

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 & location
- Subscription status
- Purchase history

Transaction Data

- Product details & pricing
- Discounts & promotions
- Shipping & ratings

Data Preparation Journey

01

Data Loading

Imported dataset using pandas for analysis

02

Exploration

Summary statistics and structure validation

03

Cleaning

Handled 37 missing review ratings with median imputation

04

Feature Engineering

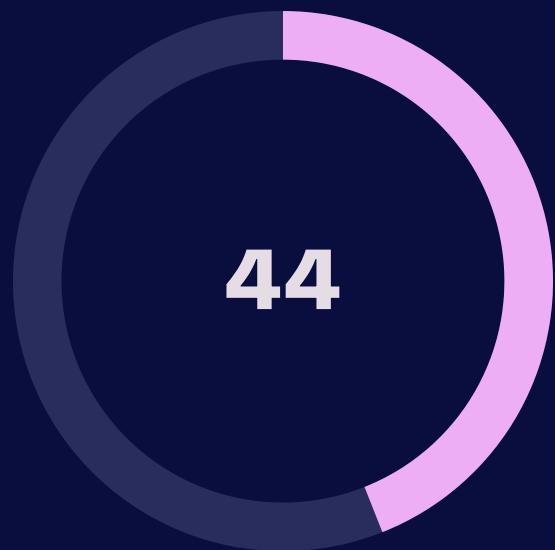
Created age groups and purchase frequency metrics

05

Database Integration

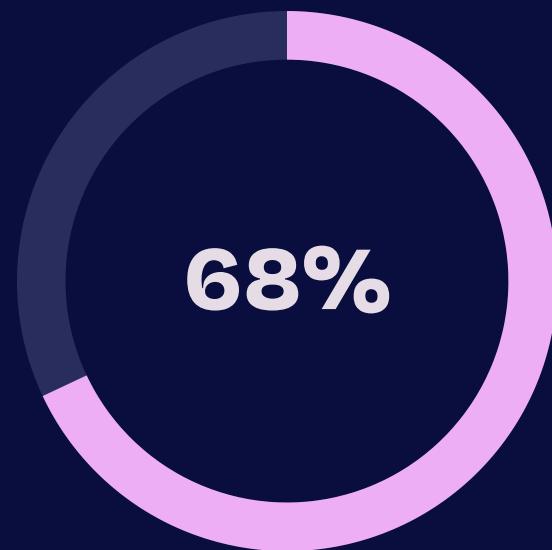
Loaded cleaned data into PostgreSQL

Key Customer Metrics



Average Age

Median customer age in years



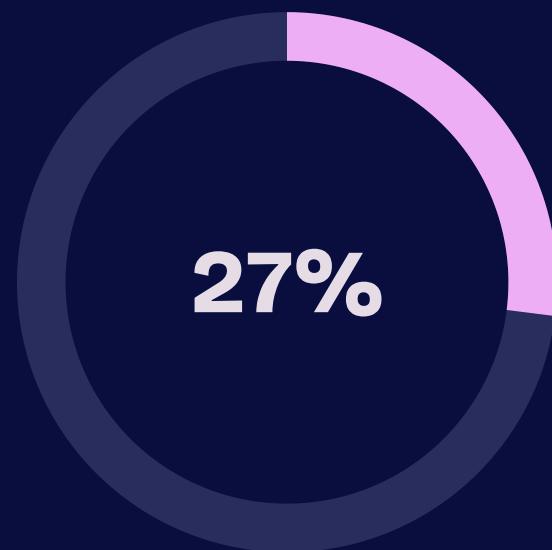
Male Customers

Gender distribution skew



Avg Rating

Customer satisfaction score



Subscribers

Active subscription rate

Purchase Amount

\$60 average spend

Range: \$20-\$100

Previous Purchases

25 median orders

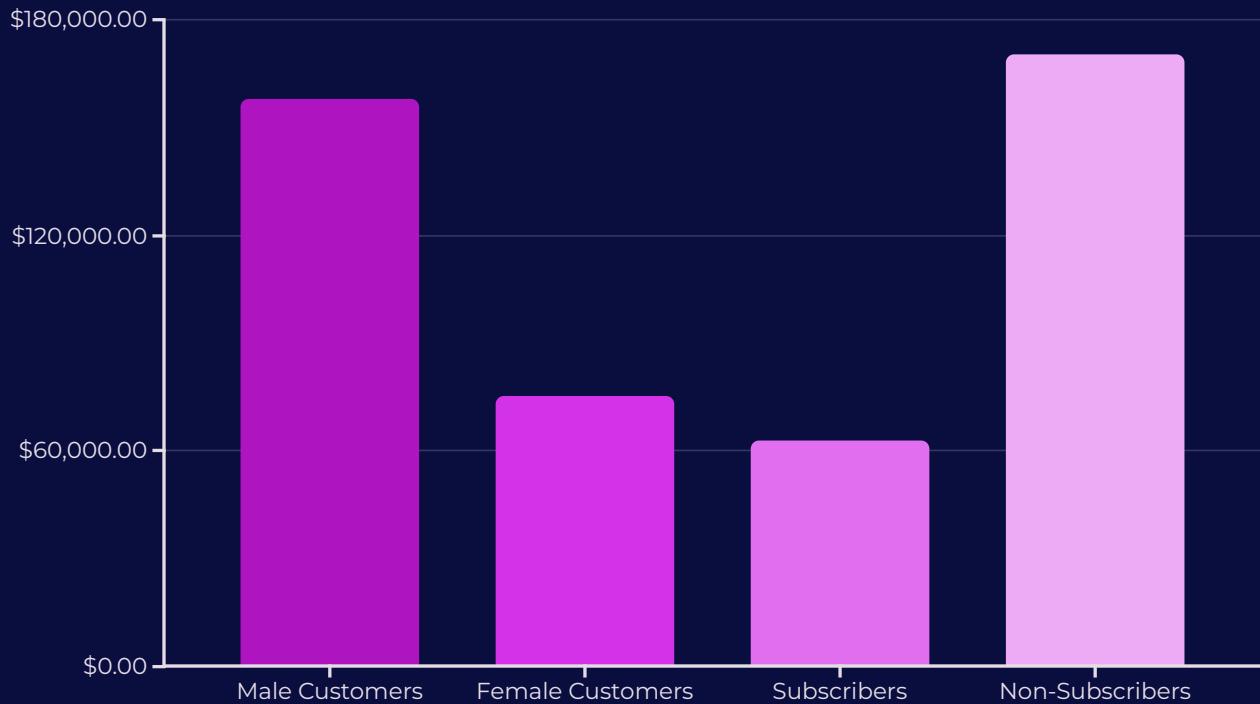
Strong repeat behavior

Top Season

Spring leads

999 transactions

Revenue Insights



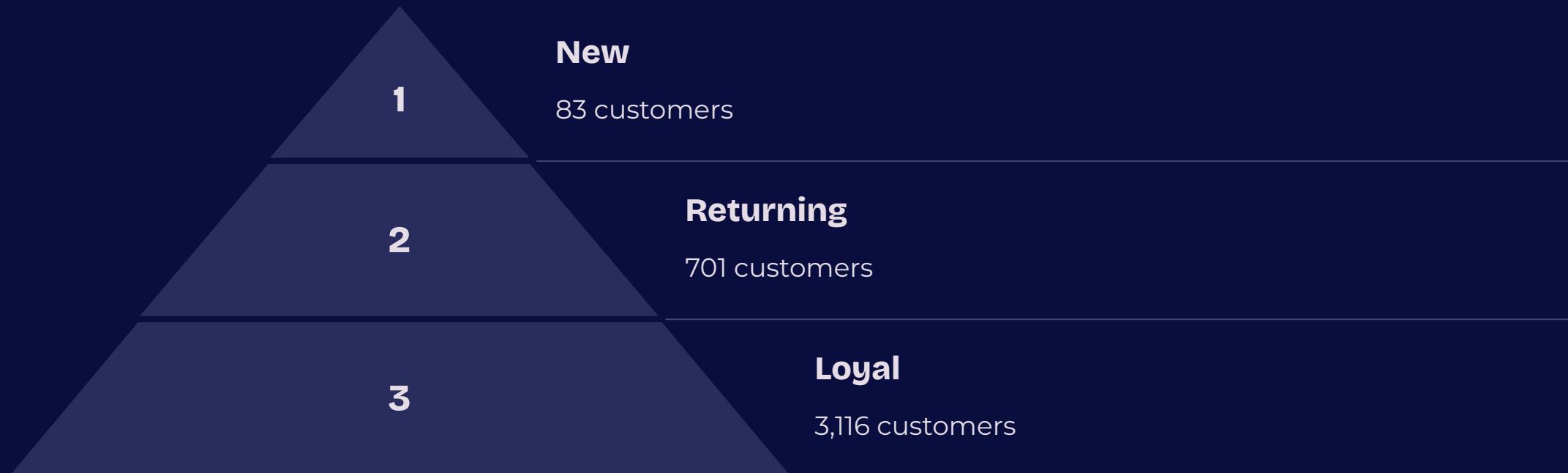
Key Findings

Male customers generate 2x revenue vs. female customers

Non-subscribers dominate total revenue at 73%

Average spend similar across subscription status: ~\$60

Customer Segmentation



80% of customers are loyal, indicating strong retention and repeat purchase behavior

Repeat Buyers (>5 purchases)

- 958 are subscribers
- 2,518 are non-subscribers
- Subscription opportunity exists

Revenue by Age Group

- Young Adult: **\$62,143**
- Middle-aged: **\$59,197**
- Adult: **\$55,978**
- Senior: \$55,763



Product Performance

Top Rated Products

1. Gloves: **3.86**
2. Sandals: **3.84**
3. Boots: **3.82**
4. Hat: **3.80**
5. Skirt: **3.78**

Best Sellers by Category

Accessories: Jewelry (171)

Clothing: Blouse & Pants (171)

Footwear: Sandals (160)

Outerwear: Jacket (163)

Discount-Dependent Items

1. Hat: **50%**
2. Sneakers: **49.7%**
3. Coat: **49.1%**
4. Sweater: **48.2%**
5. Pants: 47.4%



Discount Strategy Analysis

High-Value Discount Users

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

This represents **21.5%** of all transactions

Discounts drive volume without sacrificing high-value purchases

Shipping Preferences

Express: \$60.48 avg spend

Standard: \$58.46 avg spend

Express shippers spend **3.5% more** on average

- **Strategic Insight:** Discounts attract high-value customers. Balance promotional activity with margin protection to optimize profitability.

Customer Behavior Dashboard

K

customers

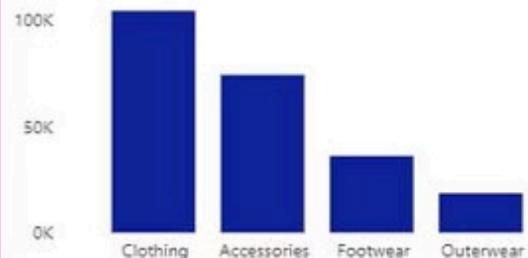
scription Status



\$59.76

Average Purchase Amount

Revenue by Category



Sales by Age Group



Interactive Dashboard

Comprehensive Power BI dashboard visualizing customer segments, revenue trends, product performance, and behavioral patterns for data-driven decision making

Strategic Recommendations



Boost Subscriptions

Promote exclusive benefits to convert repeat buyers into subscribers



Loyalty Programs

Reward repeat buyers to strengthen the loyal customer segment



Optimize Discounts

Balance promotional activity with margin control for profitability



Product Positioning

Highlight top-rated and best-selling items in marketing campaigns



Targeted Marketing

Focus on high-revenue age groups and express-shipping customers