# Customer Shopping Behavior Analysis

Analyzing 3,900 purchases to uncover insights into spending patterns, customer segments, and product preferences that drive strategic business decisions.

Dataset Overview

Total Purchases

Transactions analyzed across all categories

Data Points

Features covering demographics and behavior

1

2

4

3

Products

Unique items across four categories

Locations

Geographic distribution of customers

Customer Data

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

Transaction Details

- **Product, Category, Amount**
- **Season, Size, Color**
- **Discounts & Promotions**

Data Preparation in Python

01

Data Loading & Exploration

Imported dataset using pandas, examined 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
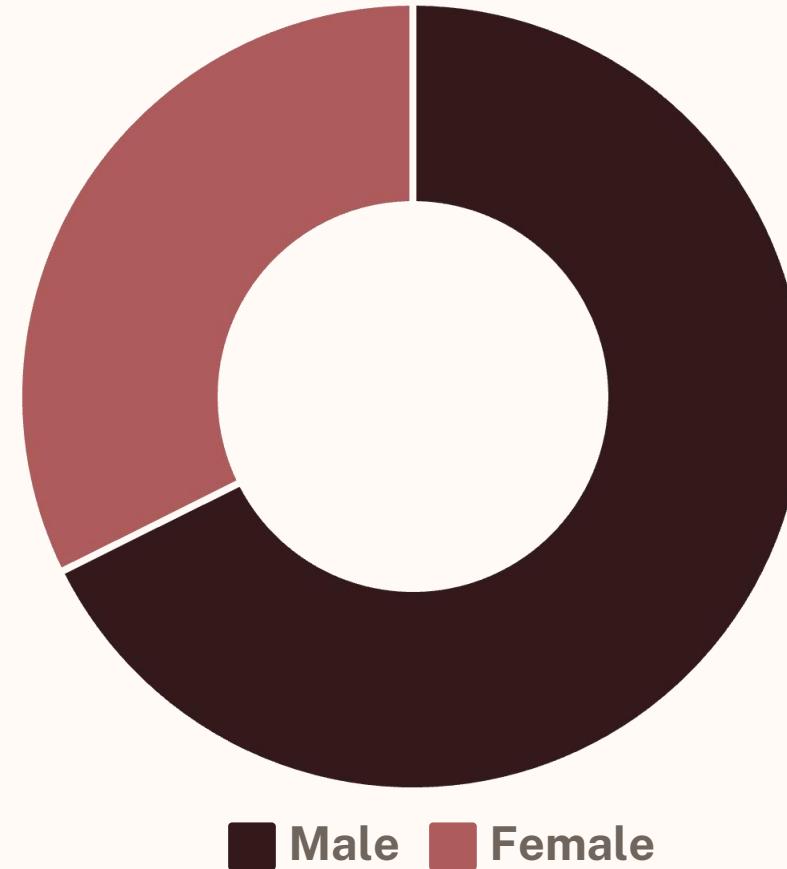
Created age_group bins and purchase_frequency_days columns for deeper analysis

04

Database Integration

Connected to PostgreSQL and loaded cleaned data for SQL analysis
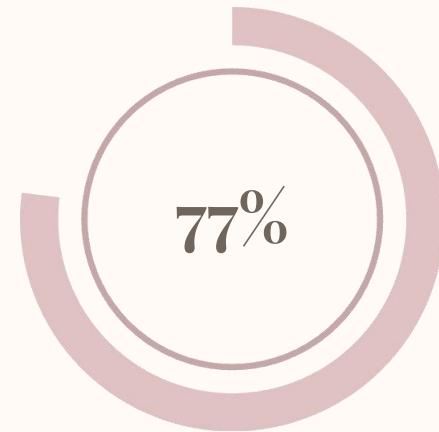
Revenue Insights by Gender

Male **Female**

## Male Customers Drive Revenue
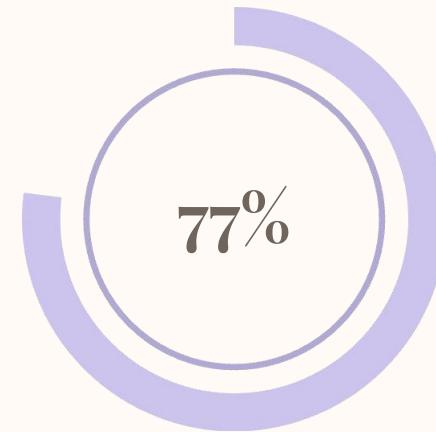
Male customers generated $157,890 compared to $75,191 from female customers—representing 68% of total revenue.

This suggests opportunities for targeted marketing campaigns.

Made with GAMMA

Top-Rated Products

77%

Gloves

Highest average rating at 3.86 stars

77%

Sandals

Strong performance at 3.84 stars

76%

Boots

Solid rating of 3.82 stars

76%

Hat
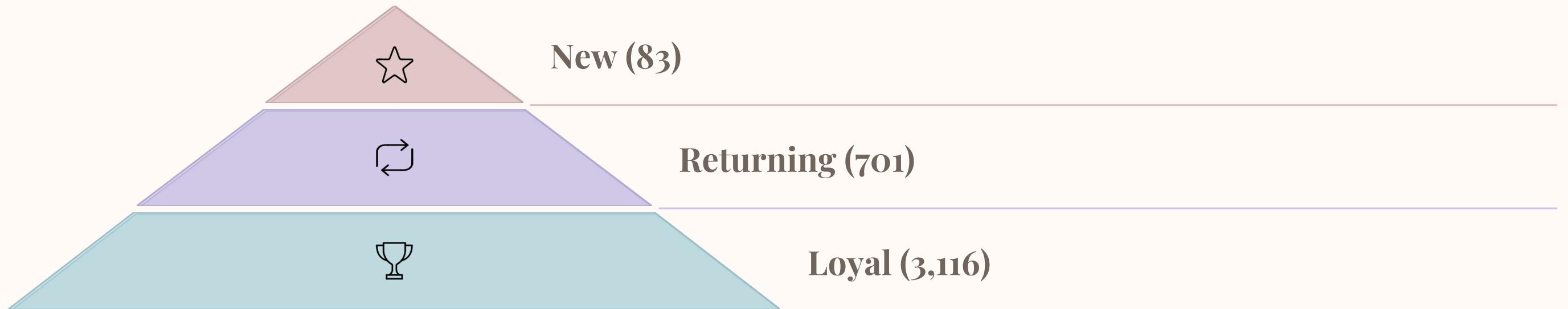
Customer favorite at 3.80 stars

76%

Skirt

Consistent quality at 3.78 stars

Customer Segmentation Analysis

New (83)

Returning (701)

Loyal (3,116)

The majority of customers (80%) fall into the Loyal segment, indicating strong retention. However, only 83 new customers suggest opportunities to improve acquisition strategies.

Subscription vs. Non-Subscription Behavior

Subscribers

1,053 customers with subscriptions

Non-Subscribers

2,847 customers without subscriptions
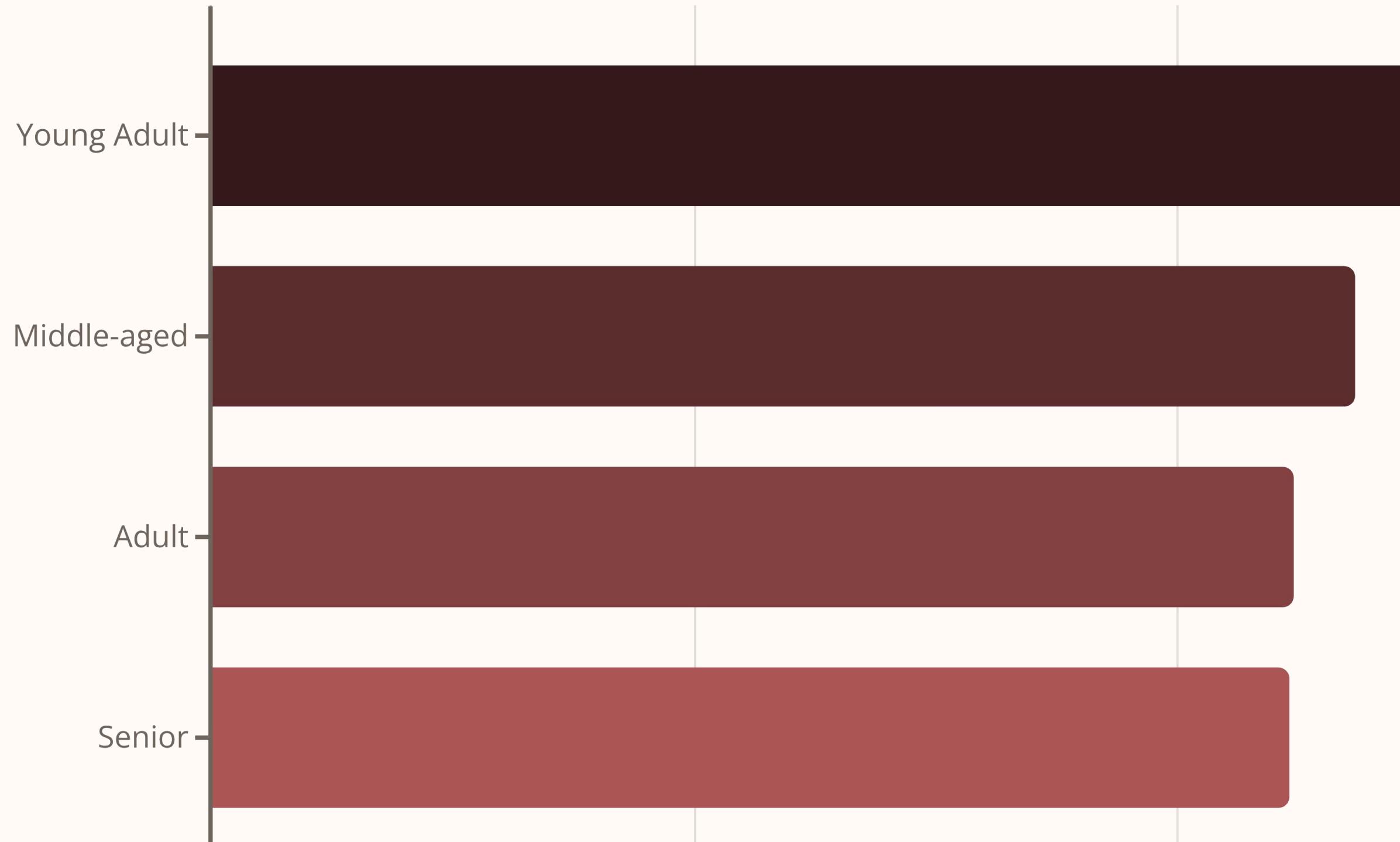
### Revenue Comparison

Subscribers: $62,645 total ($59.49 avg)
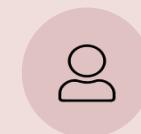
Non-Subscribers: $170,436 total ($59.87 avg)

Average spend is nearly identical, but non-subscribers drive 73% of revenue due to volume.

Revenue by Age Group

Power BI Dashboard Highlights

3.9K Customers

Total customer base analyzed

$59.76 Avg Purchase

Mean transaction value

3.75 Avg Rating

Overall satisfaction score

Interactive dashboard visualizes revenue by category, sales distribution, age group performance, and subscription status—enabling real-time business intelligence.

Strategic Recommendations

Boost Subscriptions

Promote exclusive benefits to convert the 73% non-subscriber base and increase recurring revenue.

Loyalty Programs

Reward repeat buyers to strengthen the 80% loyal customer segment and reduce churn.

Review Discount Policy

Balance promotional sales with margin control—839 customers used discounts on high-value purchases.

Product Positioning

Highlight top-rated items (Gloves, Sandals, Boots) in marketing campaigns to drive conversions.

Targeted Marketing

Focus on Young Adults and express-shipping users who demonstrate higher engagement and spending.

Thank You!

We appreciate your time and attention to our customer shopping behavior analysis. We are happy to answer any questions you may have.

Let's connect to drive these insights into action.