



# 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

**3,900**

**Total Purchases**

Transactions analyzed  
across all categories

**18**

**Data Points**

Comprehensive  
customer and  
purchase attributes

**4**

**Product  
Categories**

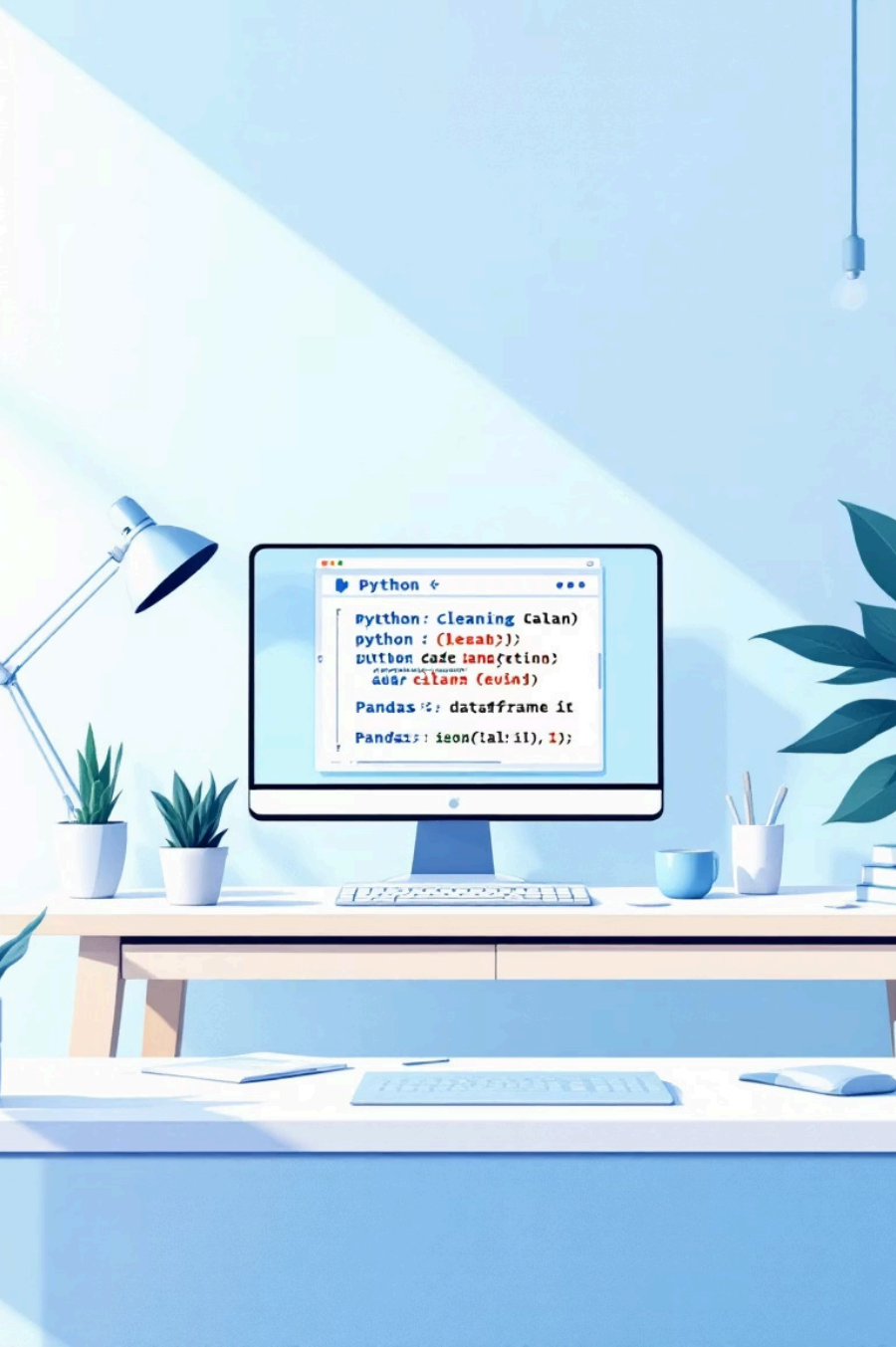
Clothing, Footwear,  
Accessories, and  
Outerwear

**50**

**Locations**

Geographic diversity  
across customer base

# Data Preparation & Python Analysis



## Data Cleaning Process

- Imported dataset using pandas for analysis
- Imputed 37 missing Review Rating values using median by category
- Standardized columns to snake\_case format
- Verified data consistency and removed redundant fields

## Feature Engineering

- Created age\_group bins for demographic analysis
- Generated purchase\_frequency\_days metric
- Connected to PostgreSQL for advanced querying
- Prepared clean dataset for business insights

# Revenue Insights by Gender

## Male Customers

**\$157,890** total revenue

Representing 68% of customer base with 2,652 shoppers

## Female Customers

**\$75,191** total revenue

Representing 32% of customer base with 1,248 shoppers

Male customers generate more than double the revenue of female customers, suggesting opportunities for targeted marketing campaigns to balance engagement.



# Product Performance & Customer Ratings

## Gloves

Highest rated at 3.86 stars

## Sandals

Strong rating of 3.84 stars

## Boots

Rated 3.82 stars by customers

Top-rated products should be featured prominently in marketing campaigns to leverage positive customer sentiment and drive conversions.



# Shipping & Discount Analysis

## Shipping Type Comparison

Express shipping customers show slightly higher average purchase amounts, indicating willingness to pay premium for faster delivery.

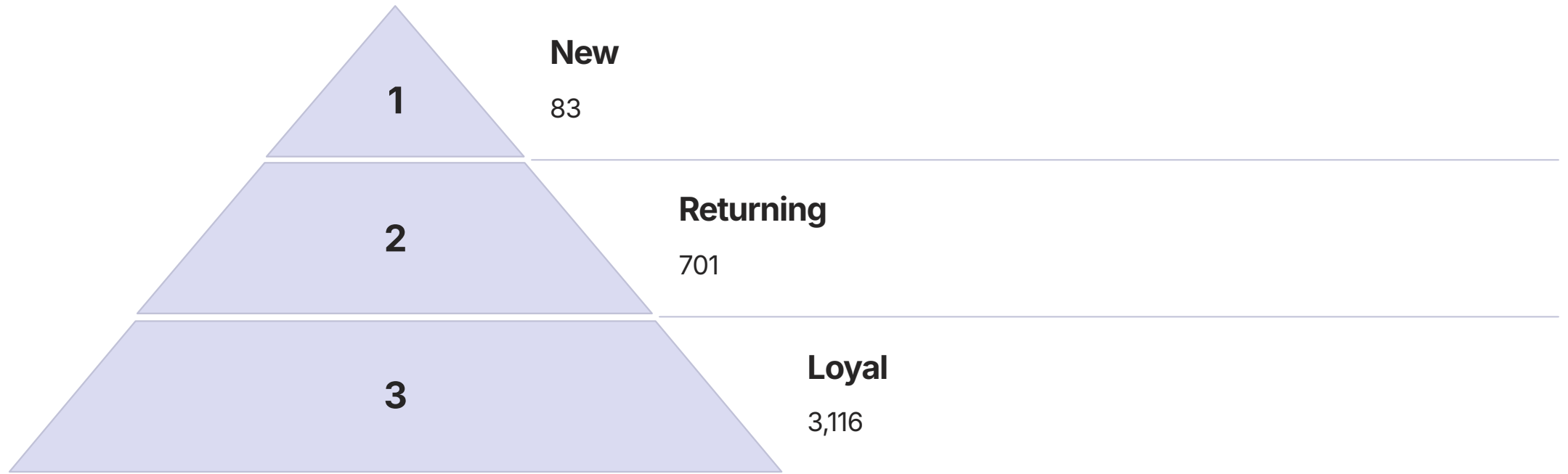
Standard shipping remains the most popular choice, used by majority of customers seeking value.

## Discount-Dependent Products

- **Hat:** 50% discount rate
- **Sneakers:** 49.66% discount rate
- **Coat:** 49.07% discount rate
- **Sweater:** 48.17% discount rate

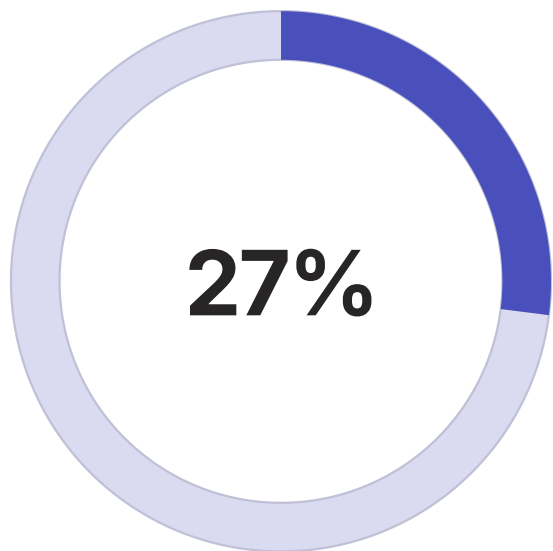


# Customer Segmentation Breakdown



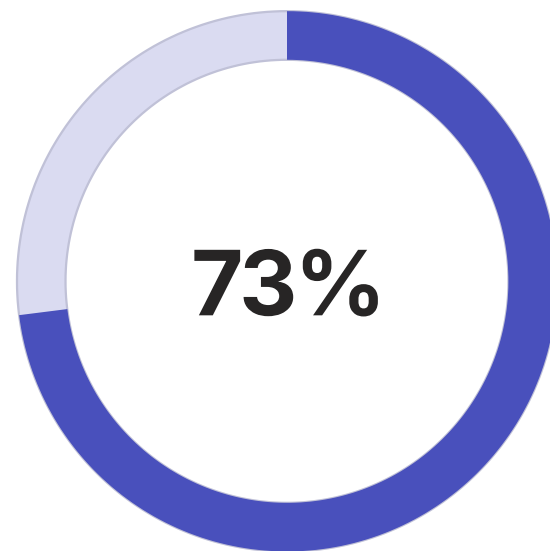
The customer base is dominated by loyal shoppers (80%), demonstrating strong retention. However, the small new customer segment (2%) suggests opportunities to expand acquisition efforts and grow the customer base.

# Subscription Status Impact



**Subscribers**

1,053 customers with \$59.49 average spend



**Non-Subscribers**

2,847 customers with \$59.87 average spend

Despite similar spending patterns, only 27% of customers are subscribers. Among repeat buyers (5+ purchases), 958 are subscribers versus 2,518 non-subscribers—a significant opportunity to convert loyal customers into subscription members.



# Revenue by Age Demographics



**Young Adult**

\$62,143 total revenue



**Senior**

\$59,197 total revenue



**Adult**

\$55,978 total revenue



**Middle Aged**

\$55,763 total revenue

Revenue is relatively balanced across age groups, with Young Adults leading slightly. This distribution suggests broad market appeal and opportunities for age-specific marketing strategies.



# Strategic Recommendations



## Boost Subscriptions

Promote exclusive benefits to convert loyal repeat buyers into subscribers



## Loyalty Programs

Reward repeat buyers to strengthen retention and move customers into loyal segment



## Optimize Discounts

Balance promotional sales with margin control for sustainable growth



## Targeted Marketing

Focus campaigns on high-revenue segments and top-rated products