



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

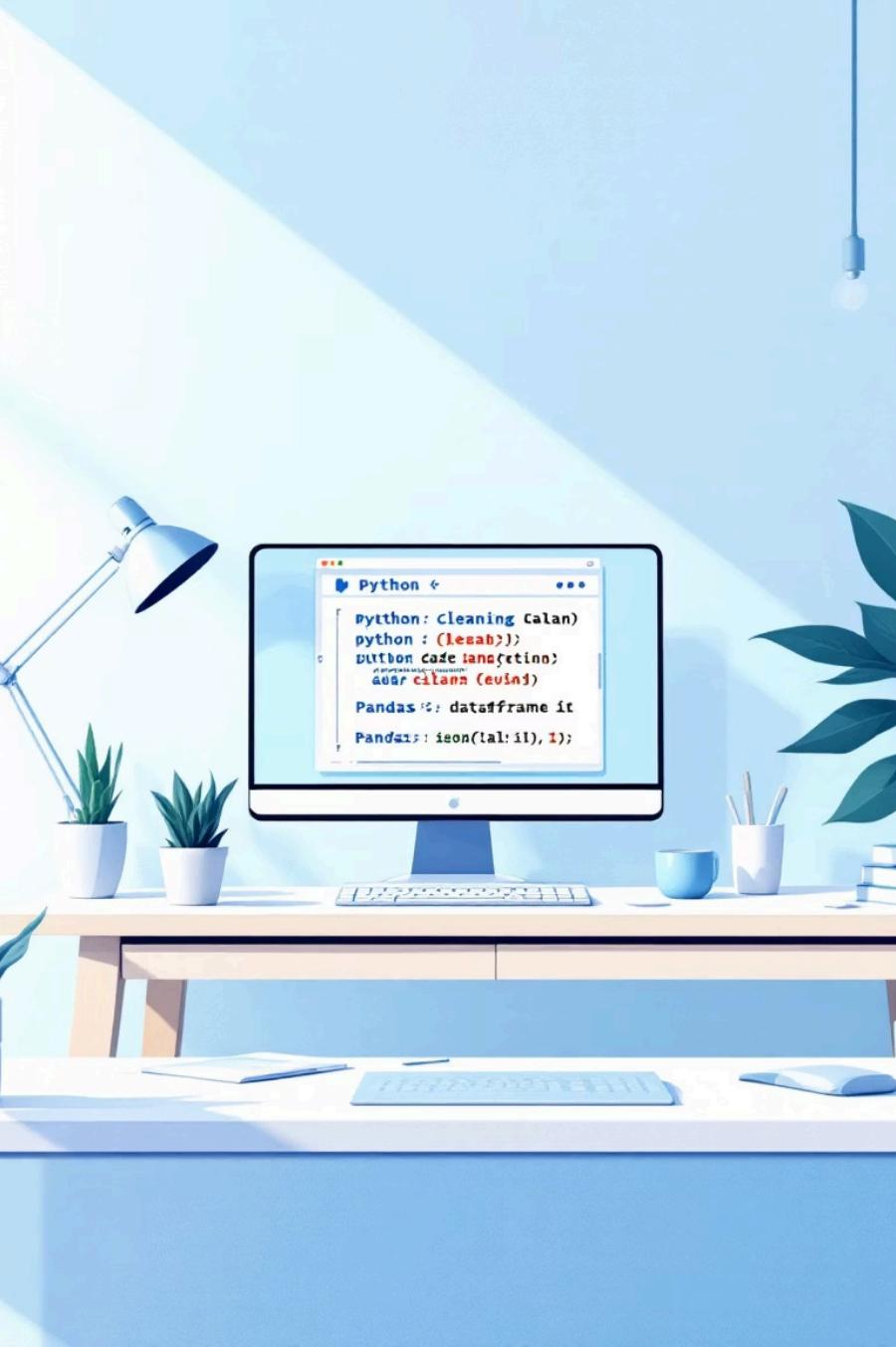
Product Categories

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

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

Sandals

Strong rating of 3.84 stars

Boots

Rated 3.82 stars by customers

Shipping & Discount Analysis

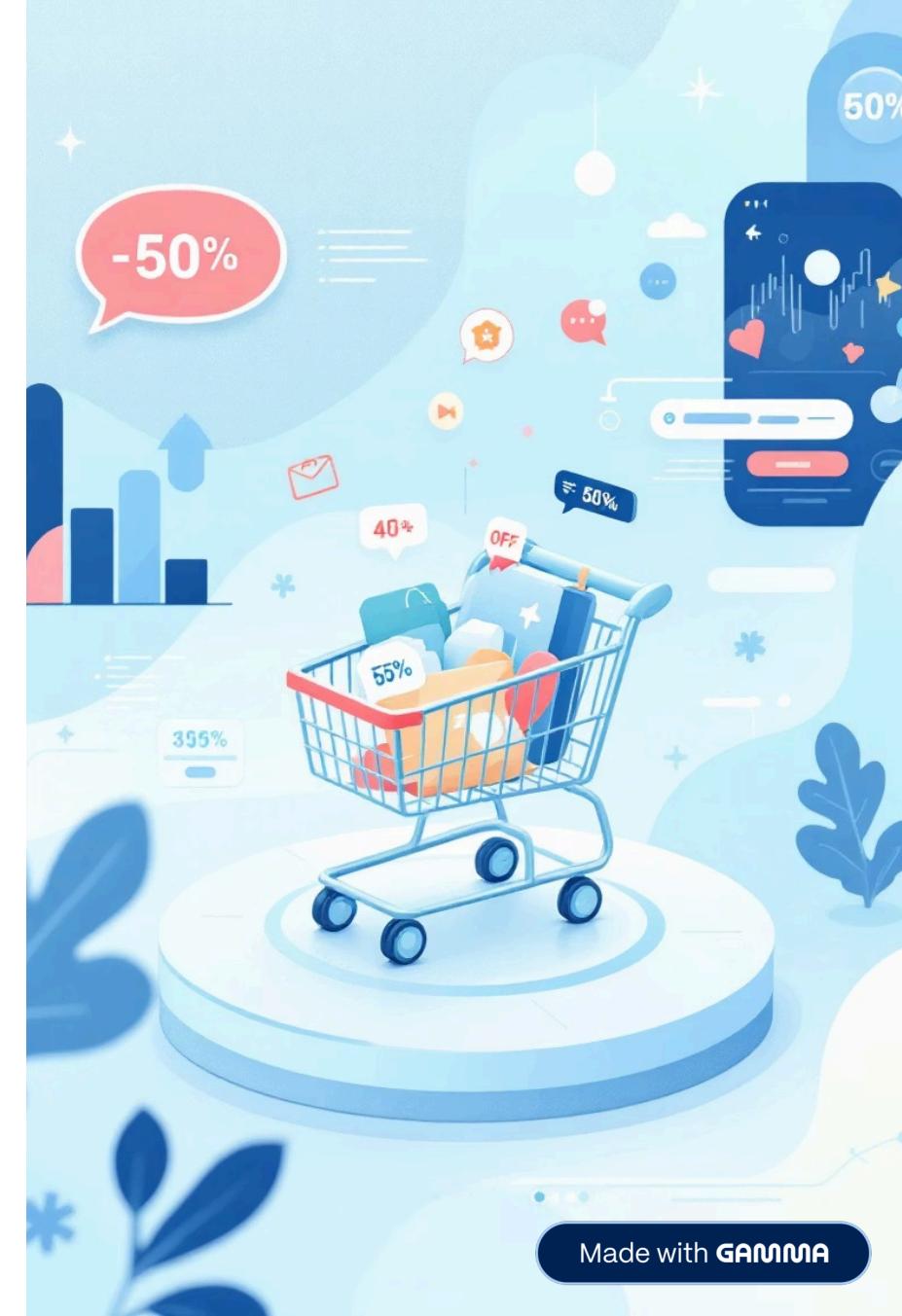
Shipping Type Comparison

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

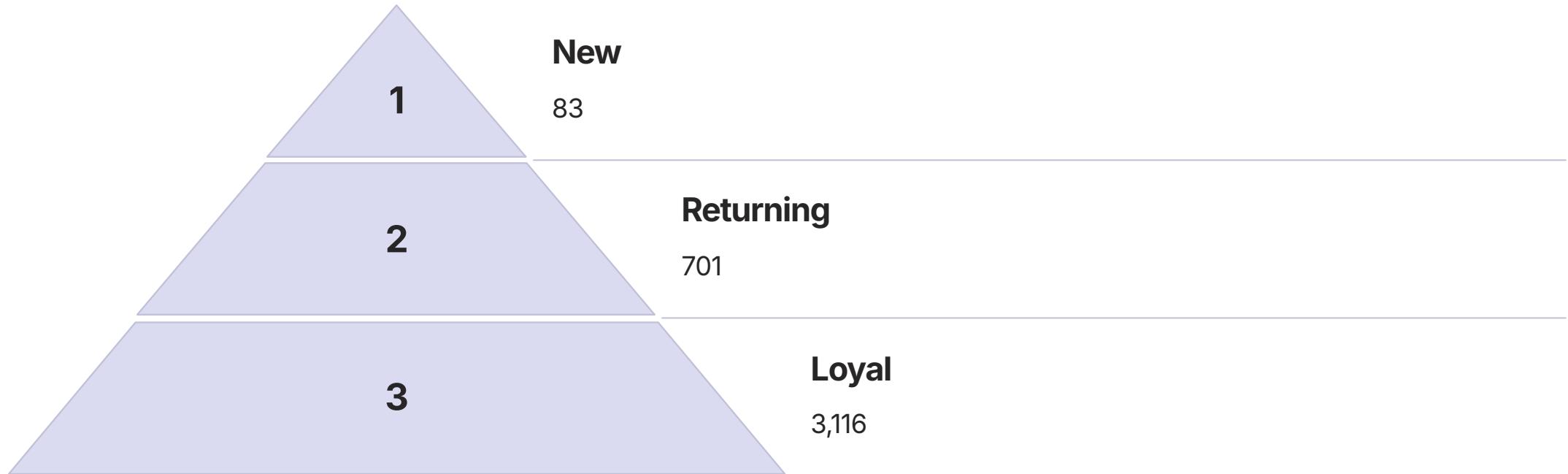
Standard shipping remains the most popular choice, used by majority of customers seeking value.

Discount-Dependent Products

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

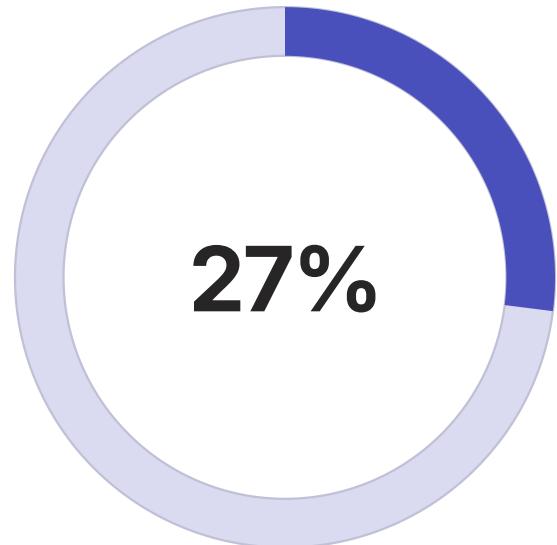


Customer Segmentation Breakdown



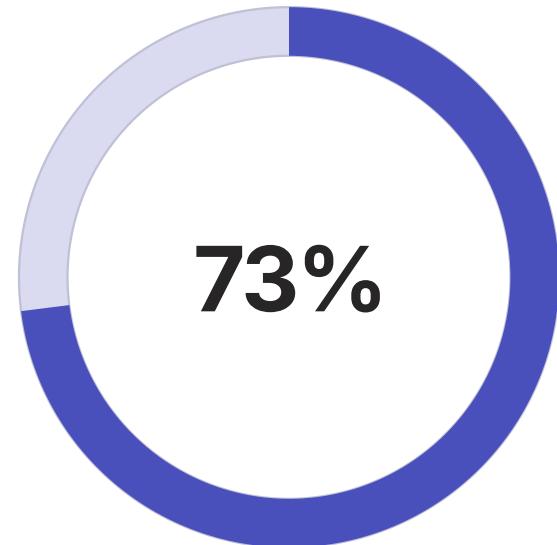
The customer base is dominated by loyal shoppers (80%), demonstrating strong retention. However, the small new customer segment (2%) suggests opportunities to expand acquisition efforts and grow the customer base.

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