Customer Shopping Behavior Analysis

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

Dataset at a Glance

3,900
Total Purchases
Transactions analyzed

18
Data Points
Features per transaction

4
Categories
Product segments

50
Locations
Geographic coverage

Comprehensive dataset covering demographics, purchase details, and shopping behavior patterns

Data Preparation & Cleaning

01

Data Loading

Imported dataset using pandas for analysis

02

Initial Exploration

Examined structure and summary statistics

03

Missing Data

Imputed 37 missing review ratings using median

04

Standardization

Renamed columns to snake case format

05

Feature Engineering
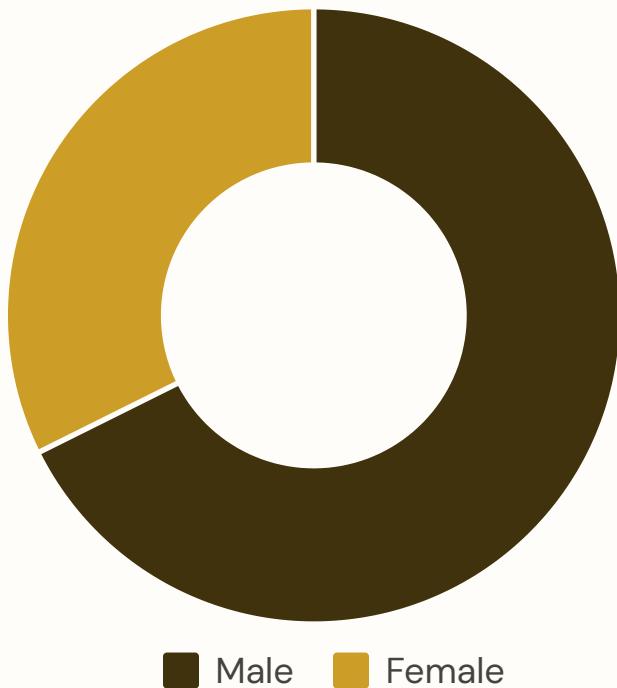
Created age groups and purchase frequency metrics

06

Database Integration

Loaded cleaned data into PostgreSQL

Revenue by Gender

Male ■ Female ■

Key Insight

Male customers generate **68% of total revenue**, more than double female customer spending

Strategic opportunity to boost female customer engagement

Top Products & Customer Satisfaction

Gloves

⭐ 3.86 rating

Sandals

⭐ 3.84 rating

Boots

⭐ 3.82 rating
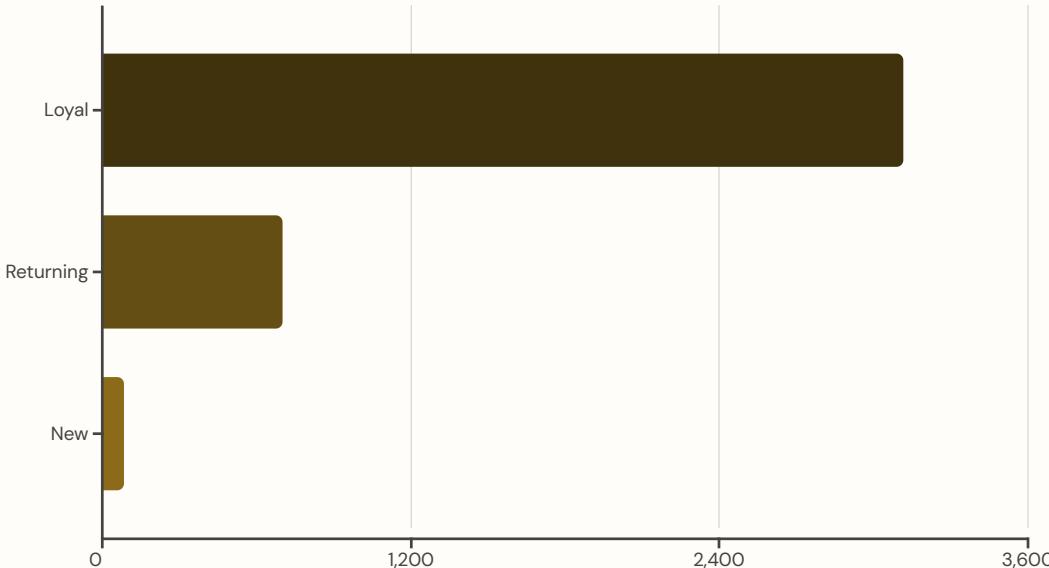
Hat

⭐ 3.80 rating

Skirt

⭐ 3.78 rating

Customer Segmentation Insights

Loyalty Dominates

80% of customers classified as loyal buyers

Strong retention foundation with opportunity to convert returning customers

Made with GAMMA

Subscription Analysis

Subscribers	Non-Subscribers
1,053 customers	2,847 customers
$59.49 avg spend	$59.87 avg spend
$62,645 revenue	**$170,436 revenue**
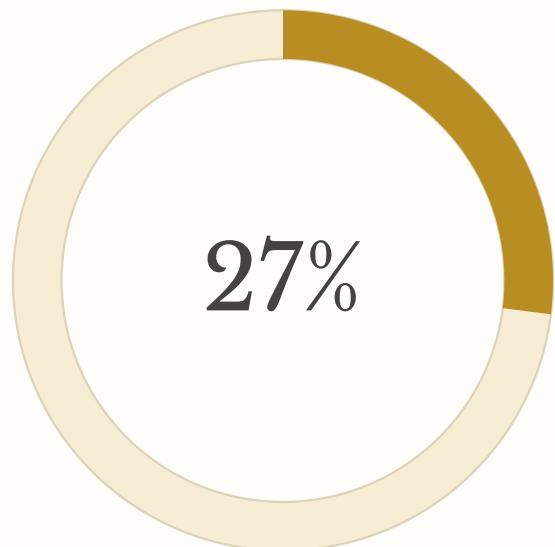
27%

Subscription Rate

Among all customers

958

Repeat Subscribers

With 5+ purchases

Repeat buyers show higher subscription tendency – opportunity to convert loyal customers

Discount Strategy Impact

High-Discount Products

- Hat: 50% discount rate
- Sneakers: 49.66%
- Coat: 49.07%
- Sweater: 48.17%
- Pants: 47.37%
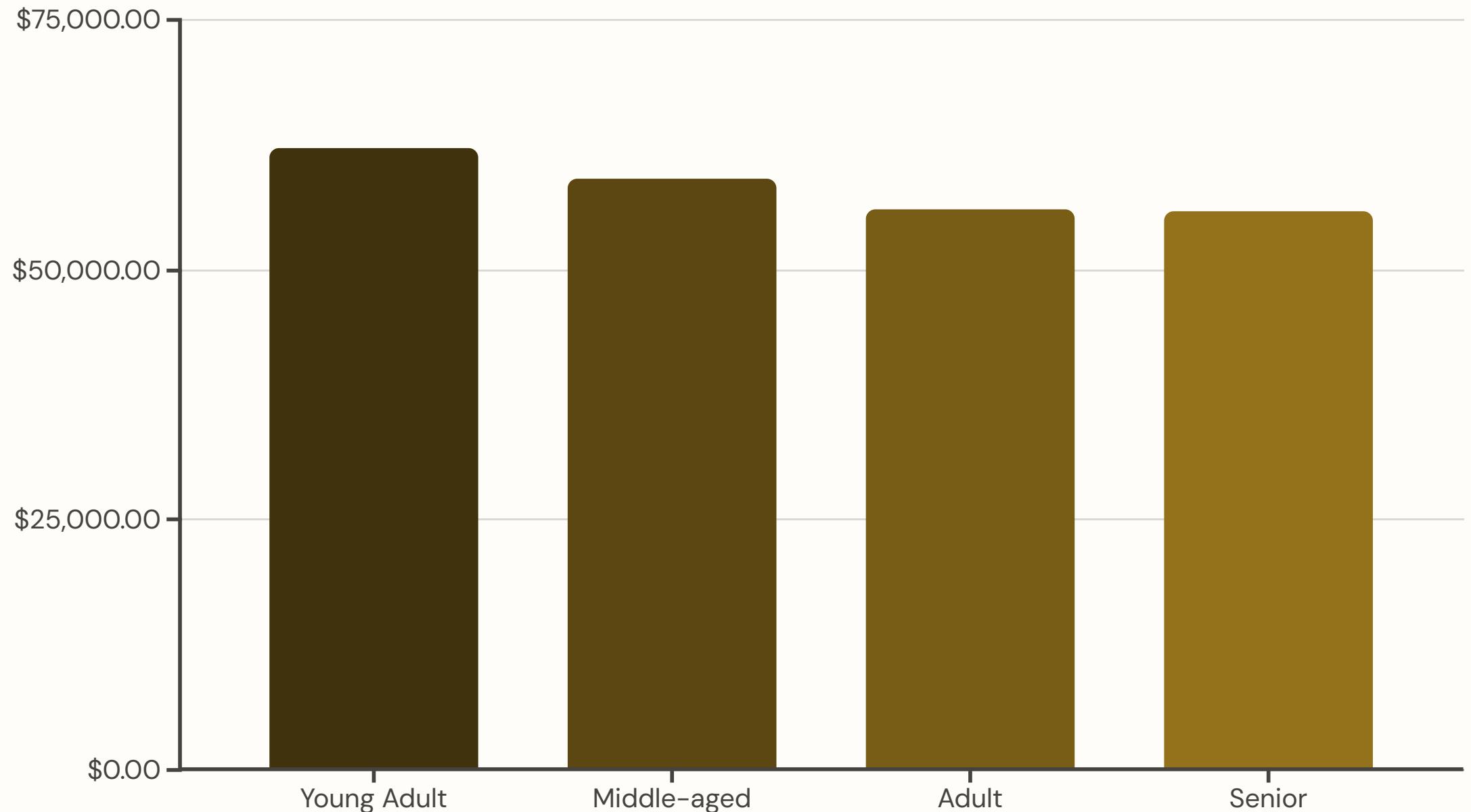
Smart Spenders

839 customers used discounts but spent above average ($60)

Discounts drive volume without sacrificing high-value purchases

📝 Balance promotional activity with margin protection to optimize profitability

Revenue by Age Group

Young adults lead revenue generation, but all segments show balanced contribution

Strategic Recommendations

Boost Subscriptions
Promote exclusive benefits to convert loyal repeat buyers

Loyalty Programs
Reward repeat buyers to accelerate movement into loyal segment

Review Discount Policy
Balance promotional sales with margin control and profitability

Product Positioning
Highlight top-rated items like gloves and sandals in campaigns

Targeted Marketing
Focus on high-revenue age groups and express shipping users