



Customer Shopping Behavior Analysis

Uncovering insights from 3,900 purchases to drive strategic decisions

PROJECT SCOPE

Dataset at a Glance

3.9K

Total Purchases

Transactions analyzed

18

Data Points

Features per customer

50

Locations

Geographic coverage

Key Features Tracked

- Customer demographics & subscription status
- Purchase details & product preferences
- Shopping behavior & review ratings
- Shipping types & discount usage

Python Analysis Pipeline

01

Data Loading & Exploration

Imported dataset, checked structure with `df.info()` and summary statistics

02

Cleaning & Standardization

Handled 37 missing review ratings, standardized columns to `snake_case`

03

Feature Engineering

Created `age_group` bins and `purchase_frequency_days` columns

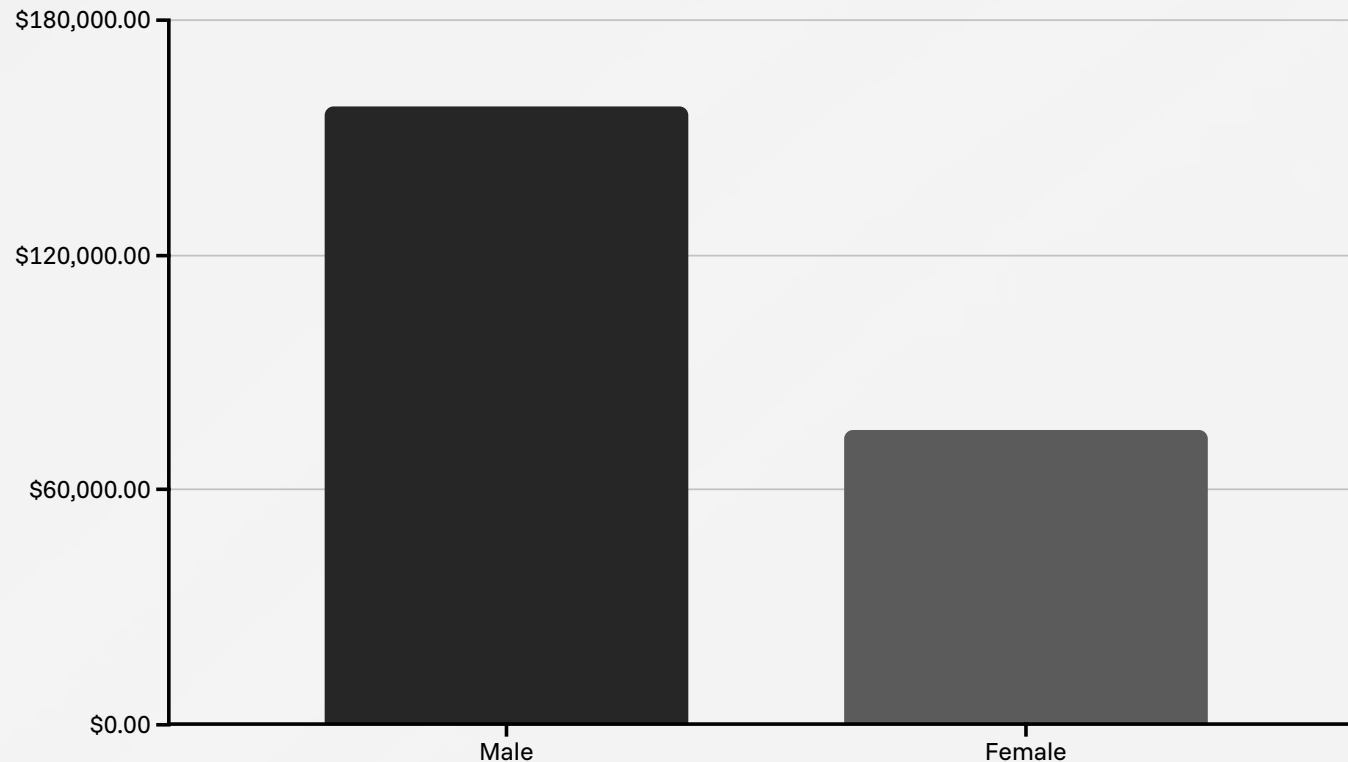
04

Database Integration

Connected to PostgreSQL for advanced SQL analysis



Revenue Insights by Gender



Male Customers Drive Revenue

Male shoppers generate 2.1x more revenue than female customers, representing a significant opportunity for targeted marketing.

68% of total revenue comes from male customers despite representing 68% of the customer base.

☆ TOP PERFORMERS

Product Performance Leaders



Gloves

Highest rated at 3.86 stars



Sandals

Second place with 3.84 stars



Boots

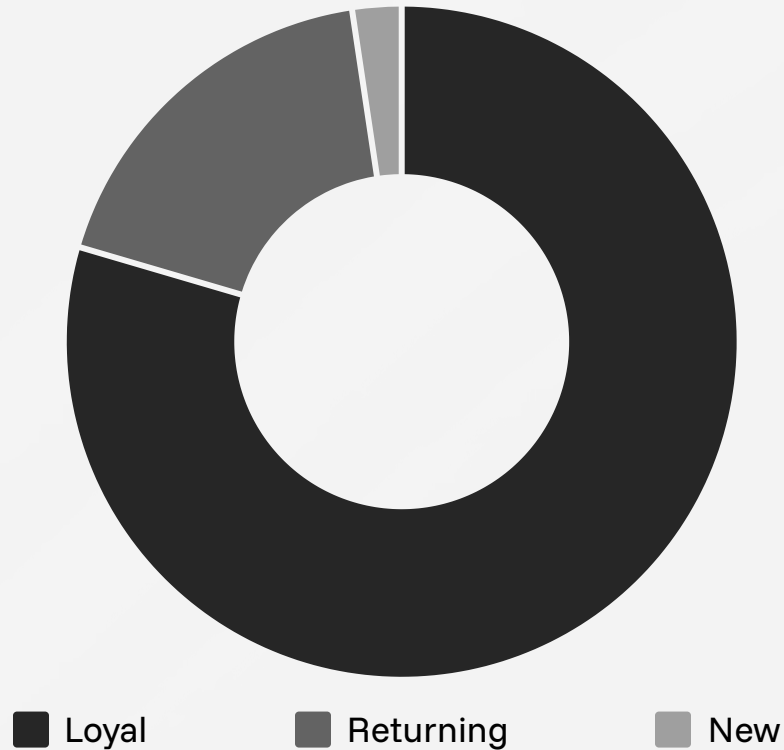
Strong performer at 3.82 stars



Hat

Top discount-dependent item
at 50% discount rate

Customer Segmentation Breakdown



Loyal Customers

80% of customer base with repeat purchases

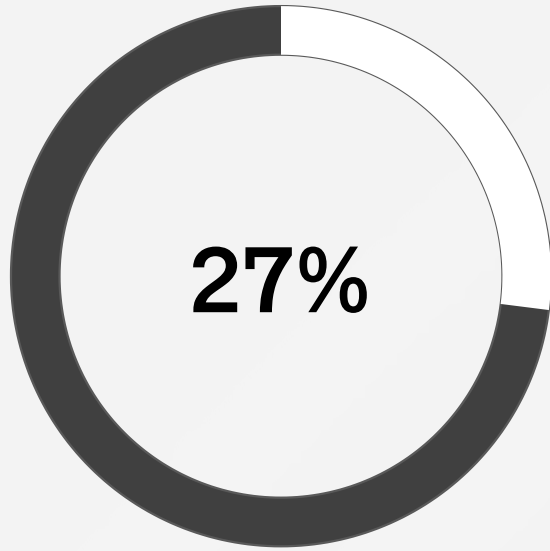
Returning Buyers

18% showing purchase patterns

New Shoppers

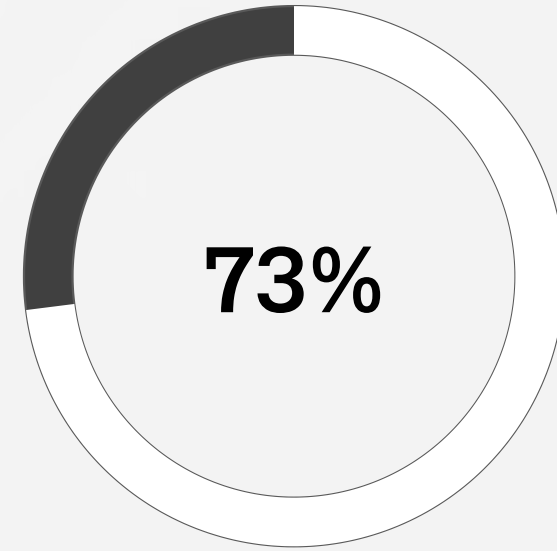
2% acquisition opportunity

Subscription vs. Non-Subscription Performance



Subscribers

1,053 customers with subscriptions



Non-Subscribers

2,847 customers without subscriptions

Revenue Comparison

Subscribers: **\$62,645** total revenue

Non-subscribers: **\$170,436** total revenue

Average spend nearly identical at ~\$60, but non-subscribers drive 2.7x more total revenue due to volume.

Opportunity: Convert more customers to subscriptions

Power BI Dashboard Highlights

Category Leaders

Clothing dominates with \$100K revenue and 1,800 sales

Age Group Insights

Young Adults lead revenue at \$62K, followed by Middle-aged at \$59K

Shipping Preferences

Express shipping users spend \$2 more on average than Standard

Overall Metrics

\$59.76 average purchase, 3.75 average rating across all products

Business Recommendations



Launch Loyalty Programs

Reward repeat buyers to convert Returning customers into Loyal segment



Boost Subscriptions

Promote exclusive benefits to increase 27% subscription rate



Targeted Marketing

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



Key Takeaways



Strong Loyal Base

80% loyal customers provide stable foundation for growth



Subscription Opportunity

73% non-subscribers represent untapped recurring revenue potential



Optimize Discounts

Balance promotional strategy with margin control for profitability