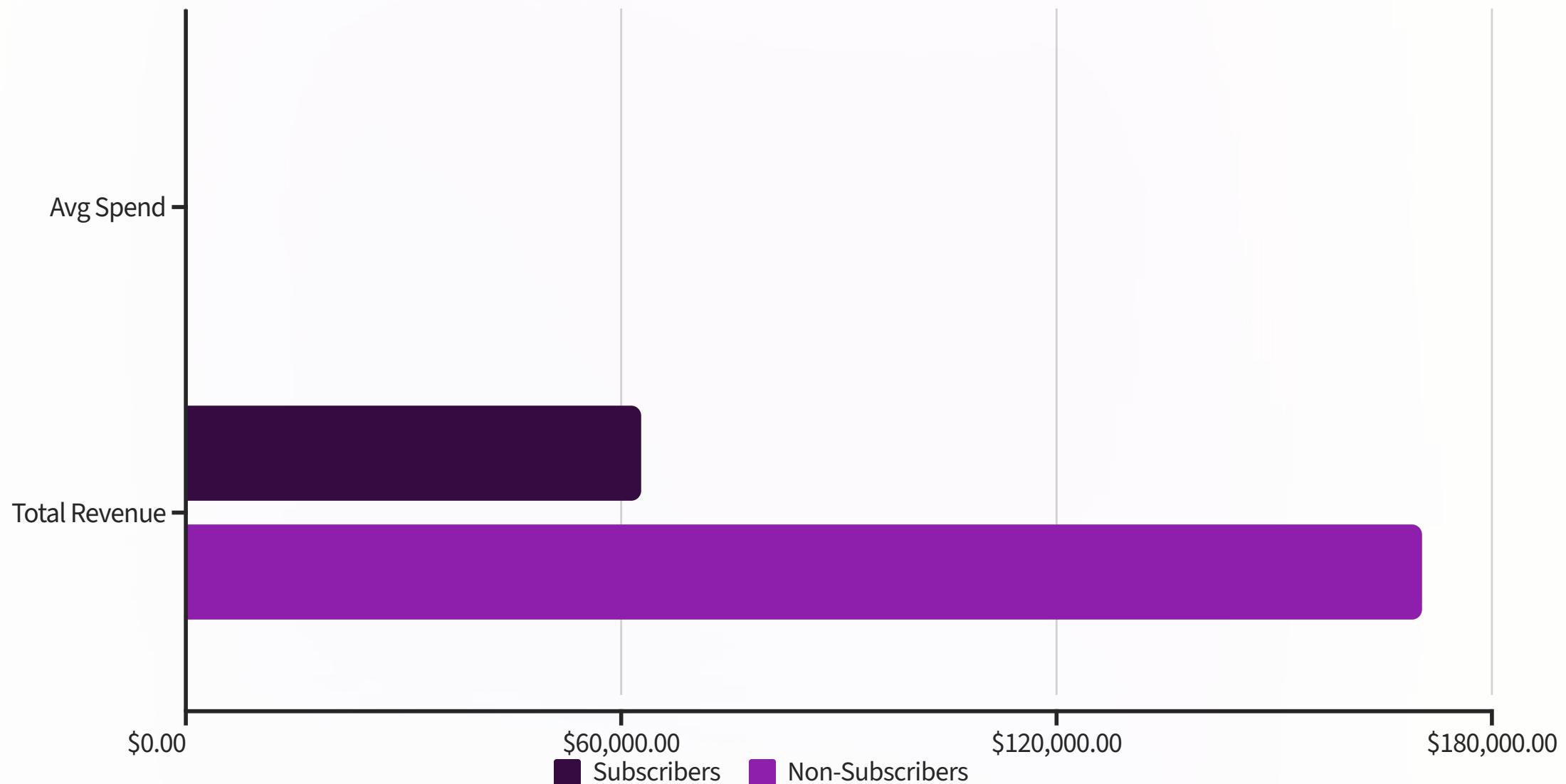
Returning (2-10)

18% of customer base

Loyal (10+ purchases)

80% of customer base

Subscription Analysis



1,053 Subscribers

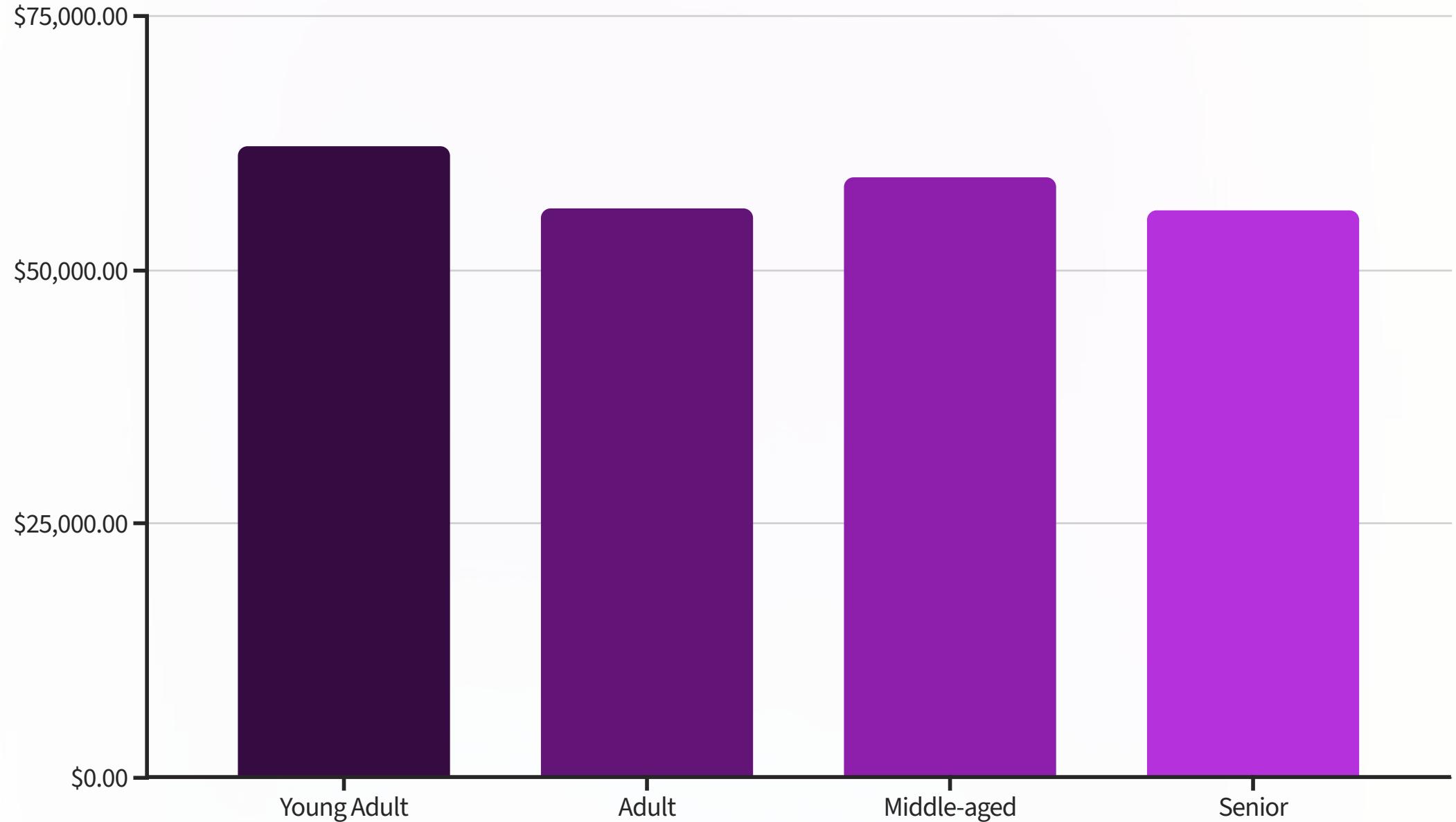
27% of customer base

2,847 Non-Subscribers

73% of customer base

Repeat buyers (5+ purchases): **958 subscribers** vs 2,518 non-subscribers

Revenue by Age Group



Young adults lead revenue generation, followed closely by middle-aged customers. All segments show balanced contribution.

Strategic Recommendations



Boost Subscriptions

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



Loyalty Programs

Reward repeat buyers to accelerate movement into loyal segment



Optimize Discounts

Balance sales boosts with margin control—839 high-spenders use discounts



Highlight Top Products

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



Targeted Marketing

Focus on young adults and express shipping users for maximum ROI