



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 Points

Features tracked per customer

50

Locations

Geographic coverage

25

Products

Unique items purchased

Customer Data

- Demographics: Age, Gender, Location
- Subscription Status
- Purchase History

Transaction Details

- Product, Category, Amount
- Season, Size, Color
- Discounts & Shipping

Data Preparation Journey

01

Data Loading

Imported dataset using pandas, explored structure with `df.info()`

02

Cleaning

Imputed 37 missing Review Ratings using category medians

03

Standardization

Renamed columns to `snake_case` for consistency

04

Feature Engineering

Created `age_group` and `purchase_frequency_days` columns

05

Database Integration

Connected to PostgreSQL for advanced SQL analysis

Revenue by Gender

Male Customers

\$157,890

68% of total revenue

Female Customers

\$75,191

32% of total revenue

Male customers drive significantly higher revenue, representing over two-thirds of total sales



Smart Discount Users

839 customers used discounts but spent above average

These high-value discount users represent a key opportunity:

- Purchase amounts: \$62-\$97
- Above \$59.76 average spend
- Price-conscious yet willing to spend



Top-Rated Products



Gloves

3.86 average rating

Sandals

3.84 average rating

Boots

3.82 average rating



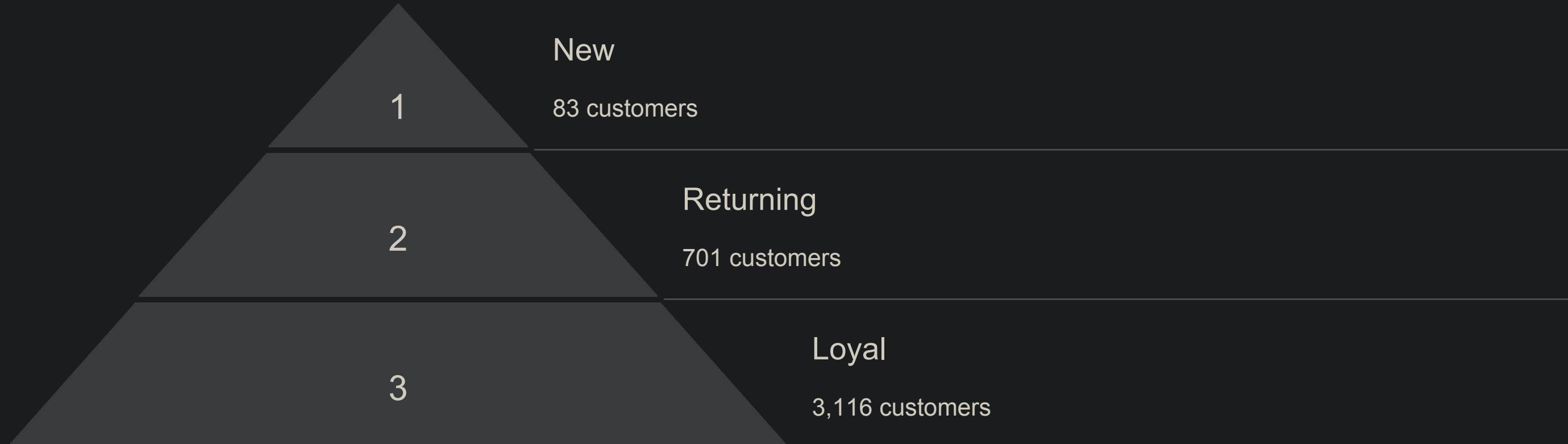
Hat

3.80 average rating

Skirt

3.78 average rating

Customer Segmentation Insights



Subscription Analysis

Repeat buyers (>5 purchases): 3,476 total

- Subscribed: 958 (28%)
- Not subscribed: 2,518 (72%)

Spending Patterns

Subscribers vs. Non-subscribers:

- Avg spend: \$59.49 vs \$59.87
- Total revenue: \$62,645 vs \$170,436

Category Leaders



Clothing

Blouse - 171 orders
Pants - 171 orders
Shirt - 169 orders



Accessories

Jewelry - 171 orders
Sunglasses - 161 orders
Belt - 161 orders



Footwear

Sandals - 160 orders
Shoes - 150 orders
Sneakers - 145 orders



Outerwear

Jacket - 163 orders
Coat - 161 orders

Revenue by Age Group



Strategic Recommendations



Boost Subscriptions

72% of repeat buyers aren't subscribed—promote exclusive benefits



Loyalty Programs

Reward repeat buyers to grow the 3,116-strong loyal segment



Review Discounts

Balance sales boosts with margin control for high-discount products



Product Positioning

Highlight top-rated items like Gloves and Sandals in campaigns



Targeted Marketing

Focus on Young Adults and express-shipping users for maximum ROI