



# 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

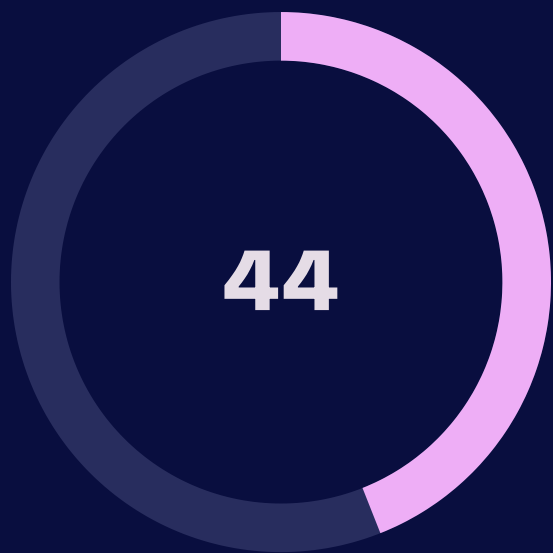
Created age groups and purchase frequency metrics

05

## Database Integration

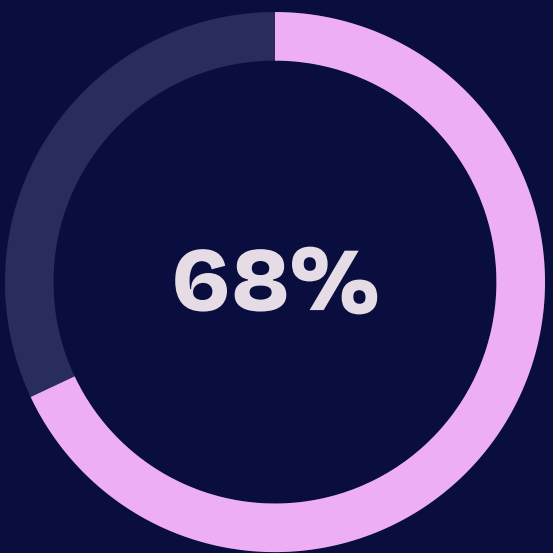
Loaded cleaned data into PostgreSQL

# Key Customer Metrics



Average Age

Median customer age in years



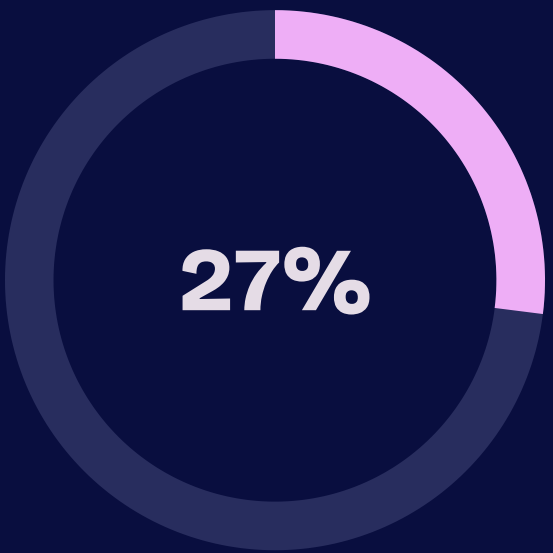
Male Customers

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

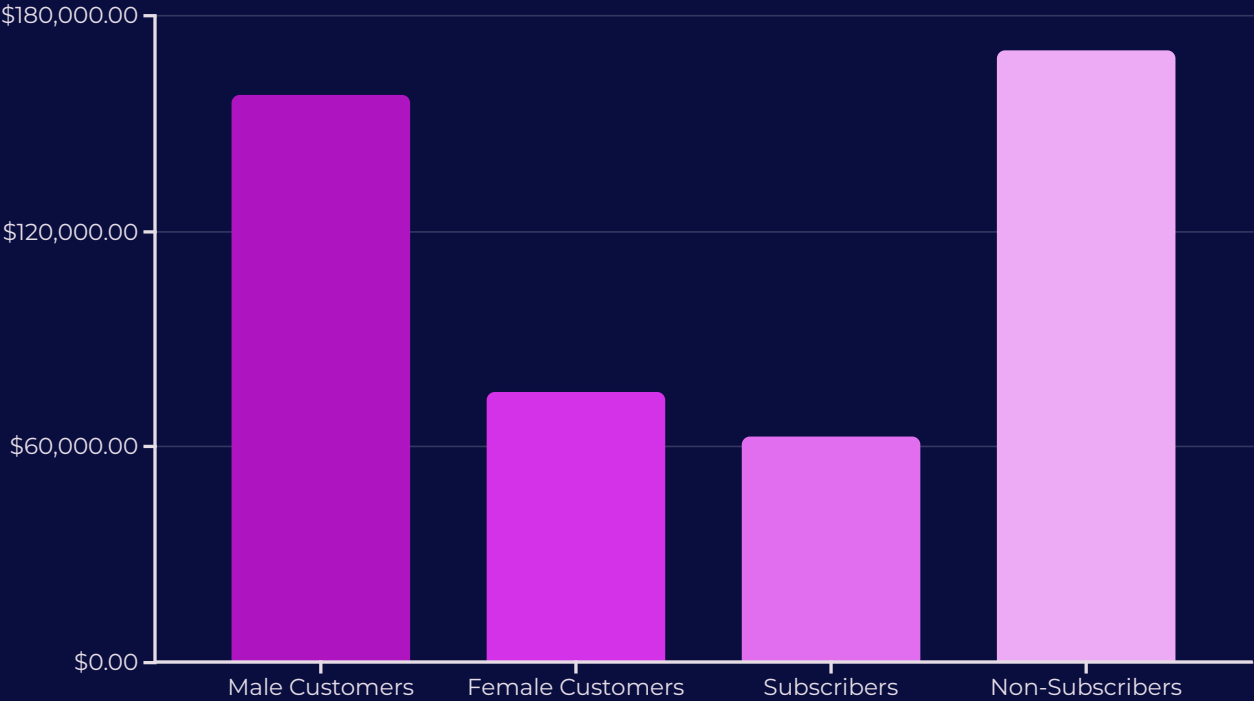
Strong repeat behavior

## Top Season

**Spring** leads

999 transactions

# Revenue Insights



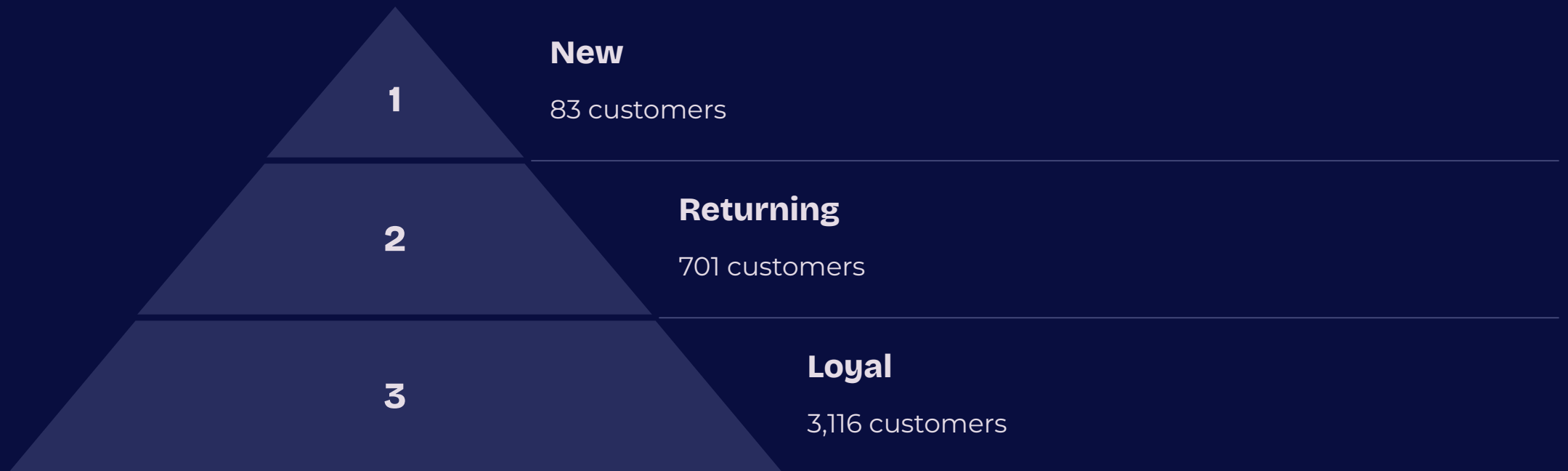
## Key Findings

**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

\$59.76

Average Purchase Amount

Description Status



No 73%

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