

Customer Shopping Behavior Analysis

Exploring 3,900 purchase records to uncover key trends in customer spending, purchasing patterns, and subscription behavior





 DATASET OVERVIEW

The Foundation

3,900

Purchase Records

Comprehensive transactional data

18

Data Columns

Rich feature set for analysis

37

Missing Values

Only in Review Rating column

Key features include customer demographics, purchase details, shopping behavior patterns, and product preferences across multiple categories



PYTHON ANALYSIS

Data Preparation & Cleaning

01

Data Loading

Imported dataset using pandas for initial exploration

02

Missing Data Handling

Imputed Review Rating nulls using median by category

03

Feature Engineering

Created age groups and purchase frequency metrics

04

Database Integration

Connected to PostgreSQL for advanced SQL analysis



Revenue by Gender



Key Finding

Male customers generated slightly higher total revenue compared to female customers in the dataset

Gender-based purchasing patterns reveal opportunities for targeted marketing strategies



High-Value Discount Users



Smart Shoppers

Customers who use discounts strategically



Above Average Spend

Still spending more than typical purchase amount



Prime Segment

High-value customers responsive to promotions

These customers represent a valuable segment: discount-conscious yet willing to spend significantly, making them ideal targets for strategic promotional campaigns

Product Performance Insights

Top-Rated Products

Identified 5 products with highest average review ratings

- Customer satisfaction leaders
- Strong word-of-mouth potential
- Premium positioning opportunities

Discount-Dependent Items

5 products with highest percentage of discounted purchases

- Price-sensitive categories
- Promotion-driven sales
- Margin optimization needed





ESHIPPING ANALYSIS

Shipping Type Comparison

Standard Shipping

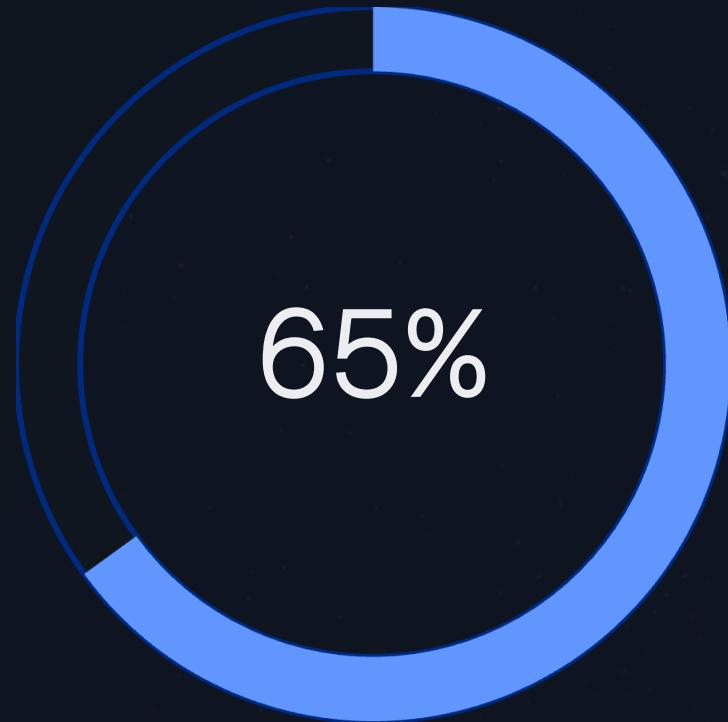
Lower average purchase amounts
Cost-conscious customer segment

Express Shipping

Higher average purchase amounts
Premium customer segment willing to pay more

- ❑ Express shipping users represent high-value customers who prioritize speed and convenience

Subscription Impact



Higher Spend

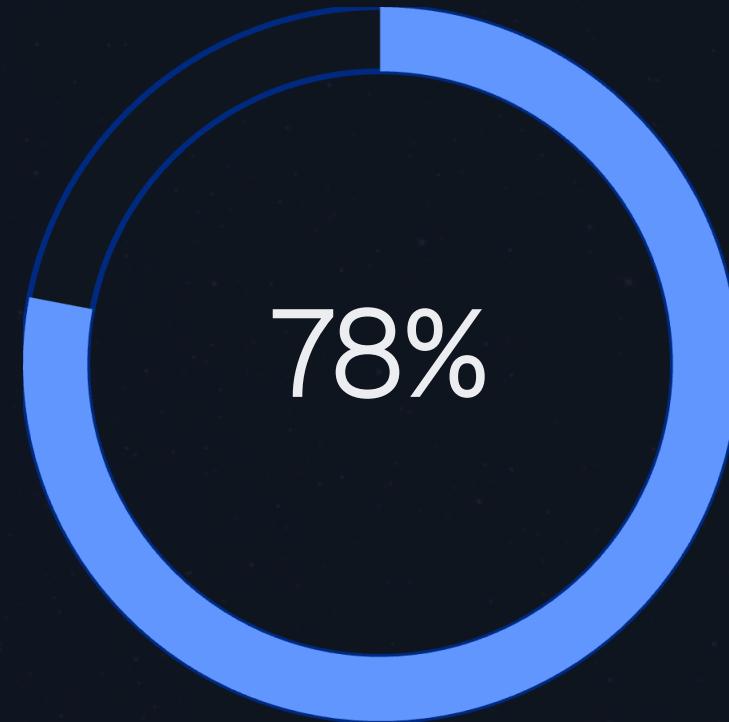
Subscribers spend more per transaction

Subscribers demonstrate significantly higher lifetime value and purchase frequency, making subscription conversion a critical growth lever



Revenue Multiple

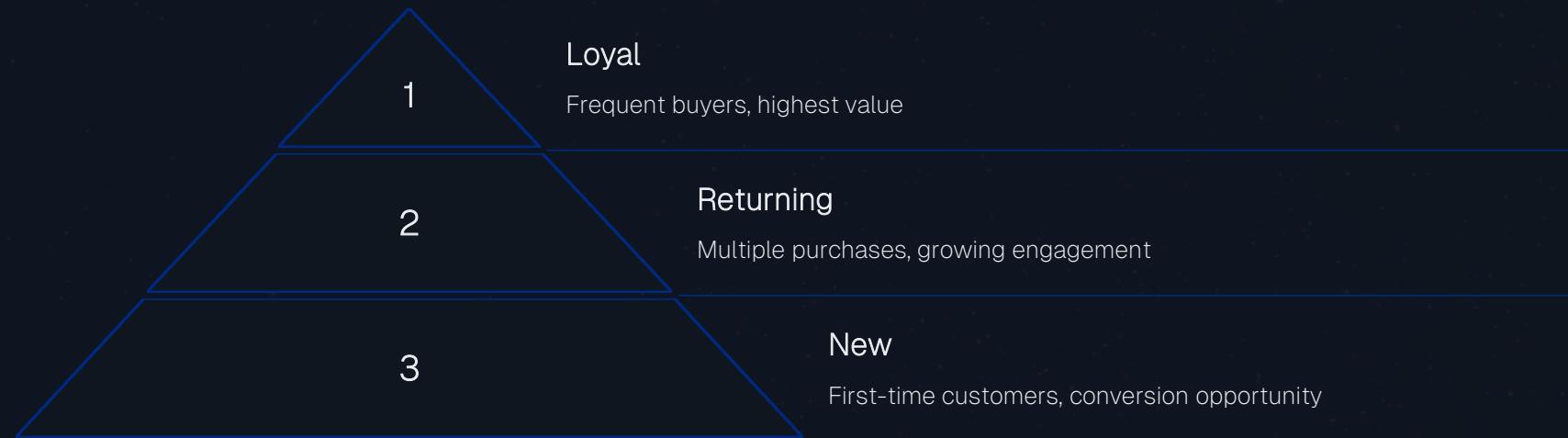
Total revenue from subscribers vs non-subscribers



Repeat Rate

Customers with 5+ purchases likely to subscribe

Segmentation Strategy



Age Group Revenue Leaders

25-34 and 35-44 age groups drive majority of revenue



Strategic Action Plan



Boost Subscriptions

Promote exclusive benefits and convert repeat buyers



Loyalty Programs

Reward repeat buyers to move them into loyal segment



Optimize Discounts

Balance sales growth with margin control



Targeted Marketing

Focus on high-revenue age groups and express shipping users

