

Customer Shopping Behavior Analysis



OVERVIEW

Dataset at a Glance

3,900

Total Purchases

Transactions analyzed
across all categories

18

Data Points

Features per customer
transaction

50

Locations

Geographic coverage

4

Categories

Product segments
tracked



Data Preparation Process



Data Loading & Exploration

Imported dataset, checked structure with `df.info()` and summary statistics



Missing Data Handling

Imputed 37 missing Review Rating values using median by category



Feature Engineering

Created `age_group` bins and `purchase_frequency_days` columns



Data Consistency

Dropped redundant `promo_code_used` column, standardized naming



Database Integration

Connected to PostgreSQL for advanced SQL analysis

Revenue by Gender



\$233K Total Revenue

Male customers generate **68%** of total revenue, significantly outpacing female customers

CUSTOMER SEGMENTS

Who Are Our Customers?

Loyal Customers

3,116 customers

80% of customer base

Returning

701 customers

18% showing repeat behavior

New Customers

83 customers

2% first-time buyers

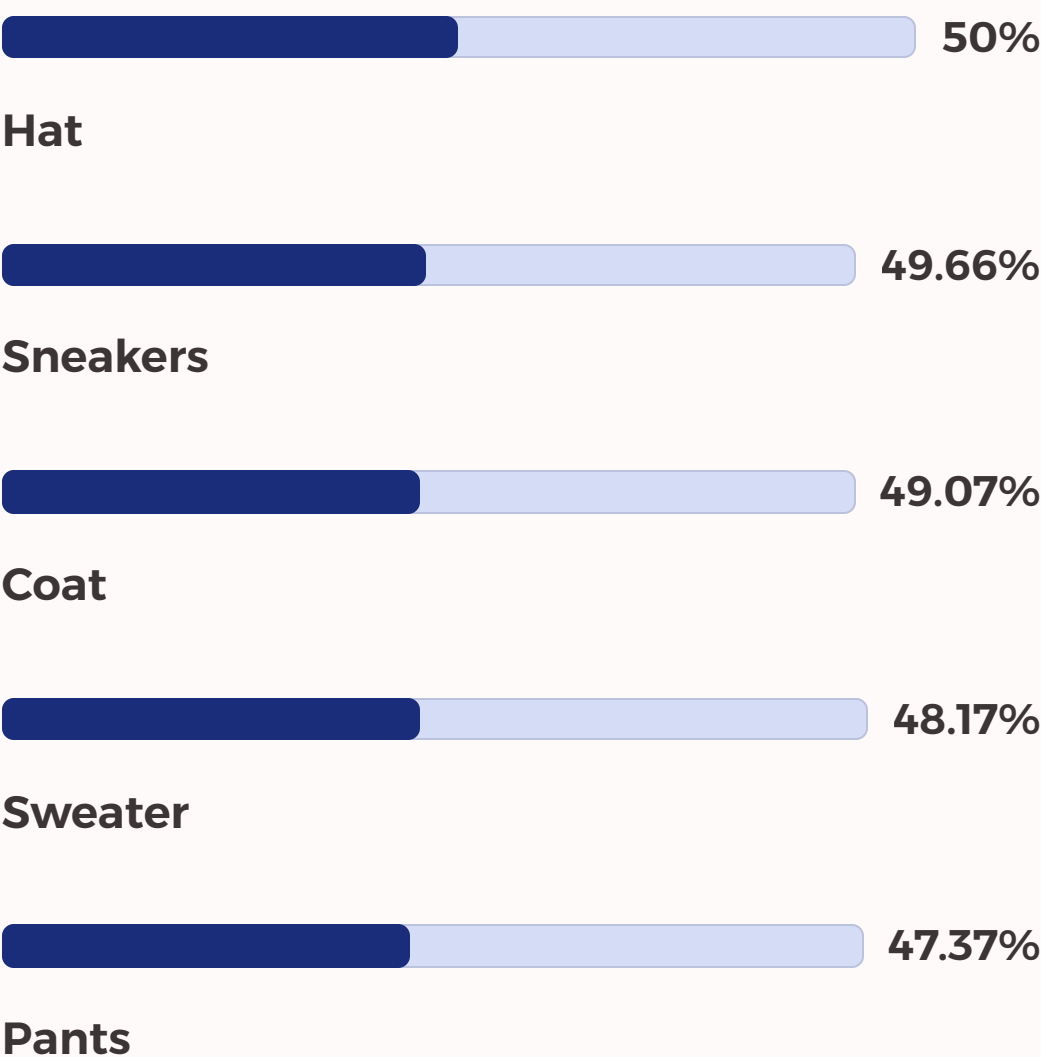


Top Products & Ratings

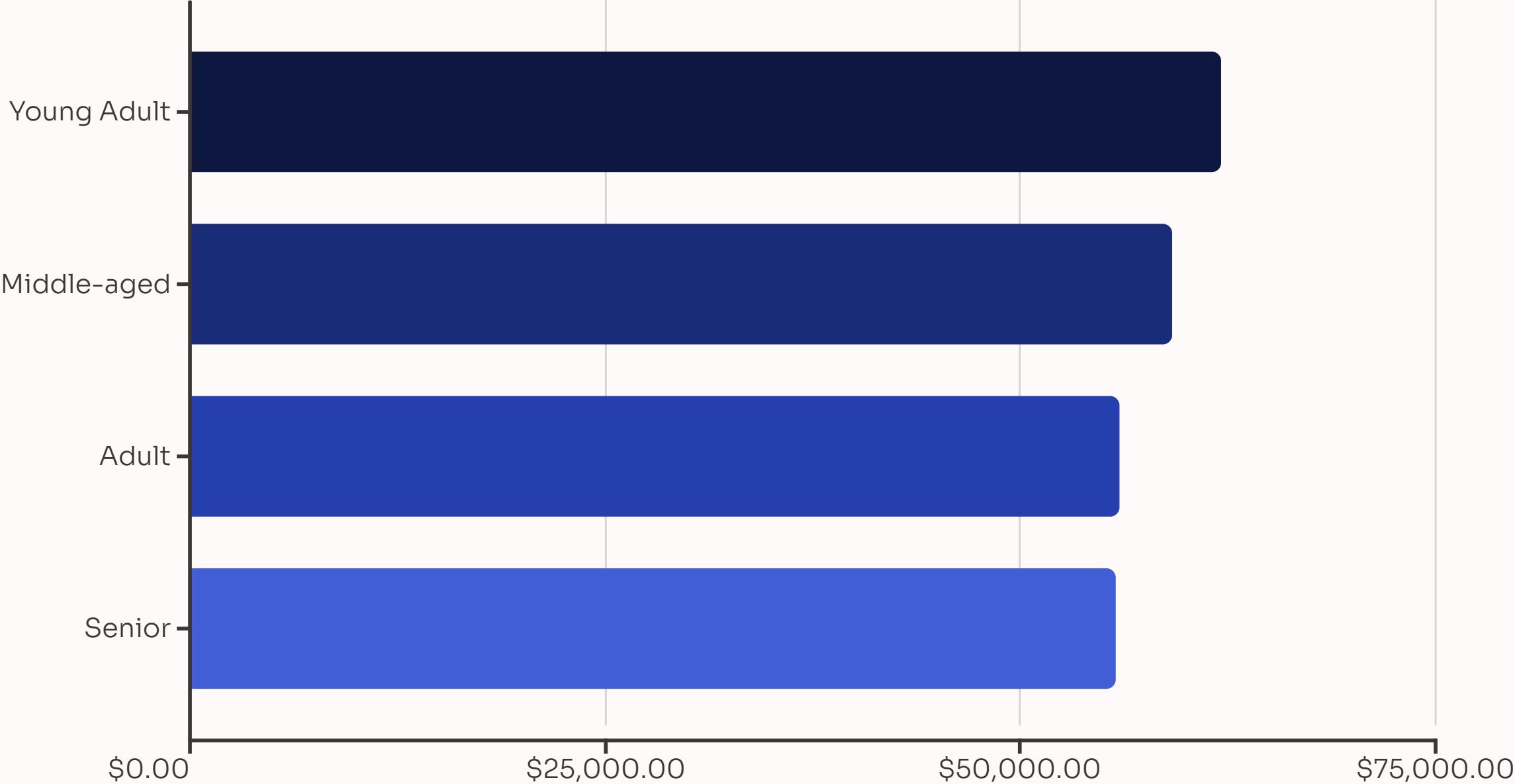
Highest Rated Items

- Gloves**
3.86 average rating
- Sandals**
3.84 average rating
- Boots**
3.82 average rating
- Hat**
3.80 average rating
- Skirt**
3.78 average rating

Discount Leaders



Revenue by Age Group



Young adults lead revenue generation, but all age groups contribute relatively evenly

POWER BI DASHBOARD

Interactive Analytics

3.9K Customers

Total customer base analyzed

\$59.76 Avg Purchase

Consistent spending across segments

3.75 Rating

Strong customer satisfaction

Customer Behavior Dashboard



Customers

\$59.76

Average Purchase Amount

Description Status



No 73%

Revenue by Category

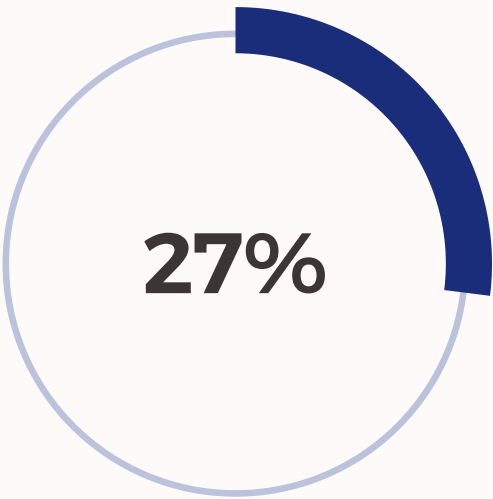


Sales by Age



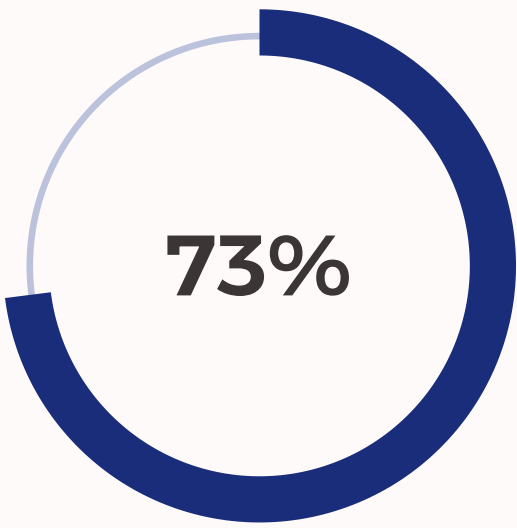
Made with GAMMA

Subscription Insights



Subscribers

1,053 customers



Non-Subscribers

2,847 customers

Key Finding

Subscribers and non-subscribers show similar average spend (\$59.49 vs \$59.87)

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



Business Recommendations

1

Boost Subscriptions

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

2

Customer Loyalty Programs

Reward repeat buyers to accelerate movement into "Loyal" segment

3

Review Discount Policy

Balance sales boosts with margin control—50% discount rate on some items

4

Product Positioning

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

5

Targeted Marketing

Focus on high-revenue young adults and express-shipping users