# Customer Shopping Behavior Analysis

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

# Dataset Overview

## 3,900
**Total Purchases**

Transactions analyzed across all categories

## 18
**Data Columns**

Comprehensive customer and purchase attributes

## 50
**Locations**

Geographic diversity in customer base

## 25
**Products**

Unique items across four categories

# 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 by product category

## 03
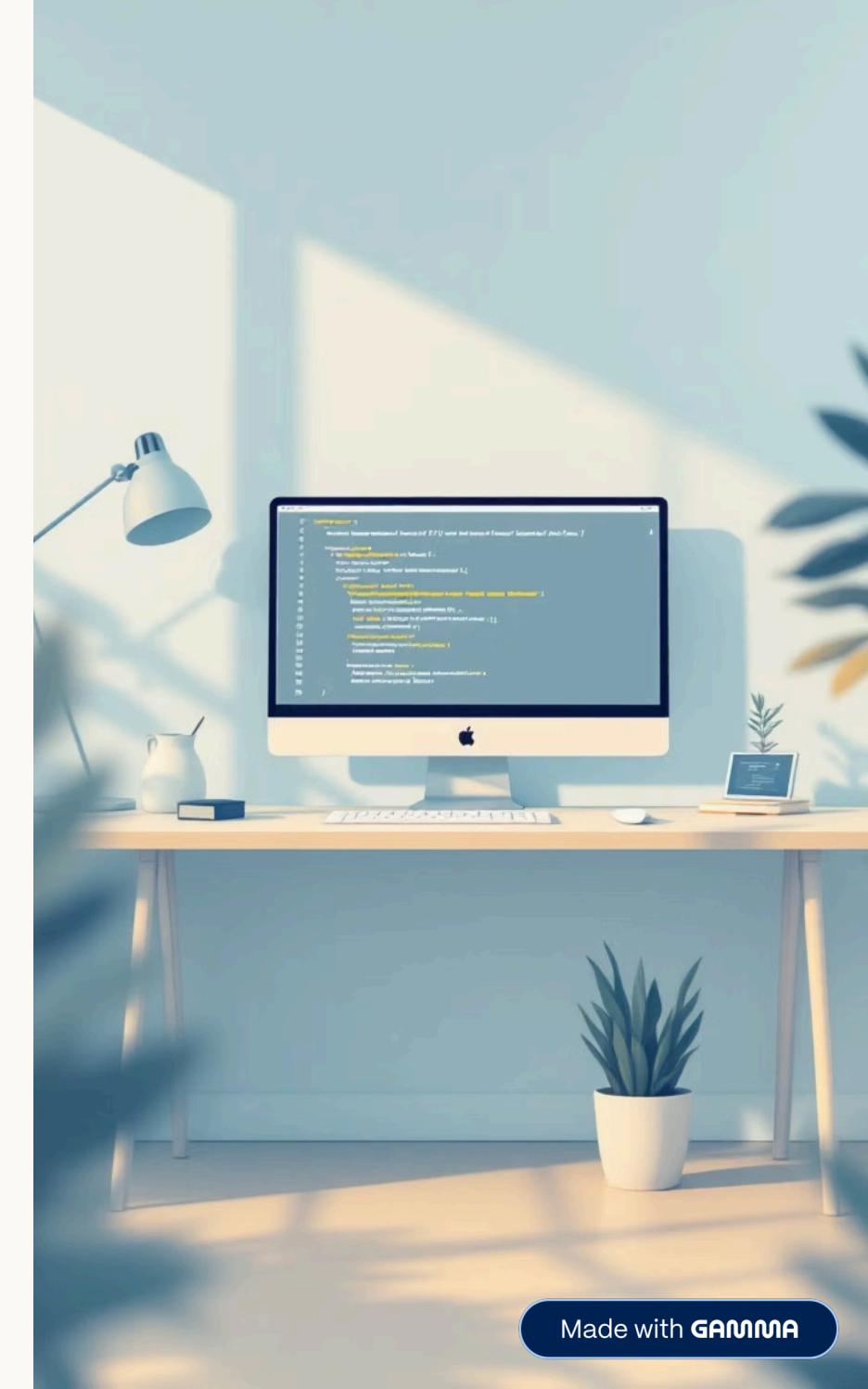
### Feature Engineering

Created age_group bins and purchase_frequency_days for deeper insights

## 04

### Database Integration

Connected to PostgreSQL for advanced SQL analysis

# Revenue by Gender



**Male** **Female**

### Male Customers Drive Revenue

Male customers generate 68% of total revenue, more than double female contribution

Strategic opportunity to boost female customer engagement

# Top-Rated Products

**Gloves**

3.86 rating

**Sandals**

3.84 rating

**Boots**

3.82 rating

**Hat**

3.80 rating
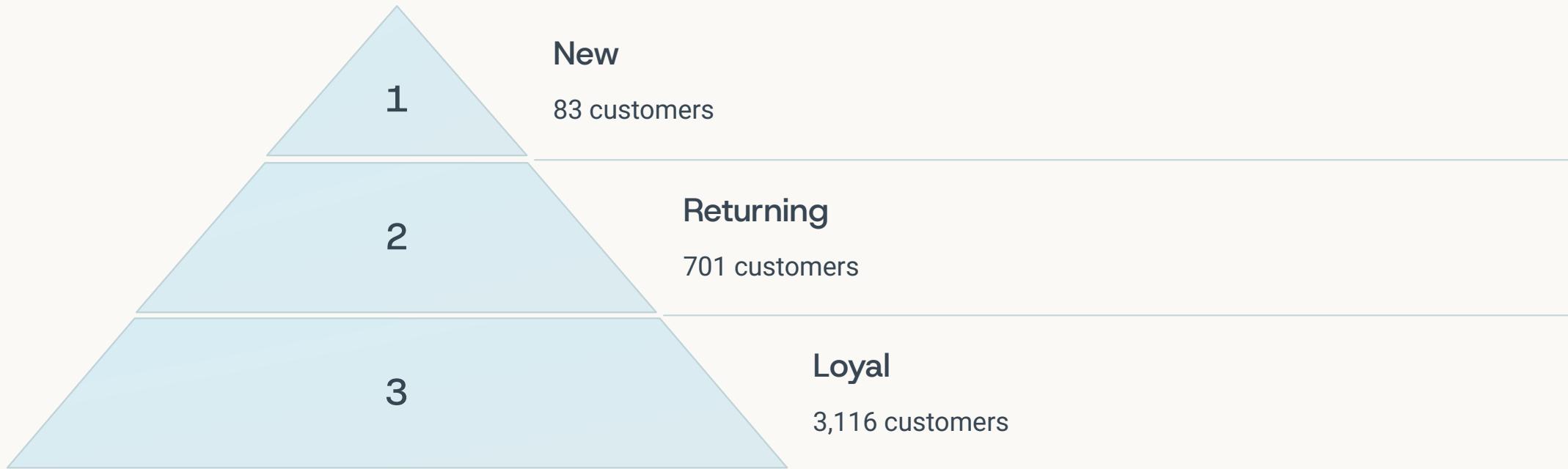
**Skirt**

3.78 rating

Highest-rated products show consistent customer satisfaction across categories

# Customer Segmentation Insights



**New**
83 customers

**Returning**
701 customers

**Loyal**
3,116 customers

**Strong Loyalty Base**

80% of customers classified as loyal, indicating strong retention

**Growth Opportunity**

Convert returning customers to loyal status through targeted programs
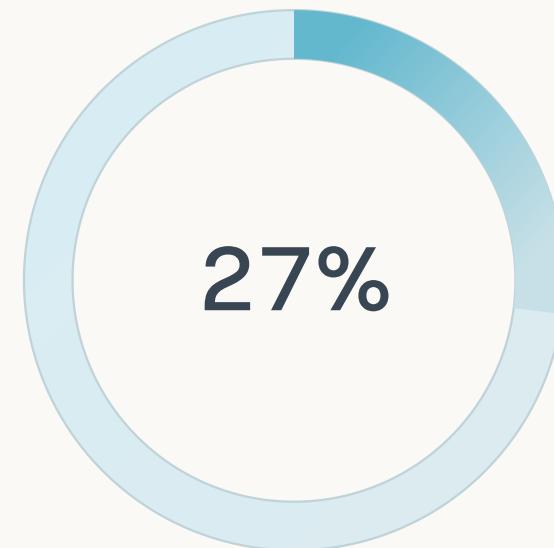
# Subscription Analysis

## Subscribers vs Non–Subscribers
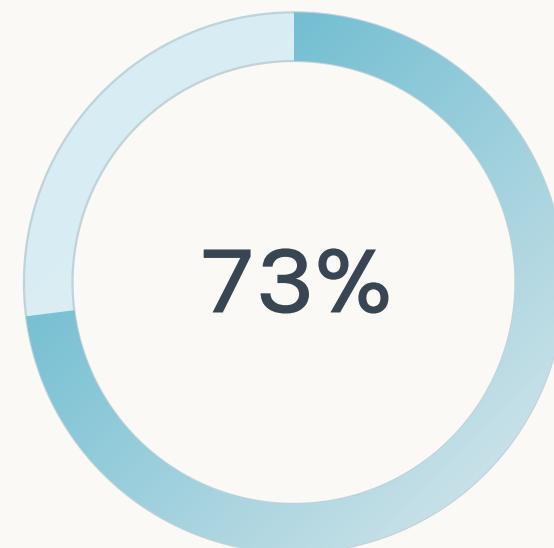
| Status | Customers | Avg Spend |
|---|---|---|
| Subscribers | 1,053 | $59.49 |
| Non-Subscribers | 2,847 | $59.87 |

Similar spending patterns, but non-subscribers dominate customer base

## Repeat Buyers & Subscriptions

**27%**
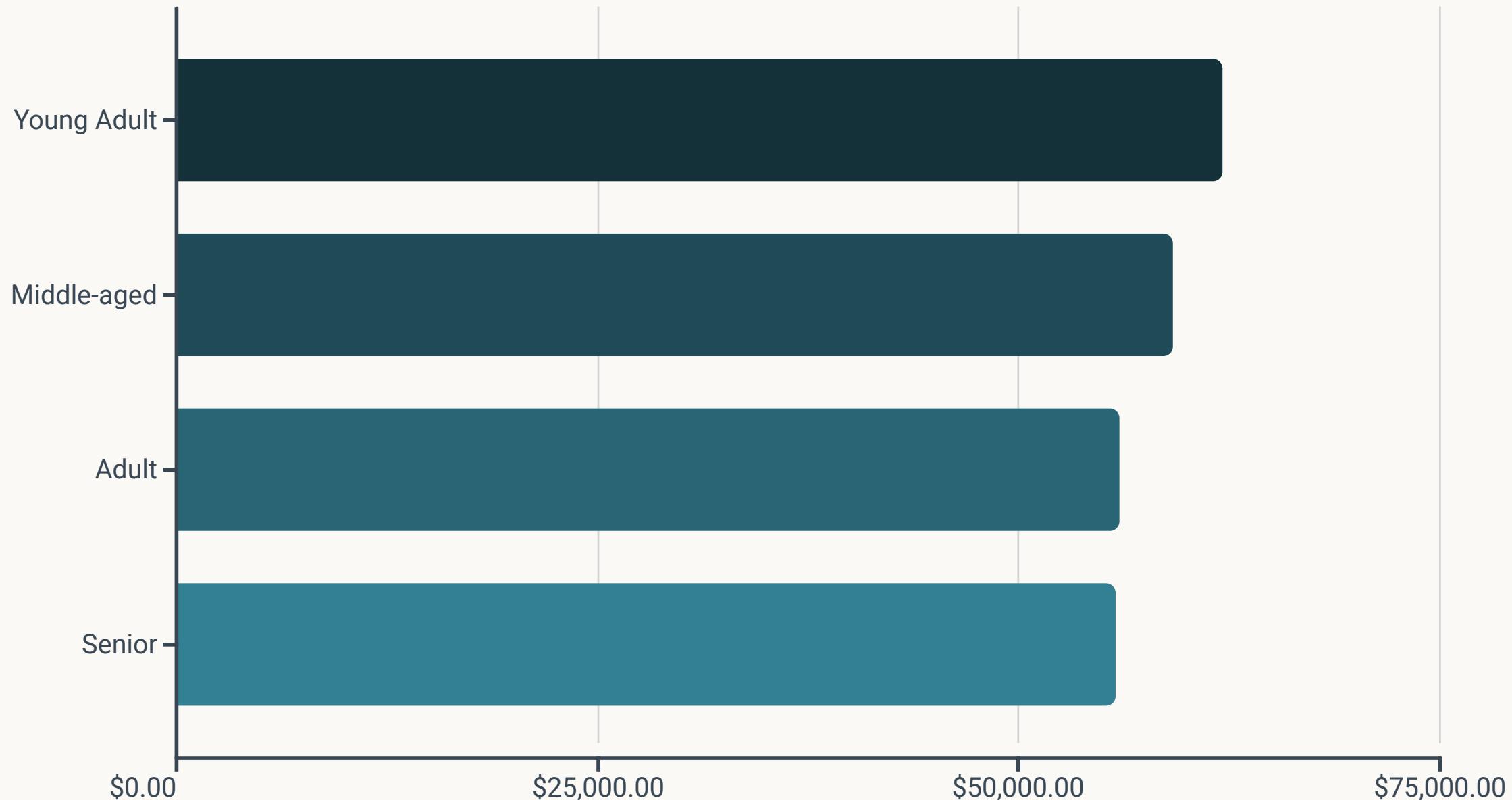
Repeat buyers with subscriptions

**73%**

Repeat buyers without subscriptions

Major opportunity: 2,518 repeat buyers not yet subscribed

Made with GAMMA

# Revenue by Age Group



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

Made with GAMMA
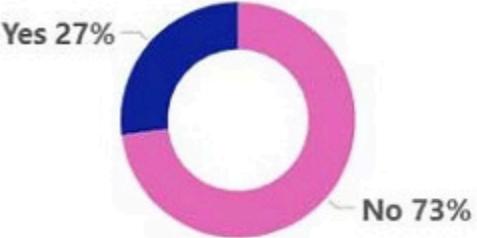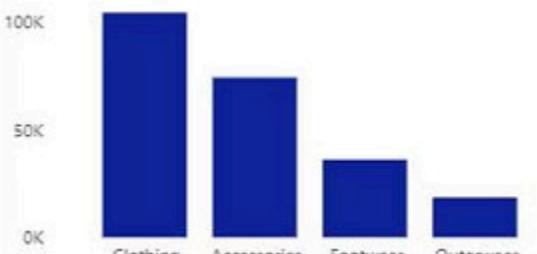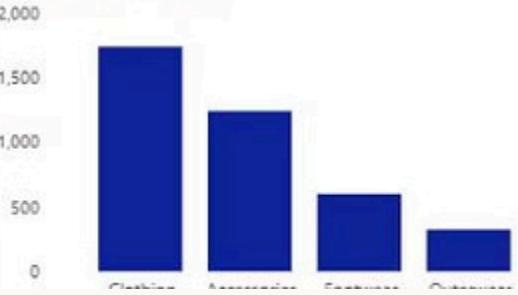
**% of Customers by Subscription Status**

Yes 27%

No 73%

**Revenue by Category**

100K

50K

0K

Clothing  Accessories  Footwear  Outerwear

**Sales by Category**

2,000

1,500

1,000

500

0

Clothing  Accessories  Footwear  Outerwear

# Key Findings Dashboard

## Discount Insights

839 customers used discounts while spending above average—smart shoppers seeking value

## Shipping Preferences

Express shipping users spend $2 more on average ($60.48 vs $58.46)

## Discount-Dependent Products

Hats lead at 50% discount rate, followed by Sneakers at 49.66%

# Strategic Recommendations

## Boost Subscriptions

Target 2,518 repeat buyers with exclusive benefits and loyalty rewards

## Optimize Discount Strategy

Balance promotional sales with margin control—focus on high-value customers

## Highlight Top Products

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

## Targeted Marketing

Focus on young adults and express shipping users for maximum revenue impact